TEXAS FARM BUREAU®

**National Ag in the Classroom Lesson Matrix**
**TEKS Alignment: 9th Grade – 12th Grade**
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**A Closer Look at Fats**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.F: make inferences and use evidence to support understanding.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.F: make inferences and use evidence to support understanding.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
Science

- Biology
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory,

and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
- 112.42.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
- 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
- 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

▪ 112.42.c.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

- 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

        - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
    - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.5: Science concepts--biological structures, functions, and processes. The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
        - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.

<u>No Social Studies TEKS</u>
<u>Health Education</u>

- <u>Health I</u>
    - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
        - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
        - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.
- <u>Health II</u>
    - 115.39.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected

to design a realistic, long-term personal dietary plan that promotes individual and family health.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.C: compare various food labels.
    - 127.30.d.13.D: discuss current issues in food production.
    - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

**A RECIPE FOR GENETICS: SELECTIVE BREEDING AND BIOENGINEERING**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

        - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.36.c.4.F: make inferences and use evidence to support understanding.
        - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
            - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.F: make inferences and use evidence to support understanding.
        - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
    - English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
  - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating

a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS

Science

- Biology
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
  - 112.42.c.7: Science concepts--mechanisms of genetics. The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.

- 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
- 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.

- 112.42.c.10: Science concepts--biological evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
  - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

▪ 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
- 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.

▪ 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
- 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.

○ Advanced Animal Science

▪ 127.52.d.12: The student understands the principles of molecular genetics and heredity. The student is expected to:
- 127.52.d.12.A: explain Mendel's laws of inheritance and predict genotypes and phenotypes of offspring using a Punnett square.
- 127.52.d.12.B: use a Punnett square and assign alleles to justify genotype and phenotype predictions.
- 127.52.d.12.C: identify the parts of the nucleotide and differentiate between the nucleotides found in deoxyribonucleic acid (DNA) and ribonucleic acid (RNA).
- 127.52.d.12.D: explain the functions of DNA and RNA.

▪ 127.52.d.13: The student applies the principles of reproduction and breeding to animal improvement. The student is expected to:

- 127.52.d.13.D: research breeding systems, including grading up, crossbreeding, linebreeding, and inbreeding, and explain the advantages and disadvantages of each using the scientific and engineering design process; and
- 127.52.d.13.E: research breeding methods, including embryo transfer, artificial insemination, and natural mating, and explain the advantages and disadvantages of each using the scientific and engineering design process.

- Advanced Plant and Soil Science
  - 127.58.d.2: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
  - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
    - 127.58.d.15.G: investigate and identify recent advancements in plant and soil science such as biotechnology, artificial intelligence, and drone, infrared, and sensor technologies.

**A SEARCH FOR THE SOURCE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.G: evaluate details read to determine key ideas.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.38.c.4.G: evaluate details read to understand key ideas.

○ English IV
▪ 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.39.c.4.G: evaluate details read to analyze key ideas.

Mathematics – No Math TEKS

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through

established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
    - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
        - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Science
- Biology
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.b: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- Agribusiness Management and Marketing
  - 127.46.d.4: The student recognizes and explains roles within organizations, inter-organizational systems, and the larger environment. The student is expected to:
    - 127.46.d.4.B: research and describe the domestic and global context of agricultural industries and careers.
- Advanced Animal Science
  - 127.52.d.15: The student discusses livestock market readiness and harvesting methods. The student is expected to:
    - 127.52.d.15.F: research animal by-products and explain their impact on society.
  - 127.52.d.16.D: The student explores methods of marketing animals and animal products. The student is expected to:
    - 127.52.d.16.D: research and evaluate the effectiveness of various labeling options to market animal products such as organic, farm-raised, hormone-free, cage-free, grass-

fed, antibiotic-free, and non-GMO labels based on consumption patterns and consumer preferences.

- Forestry and Woodland Ecosystems
  - 130.18.c.7: The student describes the role of wood technology in forest product development. The student is expected to:
    - 130.18.c.7.A: compare timber manufacturing processes and products.

**A TALE OF TWO BURGERS: BEEF AND PLANT-BASED PROTEIN**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.H: synthesize information from two texts to create new understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.A: develop questions for formal and informal inquiry.
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.G: examine sources for:
        - 110.36.c.11.G.i: credibility and bias, including omission.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen

comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.4.H: synthesize information from multiple texts to create new understanding.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.A: develop questions for formal and informal inquiry.
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.G: examine sources for:
        - 110.37.c.11.G.i: credibility and bias, including omission.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and

conventions of language to communicate ideas effectively.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.G: examine sources for:
    - 110.38.c.11.G.i: credibility, bias, and accuracy.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- <u>English IV</u>
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.C: formulate sound arguments and present using elements of classical speeches such as introduction, first and second transitions, body, conclusion, the art of persuasion, rhetorical devices, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.39.c.11.A: develop questions for formal and informal inquiry.
    - 110.39.c.11.E: locate relevant sources.
    - 110.39.c.11.F: synthesize information from a variety of sources.
    - 110.39.c.11.G: examine sources for:
        - 110.39.c.11.G.i: credibility, bias, and accuracy.

- 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Mathematics – No Math TEKS
Social Studies – No Social Studies TEKS
Science

- Environmental Systems
  - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.

Agriculture, Food, and Natural Resource

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.13: The student describes the principles of food products and processing. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.C: compare various food labels.
        - 127.30.d.13.D: discuss current issues in food production. and
- Food Technology and Safety
    - 130.15.c.3: The student explains the impact of food science systems. The student is expected to:
        - 130.15.c.3.A: explain the significance of food science systems.
        - 130.15.c.3.B: define trends in food production, world population, and supply and demand for food products.
        - 130.15.c.3.C: research trends in animal and food science research.
    - 130.15.c.7: The student demonstrates an understanding of the trends and issues important to careers in the food science industry by comparing and contrasting issues affecting the food science industry, including biotechnology, employment, safety, environmental, and animal welfare issues. The student is expected to:
        - 130.15.c.7.A: identify issues affecting food science.
        - 130.15.c.7.B: research history and policies related to food science issues.
        - 130.15.c.7.C: analyze and defend solutions for different environmental issues.
    - 130.15.c.8: The student describes the processing, packaging, quality analysis, and marketing of red meats and their by-products. The student is expected to:

- 130.15.c.8.E: identify methods of fabricating and marketing processed meats.

- Food Processing
  - 130.16.c.3: The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:
    - 130.16.c.3.B: explain trends in the consumption of food products.
  - 130.16.c.4: The student understands consumer satisfaction issues. The student is expected to:
    - 130.16.c.4.B: explain the factors that affect food palatability.

**AEROPONIC ENGINEERING AND VERTICAL FARMING**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.H: synthesize information from two texts to create new understanding.

- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.A: develop questions for formal and informal inquiry.
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.G: examine sources for:
    - 110.36.c.11.G.i: credibility and bias, including omission.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.37.c.4.G: evaluate details read to determine key ideas.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward

goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.G: evaluate details read to analyze key ideas.

Math - No Math TEKS

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Science

- Biology

- 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.

    - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.
    - 112.42.c.2.D: evaluate experimental and engineering designs.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
    - 112.42.c.5.B: compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.
- 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:

        - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
    - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
        - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes.
    - 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
        - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
        - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.
- <u>Aquatic Science:</u>
    - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.47.c.1.B: apply scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
        - 112.47.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.

- 112.47.c.1.D: use appropriate tools such as Global Positioning System (GPS), Geographic Information System (GIS), weather balloons, buoys, water testing kits, meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, field guides, water quality test kits or probes, 30-meter tape measures, tarps, ripple tanks, trowels, screens, buckets, sediment samples equipment, cameras, flow meters, cast nets, kick nets, seines, computer models, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, and field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, fish tanks and associated supplies, and hydrometers; 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.47.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

▪ 112.47.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

- 112.47.c.2.A: identify advantages and limitations of models such as their size, properties, and materials
- 112.47.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
- 112.47.c.2.C: use mathematical calculations to assess quantitative relationships in data.

    - 112.47.c.2.D: evaluate experimental and engineering designs.
- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.47.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.47.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.47.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.47.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.47.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.47.c.6.A: identify key features and characteristics of atmospheric, geological, hydrological, and biological systems as they relate to aquatic environments.
    - 112.47.c.6.B: describe the interrelatedness of atmospheric, geological, hydrological, and biological systems in aquatic ecosystems, including positive and negative feedback loops.
- 112.47.c.7: Science Concept: The student knows about the interdependence and interactions that occur in aquatic environments. The student is expected to:
    - 112.47.c.7.C: identify variables that affect the solubility of carbon dioxide and oxygen in water.
    - 112.47.c.7.D: evaluate factors affecting aquatic population cycles such as lunar cycles, temperature

variations, hours of daylight, and predator-prey relationships.
- 112.47.c.7.E: identify the interdependence of organisms in an aquatic environment such as in a pond, a river, a lake, an ocean, or an aquifer and the biosphere.

- 112.47.c.9: Science concepts. The student knows the role of cycles in an aquatic environment. The student is expected to:
  - 112.47.c.9.A: identify the role of carbon, nitrogen, water, and nutrient cycles in an aquatic environment, including upwellings and turnovers.
  - 112.47.c.9.B: examine the interrelationships between aquatic systems and climate and weather, including El Niño and La Niña, currents, and hurricanes.
- 112.47.c.14: Science concepts. The student understands how human activities impact aquatic environments. The student is expected to:
  - 112.47.c.14.A: analyze the cumulative impact of human population growth on an aquatic ecosystem.

- Environmental Systems:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.50.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.50.c.1.D: use appropriate tools such as meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars,

field guides, water quality test kits or probes, soil test kits or probes, 30 meter tape measures, tarps, shovels, trowels, screens, buckets, rock and mineral samples equipment, air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, and kick nets.

- 112.50.c.1.F: organize quantitative and qualitative data using probeware, spreadsheets, lab notebooks or journals, models, diagrams, graphs paper, computers, or cellphone applications.
- 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

- 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
  - 112.50.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
  - 112.50.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
  - 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.
  - 112.50.c.2.D: evaluate experimental and engineering designs.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.

    - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.50.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
    - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
    - 112.50.c.6.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems
    - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.
    - 112.50.c.6.F: evaluate the impact of waste management methods such as reduction, reuse, recycling, upcycling, and composting on resource availability in the local environment.
- 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
    - 112.50.c.7.A: describe the interactions between the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.
- 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:

    - 112.50.b.10.E: distinguish between the causes and effects of global warming and ozone depletion, including the causes, the chemicals involved, the atmospheric layer, the environmental effects, the human health effects, and the relevant.
- 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
    - 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
    - 112.50.c.12.B: evaluate the economic impacts of individual actions on the environment such as overbuilding, habitat destruction, poaching, and improper waste disposal.
    - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
    - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.
- 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:

- 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.

- Earth Systems:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.49.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence .
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations

to develop evidence-based arguments or evaluate designs. The student is expected to:

- 112.49.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
- 112.49.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
- 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.49.c.2.D: evaluate experimental and engineering designs.

- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.49.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
  - 112.49.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.49.c.9: Science concepts. The student knows that the lithosphere continuously changes as a result of dynamic and complex interactions among Earth's systems. The student is expected to:
  - 112.49.c.9.D: evaluate how weather and human activity affect the location, quality, and supply of available freshwater resources.

- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.C: model how greenhouse gases trap thermal energy near Earth's surface.
  - 112.49.c.11.D: evaluate how the combination of multiple feedback loops alter global climate.
  - 112.49.c.11.F: explain how the transfer of thermal energy among the hydrosphere, lithosphere, and atmosphere influences weather.
- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
- 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

▪ 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
- 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
- 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
- 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle.
- 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.

▪ 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
- 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.11.B: identify the components and properties of soils.
- 127.30.d.11.C: describe the basic structure and functions of plant parts.

○ <u>Horticultural Science</u>

▪ 127.54.d.4: The student understands the history and progression of the horticulture industry. The student is expected to:

- 127.54.d.4.A: trace how relevant historical advancements in the horticulture industry relate to current industry practices.
- 127.54.d.4.B: identify and describe different disciplines of horticulture such as arboriculture, floriculture, olericulture, pomology, viticulture, turf management, and ornamental horticulture.
- 127.54.d.4.C: identify and research emerging technology in the horticulture industry.
- 127.54.d.4.D: identify current trends in the horticulture industry.

▪ 127.54.d.5: The student identifies plant structures and their functions and needs. The student is expected to:

- 127.54.d.5.A: classify horticultural plants by their common and scientific names.
- 127.54.d.5.B: describe functional differences in plant structures, including roots, stems, flowers, leaves, and fruit.
- 127.54.d.5.E: analyze environmental needs of plants, including light, water, and nutrients.

○ Advanced Plant and Soil Science

▪ 127.58.d.2: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 127.58.d.2.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
- 127.58.d.2.D: use appropriate tools such as microscopes, measuring equipment, sensors, plant propagation tools, soil testing kits, and calculators.
- 127.58.d.2.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

TEXAS FARM BUREAU®

**AGRICULTURAL LAND USE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.H: synthesize information from two texts to create new understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.36.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.G: examine sources for:
    - 110.36.c.11.G.i: credibility and bias, including omission.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.4.H: synthesize information from multiple texts to create new understanding.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.37.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.37.c.11.E: locate relevant sources.
  - 110.37.c.11.F: synthesize information from a variety of sources.
  - 110.37.c.11.G: examine sources for:
    - 110.37.c.11.G.i: credibility and bias, including omission.
  - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- <u>English III</u>
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts

that are legible and use appropriate conventions. The student is expected to:

- 110.38.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.

- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.G: examine sources for:
    - 110.38.c.11.G.i: credibility, bias, and accuracy.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.C: formulate sound arguments and present using elements of classical speeches such as introduction, first and second transitions, body, conclusion, the art of persuasion, rhetorical devices, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.39.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.E: locate relevant sources.
  - 110.39.c.11.F: synthesize information from a variety of sources.
  - 110.39.c.11.G: examine sources for:
    - 110.39.c.11.G.i: credibility, bias, and accuracy.
  - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Science

- Aquatic Science
  - 112.47.c.14: Science concepts. The student understands how human activities impact aquatic environments. The student is expected to:

- 112.47.c.14.B: predict effects of chemical, organic, physical, and thermal changes due to humans on the living and nonliving components of an aquatic ecosystem.

- Biology
  - 112.42.c.1: Scientific processes. Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
  - 112.42.c.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

        - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - Environmental Systems
        - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
            - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
        - 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:
            - 112.50.c.10.A: identify sources of emissions in air, soil, and water, including point and nonpoint sources.

Mathematics – No Math TEKS

Social Studies

- United States History Since 1877
    - 113.41.c.12: Geography. The student understands the impact of geographic factors on major events. The student is expected to analyze the impact of physical and human geographic factors on the Klondike Gold Rush, the Panama Canal, the Dust Bowl, and the levee failure in New Orleans after Hurricane Katrina.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
- 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

▪ 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
- 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
- 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
- 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle.
- 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.

▪ 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
- 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.11.B: identify the components and properties of soils.
- 127.30.d.11.C: describe the basic structure and functions of plant parts.

- Horticultural Science
  - 127.54.d.4: The student understands the history and progression of the horticulture industry. The student is expected to:
    - 127.54.d.4.A: trace how relevant historical advancements in the horticulture industry relate to current industry practices.
    - 127.54.d.4.B: identify and describe different disciplines of horticulture such as arboriculture, floriculture, olericulture, pomology, viticulture, turf management, and ornamental horticulture.
    - 127.54.d.4.C: identify and research emerging technology in the horticulture industry.
    - 127.54.d.4.D: identify current trends in the horticulture industry.
  - 127.54.d.5: The student identifies plant structures and their functions and needs. The student is expected to:
    - 127.54.d.5.A: classify horticultural plants by their common and scientific names.
    - 127.54.d.5.B: describe functional differences in plant structures, including roots, stems, flowers, leaves, and fruit.
    - 127.54.d.5.E: analyze environmental needs of plants, including light, water, and nutrients.
- Energy and Natural Resource Technology
  - 130.11.c.5: The student identifies water use and management in agricultural settings. The student is expected to:
    - 130.11.c.5.C: discuss how agricultural uses may impact water resources.
    - 130.11.c.5.F: evaluate how the different agricultural water uses may impact water availability.
  - 130.11.c.7: The student examines soil erosion as related to agricultural production. The student is expected to:
    - 130.11.c.7.A: identify agricultural production practices that can contribute to soil erosion.
    - 130.11.c.7.B: analyze effects of soil erosion.
    - 130.11.c.7.D: identify soil erosion control methods and programs.
- Advanced Energy and Natural Resource Technology

        - 130.12.c.10: The student examines soil erosion as related to natural resource management and energy production. The student is expected to:
            - 130.12.c.10.B: analyze the components and functions of soils.
            - 130.12.c.10.D: compare soil erosion control methods.
    - Wildlife, Fisheries, and Ecology Management
        - 130.17.c.6: The student examines natural cycles and ecological concepts. The student is expected to:
            - 130.17.c.6.A: explain the hydrologic, nitrogen, carbon, and nutrient cycles.
            - 130.17.c.6.B: evaluate the impact of natural cycles on succession.
            - 130.17.c.6.C: analyze the effects of natural cycles on population dynamics.
    - Range Ecology and Management
        - 130.19.c.5: The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:
            - 130.19.c.5.A: discuss components of rangeland with an emphasis on soil.
        - 130.19.c.8: The student identifies methods of maintaining and improving rangeland for wildlife management. The student is expected to:
            - 130.19.c.8.B: identify plants species harmful to wildlife.
            - 130.19.c.8.C: analyze how wildlife species use range plants.
    - Advanced Plant and Soil Science
        - 127.58.d.2: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
            - 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
            - 127.58.d.2.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.

        - 127.58.d.2.D: use appropriate tools such as microscopes, measuring equipment, sensors, plant propagation tools, soil testing kits, and calculators.
        - 127.58.d.2.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
    - 127.58.d.8: The student understands interrelationships between plants, soil, and people in historical and current contexts. The student is expected to:
        - 127.58.d.8.B: explain how humans have influenced plant selection and how plant selection has influenced civilization's development.
    - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
        - 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.
        - 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.
        - 127.58.d.12.H: evaluate and determine soil health through soil testing.

**AGRICULTURAL PRODUCTION REGIONS IN THE UNITED STATES**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making,

and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Science

- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:

- 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.

Social studies

- United States History Since 1877
  - 113.41.c.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.c.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
  - 113.41.c.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.41.c.28.A: analyze primary and secondary sources such as maps, graphs, speeches, political cartoons, and artifacts to acquire information to answer historical questions.
- World Geography Studies
  - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.c.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:

- 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
- 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

**ALGACULTURE AND BIOFUEL**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.36.c.11.A: develop questions for formal and informal inquiry.
        - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.37.c.11.A: develop questions for formal and informal inquiry.
- 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.38.c.11.A: develop questions for formal and informal inquiry.
    - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.A: develop questions for formal and informal inquiry.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Math

- Algebra 1
    - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
        - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
        - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications

        - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
            - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
    - Advanced Quantitative Reasoning
        - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Statistics
        - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Social Studies

- World History Studies
    - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies

critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Science

- Biology
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.D: evaluate experimental and engineering designs.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
    - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.

        - 112.42.c.5.B: compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.
    - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
        - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes.
    - 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
        - 112.42.c.13.A: investigate and evaluate how ecological relationships, including predation, parasitism, commensalism, mutualism, and competition, influence ecosystem stability.
        - 112.42.c.13.B: analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models.
        - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
        - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.
- Aquatic Science
    - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.

    - 112.47.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.47.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.47.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.47.c.2.D: evaluate experimental and engineering designs.
- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.47.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.47.c.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.47.c.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.47.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

        - 112.47.c.9: Science concepts. The student knows the role of cycles in an aquatic environment. The student is expected to:
            - 112.47.c.9.A: identify the role of carbon, nitrogen, water, and nutrient cycles in an aquatic environment, including upwellings and turnovers.
    - Environmental Systems
        - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
            - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
            - 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
            - 112.50.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
            - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
            - 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
            - 112.50.c.1.H: distinguish among scientific hypotheses, theories, and laws.
        - 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
            - 112.50.c.2.D: evaluate experimental and engineering designs.
        - 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.50.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.
- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
    - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.
- 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
    - 112.50.c.9.E: analyze the impact of natural global climate change on ice caps, glaciers, ocean currents, and surface temperatures.
- 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:

    - 112.50.b.10.E: distinguish between the causes and effects of global warming and ozone depletion, including the causes, the chemicals involved, the atmospheric layer, the environmental effects, the human health effects, and the relevant wavelengths on the electromagnetic spectrum (IR and UV).
- 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
    - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
    - 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
    - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
    - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.
- 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:

- 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
- 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.

- Earth Systems Science
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.49.c.2.D: evaluate experimental and engineering designs.

- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.49.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
  - 112.49.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.E: predict how human use of Texas's naturally occurring resources such as fossil fuels, minerals, soil, solar energy, and wind energy directly and indirectly changes the cycling of matter and energy through Earth's systems.
- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.
  - 112.49.c.13.B: explore global and Texas-based careers that involve the exploration, extraction, production, use, disposal, regulation, and protection of Earth's resources.

Agriculture, Food, and Natural Resources

- Energy and Natural Resource Technology
  - 127.32.d.3: The student discusses the importance and scope of natural resources. The student is expected to:
    - 127.32.d.3.A: identify various types of natural resources.
    - 127.32.d.3.B: discuss renewable and non-renewable energy resources and their impact on the environment.
- Advanced Energy and Natural Resource Technology
  - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
    - 127.33.d.3.A: identify various types of natural resources.
    - 127.33.d.3.B: identify renewable, non-renewable, and sustainable energy resources and determine their availability.
  - 127.33.d.11: The student learns the processes for producing energy and green products from agricultural, biomass, fossil fuel, wind, solar, and geothermal sources. The student is expected to:
    - 127.33.d.11.A: identify agricultural and silvicultural crops and bio-products suitable for renewable production.
    - 127.33.d.11.B: discuss production processes for agricultural- and silvicultural-based bio-products.
- Wildlife, Fisheries, and Natural Resources
  - 127.36.d.9: The student demonstrates concepts related to optimum production. The student is expected to:
    - 127.36.d.9.A: discuss the importance and progress of aquaculture as an emerging industry.

**APPLES AND THE SCIENCE OF GENETIC SELECTION**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.

- <u>English II</u>
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
            - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.39.c.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time.
        - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.39.c.4.G: evaluate details read to analyze key ideas.
        - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

Mathematics – No Math TEKS
Social Studies – No Social Studies TEKS
Science

- Biology

        - 112.42.c.10: The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
            - 112.42.c.10.c: analyze and evaluate how natural selection may lead to speciation.
    - Integrated Physics and Chemistry
        - 112.44.c.7: Science concepts. The student knows that relationships exist between the structure and properties of matter. The student is expected to:
            - 112.44.c.7.A: model basic atomic structure and relate an element's atomic structure to its bonding, reactivity, and placement on the Periodic Table.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:

- 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.

- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
  - 127.30.d.13.D: discuss current issues in food production.

- Food Technology and Safety
  - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
    - 127.34.d.2.A: explain the significance of food science systems.
    - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
  - 127.34.d.9: The student describes the processing, packaging, quality analysis, and marketing of fruits, nuts, and vegetables and their by-products. The student is expected to:
    - 127.34.d.9.A: identify, classify, and grade fruits, nuts, and vegetables.
    - 127.34.d.9.B: demonstrate trimming, washing, waxing, peeling, blanching, and other marketing techniques.
- Horticulture Science
  - 127.54.d.4: The student understands the history and progression of the horticulture industry. The student is expected to:
    - 127.54.d.4.D: identify current trends in the horticulture industry.
  - 127.54.d.7: The student understands plant propagation techniques and growing methods. The student is expected to:
    - 127.54.d.7.A: identify asexual propagation methods for horticultural plants, including cuttings, grafting, budding, layering, and tissue culture.

**BRING HOME THE BLUE, NOT THE FLU!**

TEXAS FARM BUREAU®

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.37.c.4.G: evaluate details read to determine key ideas.

- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making,

and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Math

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical

models to analyze data as it applies to social sciences. The student is expected to:

- 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.

- Advanced Quantitative Reasoning
  - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Statistics
  - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.B: use scientific practices to plan and conduct.
- 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
  - 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
  - 112.42.c.5.B: compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.
  - 112.42.c.5.C: investigate homeostasis through the cellular transport of molecules.
- 112.42.c.6: Biological Structures, Functions, and Processes: The student knows how an organism grows and the importance of cell differentiation. The student is expected to:
  - 112.42.c.6.A: explain the importance of the cell cycle to the growth of organisms, including an overview of the stages of the cell cycle and deoxyribonucleic acid (DNA) replication models.
  - 112.42.c.6.B: explain the process of cell specialization through cell differentiation, including the role of environmental factors.
- 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and

diversity of life that has multiple mechanisms. The student is expected to:
    - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals
    - 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
  - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
    - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes.
  - 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
    - 112.42.c.13.A: investigate and evaluate how ecological relationships, including predation, parasitism, commensalism, mutualism, and competition, influence ecosystem stability.
    - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
    - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.
- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.50.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

▪ 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
- 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.

▪ 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
- 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.

○ Earth Systems Science:

▪ 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
- 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence .

        - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
        - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
    - 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
        - 112.49.c.12.F: explain the cycling of carbon through different forms among Earth's systems and how biological processes have caused major changes to the carbon cycle in those systems over Earth's history.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
        - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
    - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
        - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.C: compare various food labels.
        - 127.30.d.13.D: discuss current issues in food production.

        - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
    - Advanced Animal Science
        - 127.52.d.14: The student analyzes how diseases and parasites affect animal health. The student is expected to:
            - 127.52.d.14.A: examine how factors such as geographic location, age, genetic composition, and inherited diseases influence the health of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
            - 127.52.d.14.B: describe the process of immunity and disease transmission of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
            - 127.52.d.14.C: identify and describe pathogens and the diseases they cause in canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
    - Livestock and Poultry Production
        - 127.49.d.8: The student understands how livestock and poultry are affected by pests and diseases. The student is expected to:
            - 127.49.d.8.A: identify and describe how bacteria, fungi, viruses, genetics, and nutrition affect livestock and poultry health.
            - 127.49.d.8.B: identify signs, symptoms, and prevention of livestock and poultry diseases.

**BEEF: MAKING THE GRADE**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.F: make inferences and use evidence to support understanding.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.F: make inferences and use evidence to support understanding.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
Science

- Biology
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.42.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.42.c.7: Science concepts--mechanisms of genetics. The student knows the role of nucleic acids in gene expression. The student is expected to:
        - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an

organism, and examine scientific explanations for the origin of DNA.
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
    - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.
- 112.42.c.10: Science concepts--biological evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
    - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.

Social Studies

- United States History Studies Since 1877
    - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
        - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
        - 127.30.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
    - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
        - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
  - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.C: compare various food labels.

- <u>Livestock and Poultry Production</u>
  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
    - 127.49.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.

- 127.49.d.6: The student determines nutritional requirements of livestock and poultry. The student is expected to:
  - 127.49.d.6.B: identify sources of nutrients and classes of feed for livestock and poultry.
  - 127.49.d.6.C: identify vitamins, minerals, and feed additives for livestock and poultry.

- Advanced Animal Science
  - 127.52.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.52.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.52.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
  - 127.52.d.11: The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:
    - 127.52.d.11.A: describe the structures and functions of the digestive systems of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
    - 127.52.d.11.B: identify and describe sources of nutrients and classes of feeds for canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
  - 127.52.d.15: The student discusses livestock market readiness and harvesting methods. The student is expected to:
    - 127.52.d.15.D: research and describe federal and state meat inspection standards such as safety, hygiene, and quality control standards.

**BLUE'S THE CLUE: SOURING MILK FOR SCIENCE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.36.c.4.G: evaluate details read to determine key ideas.

▪ 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
- 110.36.c.11.A: develop questions for formal and informal inquiry.
- 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

○ English II

▪ 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.G: evaluate details read to determine key ideas.
- 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.37.c.11.A: develop questions for formal and informal inquiry.
  - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages

in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.38.c.11.A: develop questions for formal and informal inquiry.
    - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.A: develop questions for formal and informal inquiry.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies
- United States History Studies Since 1877

        - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
    - World History Studies
        - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
            - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
        - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
    - World Geography Studies
        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions,

drawing inferences and conclusions, and developing connections over time.
- 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Math

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications

        - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
            - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
    - Advanced Quantitative Reasoning
        - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Statistics
        - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Science

- Biology:

- 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.D: evaluate experimental and engineering designs.

- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.42.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.42.c.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.50.c.1.D: use appropriate tools such as meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 30 meter tape measures, tarps, shovels, trowels, screens, buckets, rock and mineral samples equipment, air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, field journals, various prepared slides, hand lenses, hot

plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, and kick nets.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.50.c.2.D: evaluate experimental and engineering designs.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:

        - 112.50.c.7.D: identify and describe how energy is used, transformed, and conserved as it flows through ecosystems.
- Earth Systems Science:
    - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.49.c.1.B: apply scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
        - 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
        - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
        - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
    - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
        - 112.49.c.2.D: evaluate experimental and engineering designs.

- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.B: analyze the impact on humans of naturally occurring extreme weather events such as flooding, hurricanes, tornadoes, and thunderstorms.
  - 112.49.c.12.D: analyze recent global ocean temperature data to predict the consequences of changing ocean temperature on evaporation, sea level, algal growth, coral bleaching, and biodiversity.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal

situations such as prepared and extemporaneous presentations.

- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.D: discuss current issues in food production; and
  - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

- Food Technology and Safety
  - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
    - 127.34.d.10.A: describe methods of preparing milk for processing.
    - 127.34.d.10.B: evaluate methods of processing milk and dairy products.
    - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.

**CARBON HOOFPRINTS: COWS AND CLIMATE CHANGE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.37.c.4.F: make inferences and use evidence to support understanding.
  - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies – No Social Studies TEKS
Mathematics – No Math TEKS
Science
- Biology

        - 112.42.c.13: The student knows that interactions at various levels of organization occur within an ecosystem to maintain stability. The student is expected to:
            - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
    - Earth Systems Science
        - 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
            - 112.49.c.12.B: analyze the impact on humans of naturally occurring extreme weather events such as flooding, hurricanes, tornadoes, and thunderstorms.
    - Environmental Systems
        - 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
            - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:

        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
        - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
        - 127.30.d.12.C: identify basic external anatomy of animals in agriculture.
    - 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
        - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
        - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
- Livestock and Poultry Production
    - 127.49.d.6: The student determines nutritional requirements of livestock and poultry. The student is expected to:
        - 127.49.d.6.A: describe and compare the digestive systems of ruminant and non-ruminant animals.
- Advanced Animal Science
    - 127.52.d.11: The student understands the anatomical structures and physiological functions of the digestive system to determine nutritional requirements of ruminant and non-ruminant animals. The student is expected to:
        - 127.52.d.11.A: describe the structures and functions of the digestive systems of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.

**CHAIN OF FOOD**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
Social Studies

- Economics with Emphasis on the Free Enterprise System and Its Benefits
    - 113.31.d.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
        - 113.31.d.1.C: describe the economic factors of production: land, labor, capital, and entrepreneurship.
    - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
    - 113.43.d.10: Economics. The student understands the distribution, characteristics, and interactions of the economic systems in the world. The student is expected to:

- 113.43.d.10.C: compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus commercial agriculture or cottage industries versus commercial industries.

- 113.43.d.12: Economics. The student understands the economic importance of, and issues related to, the location and management of resources. The student is expected to:
  - 113.43.d.12.A: analyze how the creation, distribution, and management of key natural resources affects the location and patterns of movement of products, money, and people.
- 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
  - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:

        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.D: discuss current issues in food production.
        - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

**COLIFORM COUNTS**

<u>English Language Arts and Reading</u>

- <u>English I</u>
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.36.c.4.G: evaluate details read to determine key ideas.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

Social Studies

- United States History Studies Since 1877
    - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
    - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and

disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Math

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications

        - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
            - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
    - Advanced Quantitative Reasoning
        - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Statistics
        - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Science

- Biology:

- 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

- 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
- 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.

- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
- 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
  - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.50.c.1.B: apply scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.50.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.50.c.1.D: use appropriate tools such as meter sticks, metric rulers, pipettes, graduated cylinders, standard

laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 30 meter tape measures, tarps, shovels, trowels, screens, buckets, rock and mineral samples equipment, air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, and kick nets.

- 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

- 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
  - 112.50.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
  - 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

        - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
        - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
        - 112.50.c.7.D: identify and describe how energy is used, transformed, and conserved as it flows through ecosystems.
- Earth Systems Science:
    - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.49.c.1.B: apply scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
        - 112.49.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
        - 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
        - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.49.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
    - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.49.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
    - 112.49.c.12.B: analyze the impact on humans of naturally occurring extreme weather events such as flooding, hurricanes, tornadoes, and thunderstorms.
    - 112.49.c.12.D: analyze recent global ocean temperature data to predict the consequences of changing ocean temperature on evaporation, sea level, algal growth, coral bleaching, and biodiversity.

Agriculture, Food, and Natural Resources

- Food Technology and Safety
    - 127.34.d.4: The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:

- 127.34.d.4.A: identify food industry inspection standards, including hazard analysis and critical control points.

- Food Processing
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**CONCENTRATE ON THE SOLUTION**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making.

Social Studies – No Social Studies TEKS

Mathematics

- Algebra I
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.C: select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.

Science
- Chemistry
  - 112.43.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.43.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.43.c.7: Science concepts. The student knows how atoms form ionic, covalent, and metallic bonds. The student is expected to:
    - 112.43.c.7.B: name and write the chemical formulas for ionic and covalent compounds using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
  - 112.43.c.8: Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:
    - 112.43.c.8.C: calculate percent composition of compounds.
  - 112.43.c.12.: Science concepts. The student understands and applies various rules regarding acids and bases. The student is expected to:
    - 112.43.c.12.C: differentiate between strong and weak acids and bases.

Agriculture, Food, and Natural Resources
- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:

        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.B: identify the components and properties of soils.
- Landscape Design and Management
    - 127.39.d.6: The student performs landscape maintenance services. The student is expected to:
        - 127.39.d.6.C: analyze nutritional needs of plants.
        - 127.39.d.6.D: develop fertilization plans that address plant needs and environmental concerns.
- Turf Grass Management
    - 127.40.d.4: The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass maintenance. The student is expected to:
        - 127.40.d.4.F: analyze nutritional needs of turf grass.
        - 127.40.d.4.G: develop fertilization plans that address turf grass needs and environmental concerns.
- Greenhouse Operation and Production
    - 127.55.d.11: The student investigates pest and disease identification and control methods in the greenhouse environment. The student is expected to:
        - 127.55.d.11.B: identify essential components of an integrated pest management plan in controlling an insect, pathogen, or weed problem.
- Advanced Plant and Soil Science
    - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
        - 127.58.d.15.E: evaluate the effectiveness of plant management practices, including germination tests, plant spacing trials, and fertilizer tests.

TEXAS FARM BUREAU®

**COOKING RIGHT: THE SCIENCE OF COOKING A HAMBURGER**

English Language Arts and reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

Social Studies
- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

        - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
    - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
    - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Math

- Algebra 1
    - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
- 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.

- Mathematical Models with Applications
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
    - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
- Advanced Quantitative Reasoning
  - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Statistics
  - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.

- 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

        - 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
            - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
            - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
        - 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
            - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
            - 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
    - Environmental System:
        - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
            - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
            - 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
            - 112.50.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
            - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories
  - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
  - 112.50.c.5.G: predict changes that may occur in an ecosystem if genetic diversity is increased or decreased

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.

        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
        - 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
        - 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
        - 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle.
        - 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.C: compare various food labels.
        - 127.30.d.13.D: discuss current issues in food production.
        - 127.30.d.13.E identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
- Food Technology and Safety
    - 127.34.d.5: The student identifies safety and governmental regulations involved in the processing and labeling of foods. The student is expected to:
        - 127.34.d.5.B: describe packaging, labeling, and storage requirements for red meat, poultry, and fish.

- 127.34.d.5.C: explain the impact of temperature in food preservation.

- Food Processing
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**DESIGN 'Y'ER GENES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.39.c.4.G: evaluate details read to analyze key ideas.

Social Studies

- United States History Studies Since 1877
    - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list

and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather

information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
    - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
- Advanced Quantitative Reasoning
  - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.

        - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Statistics
        - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Science

- Biology:
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.6: Biological Structures, Functions, and Processes: The student knows how an organism grows and the importance of cell differentiation. The student is expected to:
    - 112.42.c.6.A: explain the importance of the cell cycle to the growth of organisms, including an overview of the stages of the cell cycle and deoxyribonucleic acid (DNA) replication models.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA)
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
    - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.
- 112.42.c.8: Mechanisms of Genetics: The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:

- 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over during meiosis in increasing diversity in populations of organisms that reproduce sexually.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.C: describe the basic structure and functions of plant parts.
    - 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- Advanced Animal Science
  - 127.52.d.12: The student understands the principles of molecular genetics and heredity. The student is expected to:
    - 127.52.d.12.C: identify the parts of the nucleotide and differentiate between the nucleotides found in deoxyribonucleic acid (DNA) and ribonucleic acid (RNA).

- 127.52.d.12.D: explain the functions of DNA and RNA.

**DISCOVER AGRICULTURE CAREERS: ONE PROBLEM AT A TIME**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.

- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS

Science

- Biology
    - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a

science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers

- Aquatic Science
    - 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.47.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- Environmental Systems
    - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- Earth Systems Science
    - 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

No Social Studies TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

        - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
            - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
            - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
            - 127.30.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
        - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
            - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
            - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - Professional Standards and Communication in Agribusiness
        - 127.45.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
            - 127.45.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of agribusiness.
            - 127.45.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in agriculture, food, and natural resources industries.
            - 127.45.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
            - 127.45.d.1.F: identify training, education, and certification requirements for occupational choices.
    - Agribusiness Management and Marketing

        - 127.46.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
            - 127.46.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of agribusiness systems science and develop a plan for obtaining the education, training, and certifications required.
            - 127.46.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
            - 127.46.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
    - Agricultural Leadership, Research, and Communications
        - 127.47.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
            - 127.47.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of agriculture and develop a plan for obtaining the education, training, and certifications required for the chosen occupation.
            - 127.47.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
            - 127.47.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
    - Equine Science
        - 127.48.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

- 127.48.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of equine science.
- 127.48.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in equine science.
- 127.48.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- 127.48.d.1.F: identify training, education, and certification requirements for occupational choices.

- Livestock and Poultry Production

  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.49.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of livestock and poultry production.
    - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
    - 127.49.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
    - 127.49.d.1.F: identify training, education, and certification requirements for occupational choices.

- Small Animal Management

  - 127.50.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.50.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of small animal management.
    - 127.50.d.1.B: identify and demonstrate interpersonal, problem solving, and critical thinking skills used in small animal management.

- 127.50.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- 127.50.d.1.F: identify training, education, and certification requirements for occupational choices.

- Veterinary Science
  - 127.51.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.51.d.1.A: identify career, education, and entrepreneurship opportunities for a chosen occupation in the field of veterinary science and develop a plan for obtaining the education, training, and certifications required.
    - 127.51.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.51.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- Advanced Animal Science
  - 127.52.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.52.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of animal science and develop a plan for obtaining the education, training, and certifications required.
    - 127.52.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.52.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including

promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.

- Floral Design
    - 127.53.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.53.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of floral design and develop a plan for obtaining the education, training, and certifications required.
        - 127.53.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
        - 127.53.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- Horticulture Science
    - 127.54.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.54.d.1.A: identify career and entrepreneurship opportunities in the field of plant science and develop a plan for obtaining the education, training, and certifications required.
        - 127.54.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
        - 127.54.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- Greenhouse Operation and Production
    - 127.55.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

- 127.55.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of greenhouse operation and production.
- 127.55.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in greenhouse operation and production.
- 127.55.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- 127.55.d.1.F: identify training, education, and certification requirements for occupational choices.

- Viticulture
  - 127.56.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.56.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of viticulture and develop a plan for obtaining the education, training, and certifications required.
    - 127.56.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.56.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- Advanced Floral Design
  - 127.57.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.57.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of floral design and develop a plan for obtaining the education, training, and certifications required.
    - 127.57.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems,

taking initiative, communicating effectively, listening actively, and thinking critically.
- 127.57.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.

- Advanced Plant and Soil Science

  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of plant science and develop a plan for obtaining the education, training, and certifications required.
    - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.58.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.

**DON'T FORGET THE EGGS!**

English Language Arts and Reading

- English I

  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

Math

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

No Social Studies TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
        - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
        - 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
        - 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
        - 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle; and
        - 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.E identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
- Food Technology and Safety

        - 127.34.d.4: The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:
            - 127.34.d.4.D: assess conditions with regard to safety and health.
    - Food Processing
        - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
            - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**DOUBLE THE MUSCLE: PROBABILITIES AND PEDIGREES**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

TEXAS FARM BUREAU®

Social Studies – No Social Studies TEKS

Mathematics

- Statistics
  - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.47.c.1.C: select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
    - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
  - 111.47.c.5: Probability and random variables. The student applies the mathematical process standards to connect probability and statistics. The student is expected to:
    - 111.47.c.5.A: determine probabilities, including the use of a two-way table.

Science

- Biology
  - 112.42.c.7: Science Concept The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
  - 112.42.c.8: Science Concept. The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:
    - 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over

during meiosis in increasing diversity in populations of organisms that reproduce sexually.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- Livestock Production
  - 130.7.c.7: The student explains animal genetics and reproduction. The student is expected to:
    - 130.7.c.7.B: explain the use of genetics in animal agriculture such as Expected Progeny Differences (EPDs), phenotype, and genotype.
- Advanced Animal Science
  - 127.52.d.12: The student understands the principles of molecular genetics and heredity. The student is expected to:
    - 127.52.d.12.A: explain Mendel's laws of inheritance and predict genotypes and phenotypes of offspring using a Punnett square.
    - 127.52.d.12.B: use a Punnett square and assign alleles to justify genotype and phenotype predictions.

TEXAS FARM BUREAU®

**EARTH'S LAND AND SOIL RESOURCES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

▪ 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
- 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

○ <u>World Geography Studies</u>
▪ 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
- 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
- 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

○ <u>Economics with Emphasis on the Free Enterprise System and Its Benefits</u>
▪ 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
- 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Math – No Math TEKS

Science

- Biology:
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models
    - 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
        - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.

    - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
    - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
    - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport,

reproduction, and response in plants are facilitated by their structures.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.50.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
    - 112.50.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.
  - 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.50.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.50.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
  - 112.50.c.9.C: examine how natural processes such as succession and feedback loops can restore habitats and ecosystems.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
  - 112.50.c.12.E: argue from evidence whether or not a healthy economy and a healthy environment are mutually exclusive.
- 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
  - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
  - 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal

Protocol, the Kyoto Protocol, and the Paris Climate Accord.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.49.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
    - 112.49.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
  - 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.49.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.49.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.49.c.6: Science concepts. The student knows the evidence for the formation and composition of Earth's atmosphere, hydrosphere, biosphere, and geosphere. The student is expected to:
  - 112.49.c.6.A: describe how impact accretion, gravitational compression, radioactive decay, and cooling differentiated proto-Earth into layers.
  - 112.49.c.6.B: evaluate the roles of volcanic outgassing and water bearing comets in developing Earth's atmosphere and hydrosphere.
  - 112.49.c.6.C: evaluate the evidence for changes to the chemical composition of Earth's atmosphere prior to the introduction of oxygen.
  - 112.49.c.6.D: evaluate scientific hypotheses for the origin of life through abiotic chemical processes
  - 112.49.c.6.E: describe how the production of oxygen by photosynthesis affected the development of the atmosphere, hydrosphere, geosphere, and biosphere.
- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.A: analyze how energy transfer through Milankovitch cycles, albedo, and differences in

atmospheric and surface absorption are mechanisms of climate.
- 112.49.c.11.B: describe how Earth's atmosphere is chemically and thermally stratified and how solar radiation interacts with the layers to cause the ozone layer, the jet stream, Hadley and Ferrel cells, and other atmospheric phenomena.
- 112.49.c.11.C: model how greenhouse gases trap thermal energy near Earth's surface.

▪ 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
- 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
- 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

○ Principles Of Agriculture, Food, and Natural Resources

▪ 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
- 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

▪ 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
- 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.B: identify the components and properties of soils.
    - 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
        - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
        - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
        - 127.30.d.15.E: identify and compare energy and water conservation methods.
- <u>Energy and Natural Resource Technology</u>
    - 127.32.d.7: The student explains the effects of natural resource use. The student is expected to:
        - 127.32.d.7.B: explain the impact of human population dynamics on the environment.
- <u>Advanced Plant and Soil Science</u>
    - 127.58.d.8: The student understands interrelationships between plants, soil, and people in historical and current contexts. The student is expected to:

        - 127.58.d.8.B: explain how humans have influenced plant selection and how plant selection has influenced civilization's development.
    - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
        - 127.58.d.12.A: explain soil formation.
        - 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.
        - 127.58.d.12.C: identify and classify soil orders.
        - 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.

**ENERGY AND THE COMMODITY TRACE-BACK**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:

- 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
  - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
        - 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
            - 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.
- <u>English IV</u>
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:

- 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
  - 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies

        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
            - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - Economics with Emphasis on the Free Enterprise System and Its Benefits
        - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
            - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
        - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics – No Math TEKS

Science

- Environmental System:
    - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

▪ 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

- 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

▪ 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:

- 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
- 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.

○ Earth Systems Science:

▪ 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

▪ 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
- 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

▪ 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
- 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
- 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

○ Chemistry:

▪ 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
- 112.43.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.

- 112.43.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.43.c.1.F: organize quantitative and qualitative data using oral or written lab reports, labeled drawings, particle diagrams, charts, tables, graphs, journals, summaries, or technology-based reports.

▪ 112.43.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
- 112.43.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

▪ 112.43.c.7: Science concepts. The student knows how atoms form ionic, covalent, and metallic bonds. The student is expected to:
- 112.43.c.7.B: name and write the chemical formulas for ionic and covalent compounds using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.

Career Development

○ Career Preparation General

▪ 127.20.d.8: The student identifies skills and attributes necessary for professional success. The student is expected to:
- 127.2.d.8.A: evaluate and compare career options, including salaries and benefits.
- 127.20.d.8.E: describe entrepreneurial opportunities in an occupational area of interest.

Agriculture, Food, and Natural Resources

○ Principles of Agriculture, Food, and Natural Resources

▪ 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
- 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

        - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
            - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
            - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
            - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
        - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
            - 127.30.d.13.A: identify food products and processing systems.
            - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
            - 127.30.d.13.D: discuss current issues in food production.
        - 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
            - 127.30.d.15.D: identify and compare alternative energy sources that stem from or impact environmental and natural resources.
    - Advanced Energy and Natural Resource
        - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
            - 127.33.d.3.A: identify various types of natural resources.
            - 127.33.d.3.B: identify renewable, non-renewable, and sustainable energy resources and determine their availability.
    - Food Technology and Safety
        - 127.30.d.8: The student describes the processing, packaging, quality analysis, and marketing of eggs, poultry, and fish and their by-products. The student is expected to:
            - 127.34.d.8.A: describe processing techniques.

- Advanced Animal Science
  - 127.52.d.15: The student discusses livestock market readiness and harvesting methods. The student is expected to:
    - 127.52.d.15.A: explain the stages of animal growth and development and how they relate to market readiness.
    - 127.52.d.15.B: evaluate market class and grades of livestock.
    - 127.52.d.15.C: compare harvesting methods for various species using the scientific and engineering design process.
- Advanced Plant and Soil Science
  - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
    - 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.
- Agriculture Power Systems
  - 127.44.d.2: The student connects power generation to differing energy sources. The student is expected to:
    - 127.44.d.2.A: examine benefits and detriments of petroleum and alternative energy sources.
    - 127.44.d.2.B: compare environmental impacts of varying energy sources.
    - 127.44.d.2.C: compare efficiency and characteristics of different energy sources.

**ENZYMES AND BACTERIA ARE WHEY COOL!**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships,

comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory,

and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
  - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
  - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
  - 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.42.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
  - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
  - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
- 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
  - 112.42.c.11.B: investigate and explain the role of enzymes in facilitating cellular processes.
- 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
  - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
  - 112.42.c.13.B: analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence
- 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
  - 112.49.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
  - 112.49.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
  - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Food Technology and Safety
  - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
    - 127.34.d.10.A: describe methods of preparing milk for processing.
    - 127.34.d.10.B: evaluate methods of processing milk and dairy products.
    - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.
    - 127.34.d.10.D: process, classify, and grade cheese.
- Food Processing
  - 127.35.d.3: The student understands consumer satisfaction issues. The student is expected to:
    - 127.35.d.3.A: practice equipment maintenance and sanitation procedures.
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**EVALUATING PERSPECTIVES ABOUT GMOS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

No Math TEKS
Science

- Biology:

- 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:

- 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
- 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
- 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
- 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.

▪ 112.42.c.8: Mechanisms of Genetics: The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:
- 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over during meiosis in increasing diversity in populations of organisms that reproduce sexually.

▪ 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
- 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
- 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
- 112.42.c.10.C: analyze and evaluate how natural selection may lead to speciation.
- 112.42.c.10.D: analyze evolutionary mechanisms other than natural selection, including genetic drift, gene flow, mutation, and genetic recombination, and their effect on the gene pool of a population.

- 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
  - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
  - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

No Social Studies TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.

    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.7: The student identifies opportunities for involvement in professional agricultural organizations. The student is expected to:
    - 127.30.d.7.A: discuss the role of agricultural organizations in formulating public policy.
    - 127.30.d.7.C: identify and discuss the purpose of various professional agricultural organizations.
- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.8.C: explain the impact of marketing and advertising on the agricultural industry.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.

- 127.30.d.13.C: compare various food labels.
- 127.30.d.13.D: discuss current issues in food production.

- Food Technology and Safety
  - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
    - 127.34.d.2.A: explain the significance of food science systems.
    - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
    - 127.34.d.2.C: research trends in animal and food science research.
    - 127.34.d.2.D: evaluate the relationship between biotechnology and the food science industry.
  - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
    - 127.34.d.3.A: define the terms used in food technology.
  - 127.34.d.4: The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:
    - 127.34.d.4.D: assess conditions with regard to safety and health.
- Food Processing
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.D: research food safety laws.

- Advanced Plant and Soil Science
  - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
    - 127.58.d.15.A: analyze the genetics and evolution of various crops.
    - 127.58.d.15.F: analyze trends in crop species and varieties grown locally in Texas and the United States and how trends affect producers and consumers.
    - 127.58.d.15.G: investigate and identify recent advancements in plant and soil science such as biotechnology, artificial intelligence, and drone, infrared, and sensor technologies.

TEXAS FARM BUREAU®

**FARMLAND**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

No Math TEKS

Science

- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
    - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
  - 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
    - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
  - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.

TEXAS FARM BUREAU®

No Social Studies TEKS
Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and

animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.

- Livestock and Poultry Production
  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.49.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of livestock and poultry production.
    - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
    - 127.49.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
    - 127.49.d.1.D: identify employers' legal responsibilities and expectations, including appropriate work habits and ethical conduct.
    - 127.49.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.

        - 127.49.d.6: The student determines nutritional requirements of livestock and poultry. The student is expected to:
            - 127.49.d.6.G: research and explain livestock and poultry grazing practices such as rotational grazing and deferred grazing.
        - 127.49.d.10: The student examines the interrelationship of the factors impacting livestock and poultry production operations. The student is expected to:
            - 127.49.d.10.A: research and explain livestock and poultry biosecurity and waste management practices.
            - 127.49.d.10.C: analyze and discuss environmental regulations, governmental regulations, and animal welfare policies related to livestock and poultry production.
            - 127.49.d.10.D: analyze the United States Department of Agriculture (USDA) standards and guidelines for organic livestock and poultry production.
    - Advanced Plant and Soil Science
        - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
            - 127.58.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of plant science and develop a plan for obtaining the education, training, and certifications required.
            - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
            - 127.58.d.1.C: model appropriate personal and occupational safety practices and explain the importance of established safety and health protocols for the workplace.
        - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
            - 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.

**FAST-FOOD FOOTWORK**

TEXAS FARM BUREAU®

English Language Arts and reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.

Social Studies

- United States History Studies Since 1877
    - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
    - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- 113.42.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

No Math TEKS
Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory,

and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.

        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
        - 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
        - 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
        - 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle.
        - 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.D: discuss current issues in food production.
        - 127.30.d.13.E identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
- Food Technology and Safety
    - 127.34.d.4: The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:
        - 127.34.d.4.D: assess conditions with regard to safety and health.
- Food Processing

- 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
  - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**FEDERAL LANDS: RANCHING & RECREATING ON COMMON GROUNDS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.36.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

        - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
            - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
            - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - <u>English II</u>
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
            - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
            - 110.37.c.4.F: make inferences and use evidence to support understanding.
            - 110.37.c.4.G: evaluate details read to determine key ideas.

        - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.

- 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
- 110.38.c.4.F: make inferences and use evidence to support understanding.
- 110.38.c.4.G: evaluate details read to understand key ideas.
- 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

▪ 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

o <u>English IV</u>

▪ 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies – No Social Studies TEKS
No Math TEKS
Science

- Environmental Systems
  - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.C: research and explore resources such as museums, planetariums, observatories, libraries, professional organizations, private companies, online

platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
  - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
- 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
  - 112.50.c.8.B: identify factors that may alter carrying capacity such as disease; natural disaster; available food, water, and livable space; habitat fragmentation; and periodic changes in weather.
  - 112.50.c.8.C: calculate changes in population size in ecosystems.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.

- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

▪ 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.11.B: identify the components and properties of soils.

▪ 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
  - 127.30.d.15.C: identify and describe regulations and governmental programs related to environmental and

natural resources, including water regulations, pesticide usage, and hunting and fishing laws.

- Energy and Natural Resource Technology
    - 127.32.d.4: The student identifies water use and management in agricultural settings. The student is expected to:
        - 127.32.d.4.C: discuss how agricultural uses may impact water resources.
        - 127.32.d.4.F: evaluate how the different agricultural water uses may impact water availability.
    - 127.32.d.6: The student examines soil erosion as related to agricultural production. The student is expected to:
        - 127.32.d.6.A: identify agricultural production practices that can contribute to soil erosion.
        - 127.32.d.6.B: analyze effects of soil erosion.
        - 127.32.d.6.D: identify soil erosion control methods and programs.
- Advanced Energy and Natural Resource Technology
    - 127.33.d.9: The student examines soil erosion as related to natural resource management and energy production. The student is expected to:
        - 127.33.d.9.B: analyze the components and functions of soils.
        - 127.33.d.9.D: compare soil erosion control methods.
- Wildlife, Fisheries, and Ecology Management
    - 127.36.d.5: The student examines natural cycles and ecological concepts. The student is expected to:
        - 127.36.d.5.A: explain the hydrologic, nitrogen, carbon, and nutrient cycles.
        - 127.36.d.5.B: evaluate the impact of natural cycles on succession.
        - 127.36.d.5.C: analyze the effects of natural cycles on population dynamics.
- Range Ecology and Management
    - 127.38.d.4: The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:
        - 127.38.d.4.A: discuss components of rangeland with an emphasis on soil.

- 127.38.d.7: The student identifies methods of maintaining and improving rangeland for wildlife management. The student is expected to:
  - 127.38.d.7.B: identify plants species harmful to wildlife.
  - 127.38.d.7.C: analyze how wildlife species use range plants.

**FERMENTATION OF HONEY**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III

        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
            - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
            - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

Social Studies – No Social Studies TEKS

Mathematics

- Mathematical Models with Applications
    - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical

models to analyze data as it applies to social sciences. The student is expected to:

- 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.

Science

- Biology
  - 112.42.c.1: Scientific processes. The student uses scientific practices and equipment during laboratory and field investigations. The student is expected to:
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence based arguments or evaluate designs. The student is expected to:

        - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.42.c.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

Agriculture, Food, and Natural Resources

- Beekeeping and Honey Processing
    - 127.61.d.4: The student evaluates technology and best practices for weatherizing a beehive. The student is expected to:
        - 127.61.d.4.B: compare seasonal strategies for proper beehive management and describe why best management practices change based on the seasons, including spring, summer, autumn, and winter.

**FERTILIZERS AND THE ENVIRONMENT**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
- 110.36.c.4.E: make connections to personal experiences, ideas in other texts, and society.
- 110.36.c.4.F: make inferences and use evidence to support understanding.
- 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

▪ 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

o <u>English II</u>

▪ 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.37.c.4.F: make inferences and use evidence to support understanding.
  - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
        - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.38.c.4.F: make inferences and use evidence to support understanding.
        - 110.38.c.4.G: evaluate details read to understand key ideas.
        - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- <u>English IV</u>
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts;
  - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.

- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies – No Social Studies TEKS

Mathematics

- Mathematical Models with Applications
  - 111.43.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.43.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
    - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
- Advanced Quantitative Reasoning
  - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
  - 111.44.c.2: Numeric reasoning. The student applies the process standards in mathematics to generate new understandings by extending existing knowledge. The student generates new mathematical understandings through problems involving numerical data that arise in everyday life, society, and the workplace. The student extends existing knowledge and skills to analyze real-world situations. The student is expected to:
    - 111.44.c.2.A: use precision and accuracy in real-life situations related to measurement and significant figures.

Science

- Environmental Systems
  - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.50.c.4.C: research and explore resources such as museums, planetariums, observatories, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
  - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
- Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
  - 112.50.c.8.B: identify factors that may alter carrying capacity such as disease; natural disaster; available food, water, and livable space; habitat fragmentation; and periodic changes in weather.
  - 112.50.c.8.C: calculate changes in population size in ecosystems.
- 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:
  - 112.50.c.10.A: identify sources of emissions in air, soil, and water, including point and nonpoint sources.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
  - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
  - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.

TEXAS FARM BUREAU®

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
        - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.F describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:

        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.B: identify the components and properties of soils.
    - 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
        - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
        - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
        - 127.30.d.15.C: identify and describe regulations and governmental programs related to environmental and natural resources, including water regulations, pesticide usage, and hunting and fishing laws.
- Energy and Natural Resource Technology
    - 127.32.d.4: The student identifies water use and management in agricultural settings. The student is expected to:
        - 127.32.d.4.C: discuss how agricultural uses may impact water resources.
        - 127.32.d.4.F: evaluate how the different agricultural water uses may impact water availability.
    - 127.32.d.6: The student examines soil erosion as related to agricultural production. The student is expected to:
        - 127.32.d.6.A: identify agricultural production practices that can contribute to soil erosion.
        - 127.32.d.6.B: analyze effects of soil erosion.
        - 127.32.d.6.D: identify soil erosion control methods and programs.
- Advanced Energy and Natural Resource Technology
    - 127.33.d.9: The student examines soil erosion as related to natural resource management and energy production. The student is expected to:
        - 127.33.d.9.B: analyze the components and functions of soils.
        - 127.33.d.9.D: compare soil erosion control methods.
- Wildlife, Fisheries, and Ecology Management

        - 127.36.d.5: The student examines natural cycles and ecological concepts. The student is expected to:
            - 127.36.d.5.A: explain the hydrologic, nitrogen, carbon, and nutrient cycles.
            - 127.36.d.5.B: evaluate the impact of natural cycles on succession.
            - 127.36.d.5.C: analyze the effects of natural cycles on population dynamics.
    - Range Ecology and Management
        - 127.38.d.4: The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:
            - 127.38.d.4.A: discuss components of rangeland with an emphasis on soil.
        - 127.38.d.7: The student identifies methods of maintaining and improving rangeland for wildlife management. The student is expected to:
            - 127.38.d.7.B: identify plants species harmful to wildlife.
            - 127.38.d.7.C: analyze how wildlife species use range plants.
    - Advanced Plant and Soil Science
        - 127.58.d.14: The student explains the relationship of biotic and abiotic factors within habitats and ecosystems and their effects on plant ecology. The student is expected to:
            - 127.58.d.14.F describe potential positive and negative impacts of human activity such as pest control, hydroponics, monoculture planting, and sustainable agriculture on ecosystems.
        - 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
            - 127.58.d.16.A: summarize and evaluate methods of land use and management.
            - 127.58.d.16.B: identify sources, quality, and conservation of water in plant production.

**FIGHTING FOOD WASTE: STRATEGIES AND SOLUTIONS FOR HOME AND SCHOOL**

English Language Arts and Reading

- English I

- 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.36.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.

        - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
        - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.37.c.4.F: make inferences and use evidence to support understanding.
        - 110.37.c.4.G: evaluate details read to determine key ideas.
        - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.38.c.4.F: make inferences and use evidence to support understanding.
    - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background

knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.

- 110.39.c.4.F: make inferences and use evidence to support understanding.
- 110.39.c.4.G: evaluate details read to analyze key ideas.
- 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

▪ 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

No Social Studies TEKS
Mathematics – No Math TEKS
Science

- Environmental Systems
  - 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.D: discuss current issues in food production.

**FILLING THE GLOBAL GROCERY BAG**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.A: develop questions for formal and informal inquiry.
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.

- 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.A: develop questions for formal and informal inquiry.
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence,

well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.38.c.11.A: develop questions for formal and informal inquiry.
        - 110.38.c.11.E: locate relevant sources.
        - 110.38.c.11.F: synthesize information from a variety of sources.
        - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.39.c.11.A: develop questions for formal and informal inquiry.
- 110.39.c.11.E: locate relevant sources.
- 110.39.c.11.F: synthesize information from a variety of sources.
- 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.c.6: Economics. The student understands the right to own, use, and dispose of private property. The student is expected to:
    - 113.31.c.6.B: identify and evaluate examples of restrictions that the government places on the use of business and individual property.
- World Geography Studies
  - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.c.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.
    - 113.43.c.11.C: assess how changes in climate, resources, and infrastructure (technology, transportation, and communication) affect the location and patterns of economic activities.
  - 113.43.c.16: Culture. The student understands how the components of culture affect the way people live and shape the characteristics of regions. The student is expected to:
    - 113.43.c.16.B: describe elements of culture, including language, religion, beliefs, institutions, and technologies.
  - 113.43.c.18: Culture. The student understands the ways in which cultures change and maintain continuity. The student is expected to:
    - 113.43.c.18.D: evaluate the spread of cultural traits to find examples of cultural convergence and divergence such as the spread of democratic ideas, language, foods, technology, or global sports.

Mathematics – No Math TEKS

Science

- Environmental Systems

        - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
            - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
        - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
        - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

**FOOD SCIENCE: BREAD DOUGH CHALLENGE**

English Language Arts and Reading

- English I

        - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
            - 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
                - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
            - 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
                - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
    - English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
    - 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:

- 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.

Math – No Math TEKS

Science

- Biology:

- 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence .
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
- 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
  - 112.42.c.5.C: investigate homeostasis through the cellular transport of molecules.
- 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
  - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.

- <u>Earth Systems Science:</u>
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.

    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.49.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
    - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
    - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme

weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Food Technology and Safety
  - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
    - 127.34.d.2.A: explain the significance of food science systems.
    - 127.34.d.2.D: evaluate the relationship between biotechnology and the food science industry.
  - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
    - 127.34.d.3.A: define the terms used in food technology.
- Food Processing
  - 127.35.d.3: The student understands consumer satisfaction issues. The student is expected to:
    - 127.35.d.3.A: practice equipment maintenance and sanitation procedures.
    - 127.35.d.3.B: explain the factors that affect food palatability.
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**FROM BOOM TO DUST**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.36.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
  - 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
    - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
    - 110.36.c.9.B.ii: developing an engaging idea reflecting depth of thought with specific details, examples, and commentary.
- 110.36.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
  - 110.36.c.10.C: compose argumentative texts using genre characteristics and craft.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - using acquired content and academic vocabulary as appropriate.
  - 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student

uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:

- 110.37.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
  - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
  - 110.37.c.9.B.ii: developing an engaging idea reflecting depth of thought with specific details, examples, and commentary.

- 110.37.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
  - 110.37.c.10.C: compose argumentative texts using genre characteristics and craft.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts

that are legible and use appropriate conventions. The student is expected to:

- 110.38.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
  - 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.
  - 110.38.c.9.B.ii: developing an engaging idea reflecting depth of thought with effective use of rhetorical devices, details, examples, and commentary.

- 110.38.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
  - 110.38.c.10.C: compose argumentative texts using genre characteristics and craft.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:

- 110.39.c.9.A: plan a piece of writing appropriate for various purposes and audiences by generating ideas through a range of strategies such as brainstorming, journaling, reading, or discussing.
- 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
  - 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context; and
  - 110.39.c.9.B.ii: developing an engaging idea reflecting depth of thought with effective use of rhetorical devices, details, examples, and commentary;

- 110.39.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
  - 110.39.c.10.C: compose argumentative texts using genre characteristics and craft.

Social Studies – No Social Studies TEKS
Mathematics – No Math TEKS
Science

- Earth Systems Science
  - 112.49.c.9: Science concepts. The student knows that the lithosphere continuously changes as a result of dynamic and complex interactions among Earth's systems. The student is expected to:
    - 112.49.c.9.C: model the processes of mass wasting, erosion, and deposition by water, wind, ice, glaciation, gravity, and volcanism in constantly reshaping Earth's surface.
- United States History Studies Since 1877
  - 113.41.c.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
    - 113.41.c.2.B: explain the significance of the following years as turning points: 1898 (Spanish-American War), 1914-1918 (World War I), 1929 (the Great Depression begins), 1939-1945 (World War II), 1957 (Sputnik launch ignites U.S.-Soviet space race), 1968 (Martin Luther King Jr. assassination), 1969 (U.S. lands on the moon), 1991

(Cold War ends), 2001 (terrorist attacks on World Trade Center and the Pentagon), and 2008 (election of first black president, Barack Obama).

- 113.41.c.12: Geography. The student understands the impact of geographic factors on major events. The student is expected to analyze the impact of physical and human geographic factors on the Klondike Gold Rush, the Panama Canal, the Dust Bowl, and the levee failure in New Orleans after Hurricane Katrina.

Agriculture Food and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.B: identify the components and properties of soils.
- Advanced Plant and Soil Science
  - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
    - 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.

**FROM TECHNIQUES TO TRAITS**

TEXAS FARM BUREAU®

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward

goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Math – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
  - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
- 112.42.c.8: Mechanisms of Genetics: The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:
    - 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over during meiosis in increasing diversity in populations of organisms that reproduce sexually.
    - 112.42.c.8.B: predict possible outcomes of various genetic combinations using monohybrid and dihybrid crosses, including non-Mendelian traits of incomplete dominance, codominance, sex-linked traits, and multiple alleles.
- 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
    - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
    - 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
    - 112.42.c.10.C: analyze and evaluate how natural selection may lead to speciation.
    - 112.42.c.10.D: analyze evolutionary mechanisms other than natural selection, including genetic drift, gene flow, mutation, and genetic recombination, and their effect on the gene pool of a population.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational

structure and variations can influence survival of populations. The student is expected to:

- 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

Agriculture, Food, and Natural Resources

- Advanced Plant and Soil Science
  - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
    - 127.58.d.19.B: apply principles of genetics and plant breeding to plant production.

**FRUITS AND VEGETABLES: THE RIGHT PICK FOR VITAMINS AND MINERALS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.38.c.4.F: make inferences and use evidence to support understanding.

▪ 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

○ <u>English IV</u>

▪ 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS

Science

- Biology
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
        - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
    - 112.42.c.5: Science concepts--biological structures, functions, and processes. The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
        - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.

Social Studies

- World Geography Studies
  - 113.43.d.10: Economics. The student understands the distribution, characteristics, and interactions of the economic systems in the world. The student is expected to:
    - 113.43.d.10.C. compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus commercial agriculture or cottage industries versus commercial industries; and

Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.
    - 115.38.c.6.C: describe how a personal dietary plan affects overall health and how a plan might differ over the lifespan.
  - 115.38.c.8: Healthy eating and physical activity--risk and protective factors. The student analyzes and applies risk and protective factors related to healthy eating and physical activity. The student is expected to:
    - 115.38.c.8.A: evaluate the nutritional differences between preparing and serving fresh or minimally processed food versus serving commercially prepared or highly processed foods; and

- Health II
  - 115.39.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to design a realistic, long-term personal dietary plan that promotes individual and family health.

- 115.39.c.9: Healthy eating and physical activity--risk and protective factors. The student analyzes and applies risk and protective factors related to healthy eating and physical activity. The student is expected to:
  - 115.39.c.9.A: research and discuss the social and economic impact of chronic conditions, including obesity, heart disease, and diabetes; and

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.C: compare various food labels.
    - 127.30.d.13.D: discuss current issues in food production.
    - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

**GEOGRAPHY AND CLIMATE FOR AGRICULTURAL LANDSCAPES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact,

speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
- 110.37.c.4.G: evaluate details read to determine key ideas.

▪ 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

▪ 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
- 110.37.c.11.E: locate relevant sources.
- 110.37.c.11.F: synthesize information from a variety of sources.

- 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

- 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.C: formulate sound arguments and present using elements of classical speeches such as introduction, first and second transitions, body, conclusion, the art of persuasion, rhetorical devices, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
    - 113.42.c.29: Social studies skills. The student uses geographic skills and tools to collect, analyze, and interpret data. The student is expected to:
        - 113.42.c.29.A: create and interpret thematic maps, graphs, and charts to demonstrate the relationship between geography and the historical development of a region or nation.
        - 113.42.c.29.B: analyze and compare geographic distributions and patterns in world history shown on maps, graphs, charts, and models.
- World Geography Studies
    - 113.43.c.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
        - 113.43.c.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.

TEXAS FARM BUREAU®

Mathematics – No Math TEKS
Science – No Science TEKS
Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.B identify the components and properties of soils.
- Advanced Plant and Soil Science
  - 127.58.d.8: The student understands interrelationships between plants, soil, and people in historical and current contexts. The student is expected to:
    - 127.58.d.8.B: explain how humans have influenced plant selection and how plant selection has influenced civilization's development.

        - 127.58.d.8.C: analyze the effect of soil properties on settlement of civilizations and migration.
    - 127.58.d.18: The student analyzes plant and soil science as it relates to plant and soil relationships affecting the production of food, fiber, and other economic crops. The student is expected to:
        - 127.58.d.18.A: explain the importance and interrelationship of soil and plants.
        - 127.58.d.18.B: compare soil and plants in agricultural and urban settings.
    - 130.25.c.16: The student describes the relationship between resources within environmental systems. The student is expected to:
        - 130.25.c.16.A: summarize and evaluate methods of land use and management.
        - 130.25.c.16.D: analyze and evaluate the economic significance and interdependence of components of the environment.

**GLOBAL FOOD SECURITY**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages

in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.36.c.11.A: develop questions for formal and informal inquiry.
- 110.36.c.11.E: locate relevant sources.
- 110.36.c.11.F: synthesize information from a variety of sources.
- 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.A: develop questions for formal and informal inquiry.
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating

a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.A: develop questions for formal and informal inquiry.
  - 110.39.c.11.E: locate relevant sources.
  - 110.39.c.11.F: synthesize information from a variety of sources.
  - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
  - 113.42.d.29: Social studies skills. The student uses geographic skills and tools to collect, analyze, and interpret data. The student is expected to:
    - 113.42.d.29.A: create and interpret thematic maps, graphs, and charts to demonstrate the relationship between geography and the historical development of a region or nation.
    - 113.42.d.29.B: analyze and compare geographic distributions and patterns in world history shown on maps, graphs, charts, and models.
- World Geography Studies
  - 113.43.d.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.d.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.
  - 113.43.d.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.d.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.

Mathematics – No Math TEKS

Science
- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.

Agriculture, Food, and Natural Resources
- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

**GLOBAL TRADE AND INTERDEPENDENCE**

TEXAS FARM BUREAU®

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.H: synthesize information from two texts to create new understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.A: develop questions for formal and informal inquiry.
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.G: examine sources for:
      - 110.36.c.11.G.i: credibility and bias, including omission.
- English II

        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
            - 110.37.c.4.H: synthesize information from multiple texts to create new understanding.
        - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
            - 110.37.c.11.A: develop questions for formal and informal inquiry.
            - 110.37.c.11.E: locate relevant sources.
            - 110.37.c.11.F: synthesize information from a variety of sources.
            - 110.37.c.11.G: examine sources for:
                - 110.37.c.11.G.i: credibility and bias, including omission.
    - <u>English III</u>
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.G: examine sources for:
    - 110.38.c.11.G.i: credibility, bias, and accuracy.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
        - 110.39.c.4.H: synthesize information from a variety of text types to create new understanding.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.A: develop questions for formal and informal inquiry.
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.
        - 110.39.c.11.G: examine sources for:
            - 110.39.c.11.G.i: credibility, bias, and accuracy.

Social Studies

- World History Studies
    - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.d.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Math – No Math TEKS

Science

- Biology:
  - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational

structure and variations can influence survival of populations. The student is expected to:

- 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

- Earth Systems Science:
  - 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.49.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.49.c.6: Science concepts. The student knows the evidence for the formation and composition of Earth's atmosphere, hydrosphere, biosphere, and geosphere. The student is expected to:
    - 112.49.c.6.A: describe how impact accretion, gravitational compression, radioactive decay, and cooling differentiated proto-Earth into layers.
    - 112.49.c.6.B: evaluate the roles of volcanic outgassing and water bearing comets in developing Earth's atmosphere and hydrosphere.
    - 112.49.c.6.C: evaluate the evidence for changes to the chemical composition of Earth's atmosphere prior to the introduction of oxygen.
    - 112.49.c.6.D: evaluate scientific hypotheses for the origin of life through abiotic chemical processes.
    - 112.49.c.6.E: describe how the production of oxygen by photosynthesis affected the development of the atmosphere, hydrosphere, geosphere, and biosphere.
  - 112.49.c.8: Science concepts. The student knows how the Earth's interior dynamics and energy flow drive geological processes on Earth's surface. The student is expected to:

- 112.49.c.8.D: describe how heat and rock composition affect density within Earth's interior and how density influences the development and motion of Earth's tectonic plates.

- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.
- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.
  - 112.49.c.13.B: explore global and Texas-based careers that involve the exploration, extraction, production, use, disposal, regulation, and protection of Earth's resources.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
    - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.

        - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
            - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
            - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - Food Technology and Safety
        - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
            - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
    - Food Processing
        - 127.35.d.2: The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:
            - 127.35.d.2.A: explain the importance of the food processing industry in the free enterprise system.
            - 127.35.d.2.B: explain trends in the consumption of food products.
    - Agribusiness Management and Marketing
        - 127.46.d.4: The student recognizes and explains roles within organizations, inter-organizational systems, and the larger environment. The student is expected to:
            - 127.46.d.4.B: research and describe the domestic and global context of agricultural industries and careers.

**GPS AND GIS TECHNOLOGY IN AGRICULTURE**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.22: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.31.d.22.A: use social studies terminology correctly.
- United States History Since 1877
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
    - 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.
  - 113.41.d.29: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.41.d.29.B: use social studies terminology correctly.
- World History Studies
  - 113.42.d.27: Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies from 1750 to the present. The student is expected to:
    - 113.42.d.27.D: explain the role of telecommunication technology, computer technology, transportation technology, and medical advancements in developing the modern global economy and society.
  - 113.42.d.30: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.42.d.30.A: use social studies terminology correctly.
- World Geography Studies
  - 113.43.d.20: Science, technology, and society. The student understands how current technology affects human interaction. The student is expected to:
    - 113.43.d.20.A: describe the impact of new information technologies such as the Internet, Global Positioning System (GPS), or Geographic Information Systems (GIS).

- 113.43.d.22: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.43.d.22.C: use social studies terminology correctly.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- Earth Systems Science:
  - 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
    - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
    - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.
- Aquatic Science:
  - 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.47.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.47.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.47.c.6.C: evaluate environmental data using technology such as maps, visualizations, satellite data, Global Positioning System (GPS), Geographic Information

System (GIS), weather balloons, and buoys to model the interactions that affect aquatic ecosystems.

- Environmental Systems:
  - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
    - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
    - 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:

- 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

○ <u>Geographic Information systems for Agriculture</u>

▪ 127.59.d.2: The student explains the current applications of geographic information system (GIS) in agriculture, food, and natural resources and identifies the future need for GIS in precision agriculture. The student is expected to:

- 127.59.d.2.A: research and compare current and emerging careers related to GIS in agriculture and natural resource fields.
- 127.59.d.2.B: identify and analyze applications of GIS technologies in agriculture, food, and natural resources.
- 127.59.d.2.C: explain GIS data as it pertains to agriculture.
- 127.59.d.2.D: describe the types of licensing, certification, and credentialing requirements related to GIS occupations.

- 127.49.d.3: The student analyzes geographic information and spatial data types in agriculture, food and natural resources. The student is expected to:
  - 127.49.d.3.A: identify the uses of GIS in agriculture.
  - 127.49.d.3.B: identify the GIS terminology used in agriculture applications, such as spatial analysis, remote sensing, georeferencing, geostatistics, and geocoding.

**GROWING A NATION ERA 1A: SEEDS OF CHANGE**

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.37.c.4.F: make inferences and use evidence to support understanding.

▪ 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

○ English III

▪ 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
No Social Studies TEKS

- United States History Since 1877
  - 113.41.d.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
    - 113.41.d.2.A: identify the major eras in U.S. history from 1877 to the present and describe their defining characteristics.
    - 113.41.d.2.B: explain the significance of the following years as turning points: 1898 (Spanish-American War), 1914-1918 (World War I), 1929 (the Great Depression begins), 1939-1945 (World War II), 1957 (Sputnik launch ignites U.S.-Soviet space race), 1968 (Martin Luther King Jr. assassination), 1969 (U.S. lands on the moon), 1991 (Cold War ends), 2001 (terrorist attacks on World Trade Center and the Pentagon), and 2008 (election of first black president, Barack Obama).
  - 113.41.d.3: History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to:
    - 113.41.d.3.B: analyze economic issues such as industrialization, the growth of railroads, the growth of labor unions, farm issues, the cattle industry boom, the growth of entrepreneurship, and the pros and cons of big business.
    - 113.41.d.3.C: analyze social issues affecting women, minorities, children, immigrants, and urbanization.
  - 113.41.d.15: Economics. The student understands domestic and foreign issues related to U.S. economic growth from the 1870s to 1920. The student is expected to:
    - 113.41.d.15.a: describe how the economic impact of the Transcontinental Railroad and the Homestead Act contributed to the close of the frontier in the late 19th century.
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:

- 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
- 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
- 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

**GROWING A NATION ERA 1B: COTTON'S AMERICAN JOURNEY**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- <u>English IV</u>
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
- World History Studies
  - 113.42.d.27: Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies from 1750 to the present. The student is expected to:
    - 113.42.d.27.A: explain the role of textile manufacturing, steam technology, development of the factory system, and transportation technology in the Industrial Revolution.
- World Geography Studies
  - 113.43.d.8: Geography. The student understands how people, places, and environments are connected and interdependent. The student is expected to:
    - 113.43.d.8.A: compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.
  - 113.43.d.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
    - 13.43.d.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.
- Ethnic Studies: African American Studies
  - 113.51.c.1: History. The student understands the influential historical points of reference in African history prior to 1619. The student is expected to:
    - 113.51.c.1.A: identify the major eras, civilizations, and contributions of African history that are foundational to humanity and predate American slavery.

- 113.51.c.7: Geography. The student understands the impact of geographic factors on major events related to African Americans over time. The student is expected to:
  - 113.51.c.7.B: identify and explain the physical and human geographic factors that contributed to the Atlantic Slave Trade, the rise of the plantation system in the South, the development of textile mills in the North, and economic interdependence between the North and South.
- 113.51.c.8: Economics. The student understands ways in which African Americans have addressed opportunities, challenges, and strategies concerning economic well-being over time. The student is expected to:
  - 113.51.c.8.A: analyze the effects of the Industrial Revolution and the roles of "King Cotton" and the cotton gin in the economies of the United States and the world.

Math – No Math TEKS

Science

- Environmental System:
  - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.E: argue from evidence whether or not a healthy economy and a healthy environment are mutually exclusive.
  - 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
    - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions

regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
        - 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.
- Earth Systems Science:
    - 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.49.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
        - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
    - 112.49.c.6: Science concepts. The student knows the evidence for the formation and composition of Earth's atmosphere, hydrosphere, biosphere, and geosphere. The student is expected to:
        - 112.49.c.6.A: describe how impact accretion, gravitational compression, radioactive decay, and cooling differentiated proto-Earth into layers.
        - 112.49.c.6.B: evaluate the roles of volcanic outgassing and water bearing comets in developing Earth's atmosphere and hydrosphere.
        - 112.49.c.6.C: evaluate the evidence for changes to the chemical composition of Earth's atmosphere prior to the introduction of oxygen.
        - 112.49.c.6.D: evaluate scientific hypotheses for the origin of life through abiotic chemical processes.
        - 112.49.c.6.E: describe how the production of oxygen by photosynthesis affected the development of the atmosphere, hydrosphere, geosphere, and biosphere.

- 112.49.c.8: Science concepts. The student knows how the Earth's interior dynamics and energy flow drive geological processes on Earth's surface. The student is expected to:
  - 112.49.c.8.D: describe how heat and rock composition affect density within Earth's interior and how density influences the development and motion of Earth's tectonic plates.
- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.C: model how greenhouse gases trap thermal energy near Earth's surface.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.11.C: describe the basic structure and functions of plant parts.

**GROWING A NATION ERA 2: FROM DEFEAT TO VICTORY**

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.38.c.4.F: make inferences and use evidence to support understanding.

▪ 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

○ <u>English IV</u>

▪ 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
No Social Studies TEKS

- United States History Since 1877
    - 113.41.d.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
        - 113.41.d.2.A: identify the major eras in U.S. history from 1877 to the present and describe their defining characteristics.
        - 113.41.d.2.B: explain the significance of the following years as turning points: 1898 (Spanish-American War), 1914-1918 (World War I), 1929 (the Great Depression begins), 1939-1945 (World War II), 1957 (Sputnik launch ignites U.S.-Soviet space race), 1968 (Martin Luther King Jr. assassination), 1969 (U.S. lands on the moon), 1991 (Cold War ends), 2001 (terrorist attacks on World Trade Center and the Pentagon), and 2008 (election of first black president, Barack Obama).

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

**GROWING A NATION ERA 3: PROSPERITY AND CHALLENGES**

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.

        - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
            - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.F: make inferences and use evidence to support understanding.
        - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
No Social Studies TEKS

- United States History Since 1877
    - 113.41.d.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
        - 113.41.d.2.A: identify the major eras in U.S. history from 1877 to the present and describe their defining characteristics.
        - 113.41.d.2.B: explain the significance of the following years as turning points: 1898 (Spanish-American War), 1914-1918 (World War I), 1929 (the Great Depression begins), 1939-1945 (World War II), 1957 (Sputnik launch ignites U.S.-Soviet space race), 1968 (Martin Luther King Jr. assassination), 1969 (U.S. lands on the moon), 1991 (Cold War ends), 2001 (terrorist attacks on World Trade Center and the Pentagon), and 2008 (election of first black president, Barack Obama).
    - 113.41.d.3: History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to:
        - 113.41.d.3.B: analyze economic issues such as industrialization, the growth of railroads, the growth of labor unions, farm issues, the cattle industry boom, the growth of entrepreneurship, and the pros and cons of big business.
        - 113.41.d.3.C: analyze social issues affecting women, minorities, children, immigrants, and urbanization.

- 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
  - 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
  - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
  - 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.

<u>Agriculture, Food, and Natural Resources</u>

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 137.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 137.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States; and
    - 137.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

        - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.C: describe the basic structure and functions of plant parts.
        - 127.30.d.11.E: identify and use tools, equipment, and personal protective equipment common to plant and soil systems.

- Advanced Plant and Soil Science

    - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
        - 127.58.d.15.F: analyze trends in crop species and varieties grown locally in Texas and the United States and how trends affect producers and consumers.
    - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
        - 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.

**GROWING A NATION ERA 4: INTO A NEW MILLENNIUM**

- English I

- 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.F: make inferences and use evidence to support understanding.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.F: make inferences and use evidence to support understanding.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.F: make inferences and use evidence to support understanding.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
No Social Studies TEKS

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.11: Economics. The student understands the role of money in an economy. The student is expected to:
    - 113.31.d.11.A: describe the functions of money.

- 113.31.d.11.C: analyze the positive and negative aspects of barter, currency, and debit cards.

- United States History Since 1877
  - 113.41.d.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
    - 113.41.d.2.A: identify the major eras in U.S. history from 1877 to the present and describe their defining characteristics.
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
    - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
    - 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.
  - 113.41.d.27: Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies from 1750 to the present. The student is expected to:
    - 113.41.d.27.D: explain the role of telecommunication technology, computer technology, transportation technology, and medical advancements in developing the modern global economy and society.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.

**GROWING A NATION ERA 5A: GROWING TECHNOLOGY**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III

        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
            - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
            - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
            - 110.38.c.11.E: locate relevant sources.
            - 110.38.c.11.F: synthesize information from a variety of sources.
            - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
    - <u>English IV</u>
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.E: locate relevant sources.
  - 110.39.c.11.F: synthesize information from a variety of sources.
  - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.d.2: Economics. The student understands the interaction of supply, demand, and price. The student is expected to:
    - 113.31.d.2.A: understand the effect of changes in price on the quantity demanded and quantity supplied.
    - 113.31.d.2.B: identify the non-price determinants that create changes in supply and demand, which result in a new equilibrium price.
  - 113.31.d.10: Economics. The student understands key components of economic growth. The student is expected to:
    - 113.31.d.10.B: analyze how technology relates to growth.
- United States History Since 1877
  - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
- World Geography Studies
  - 113.43.d.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.d.11.C: assess how changes in climate, resources, and infrastructure (technology, transportation, and

communication) affect the location and patterns of economic activities.

- 113.43.d.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
  - 113.43.d.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.

Mathematics – No Math TEKS

Science

- Environmental Systems
  - 112.50.c.12: Science concepts. The student knows the impact of human activities on the environment. The student is expected to:
    - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.

- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

**GROWING A NATION ERA 5B: PLAYING BY THE RULES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for

effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.38.c.11.E: locate relevant sources.
        - 110.38.c.11.F: synthesize information from a variety of sources.
        - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.

- 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Mathematics – No Math TEKS
Science
Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.d.13: Economics. The student understands the role that the government plays in the U.S. free enterprise system. The student is expected to:
    - 113.31.d.13.A: describe the role of government in the U.S. free enterprise system and the changes in that role over time.
    - 113.31.d.13.B: analyze the costs and benefits of U.S. economic policies, rules, and regulations related to the economic goals of economic growth, stability, full employment, freedom, security, equity (equal opportunity versus equal outcome), and efficiency.
- United States History Since 1877
  - 113.41.d.16: Economics. The student understands significant economic developments between World War I and World War II. The student is expected to:
    - 113.41.d.16.A: analyze causes of economic growth and prosperity in the 1920s, including Warren Harding's Return to Normalcy, reduced taxes, and increased production efficiencies.
    - 113.41.d.16.B: identify the causes of the Great Depression, including the impact of tariffs on world trade, stock market speculation, bank failures, and the monetary policy of the Federal Reserve System.
    - 113.41.d.16.C: analyze the effects of the Great Depression on the U.S. economy and society such as widespread unemployment and deportation and repatriation of people of Mexican heritage.
    - 113.41.d.16.D: compare the New Deal policies and its opponents' approaches to resolving the economic effects of the Great Depression.
    - 113.41.d.16.E: describe how various New Deal agencies and programs, including the Federal Deposit Insurance

Corporation, the Securities and Exchange Commission, and the Social Security Administration, continue to affect the lives of U.S. citizens.

- United States Government
  - 113.44.d.2: History. The student understands the roles played by individuals, political parties, interest groups, and the media in the U.S. political system, past and present. The student is expected to:
    - 113.44.d.2.A: describe the processes used by individuals, political parties, interest groups, or the media to affect public policy.
  - 113.44.d.7: Government. The student understands the structure and functions of the government created by the U.S. Constitution. The student is expected to:
    - 113.44.d.7.A: analyze the structure and functions of the legislative branch of government, including the bicameral structure of Congress, the role of committees, and the procedure for enacting laws.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.

- 127.30.d.7: The student identifies opportunities for involvement in professional agricultural organizations. The student is expected to:
  - 127.30.d.7.A: discuss the role of agricultural organizations in formulating public policy.
  - 127.30.d.7.C: identify and discuss the purpose of various professional agricultural organizations.

- Agricultural Leadership, Research, and Communications
  - 127.47.d.5: The student describes organizational leadership structures at the local, state, and national levels. The student is expected to:
    - 127.47.d.5.C: explain the processes by which laws, regulations, and policies are developed at the local, state, and national levels.
    - 127.47.d.5.D: evaluate a recent law affecting agriculture, food, and natural resources and analyze the impact of that law on local agriculture.
  - 127.47.d.14: The student understands the importance of agricultural education. The student is expected to:
    - 127.47.d.14.B: identify and research individuals, governmental agencies, and advocacy groups that are responsible for agricultural information dissemination and education.

**HEALTHY EATING AWAY FROM HOME**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:

- 127.30.d.13.A: identify food products and processing systems.
- 127.30.d.13.D: discuss current issues in food production.

**HEN HOUSE ENGINEERING**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.C: use text evidence and original commentary to support a comprehensive response.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

        - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.37.c.5.C: use text evidence and original commentary to support an interpretive response.
            - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
            - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.38.c.5.C: use text evidence and original commentary to support an analytic response.
            - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.C: use text evidence and original commentary to support an evaluative response.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
    - 113.31.c.1.C: describe the economic factors of production: land, labor, capital, and entrepreneurship.
  - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics – No Math TEKS

Science

- Environmental Systems
  - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
    - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
    - 127.30.d.12.E: identify and use tools, equipment, and proper handling techniques related to animal systems.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
    - 127.30.d.13.D: discuss current issues in food production.
- Livestock and Poultry Production
  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

        - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
    - 127.49.d.4: The student analyzes the history, domestication, and selection of livestock and poultry. The student is expected to:
        - 127.49.d.4.A: research and describe the history, domestication, and evolution of livestock and poultry species.
    - 127.49.d.9: The student analyzes the management skills needed for livestock and poultry production. The student is expected to:
        - 127.49.d.9.B: identify types and essential features of facilities for livestock and poultry such as housing, veterinary, and reproduction facilities.
        - 127.49.d.9.E: explain the use of technology such as aircraft, robotics, and smart irrigation in modern livestock and poultry production.
    - 127.49.d.10: The student examines the interrelationship of the factors impacting livestock and poultry production operations. The student is expected to:
        - 127.49.d.10.A: research and explain livestock and poultry biosecurity and waste management practices.
        - 127.49.d.10.B: create an effective financial management plan for a livestock and poultry production operation.
        - 127.49.d.10.C: analyze and discuss environmental regulations, governmental regulations, and animal welfare policies related to livestock and poultry production.
- Advanced Animal Science
    - 127.52.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.52.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.52.d.8: The student analyzes the history, domestication, and evaluation of animals, including canine, feline, bovine,

equine, caprine, porcine, ovine, poultry, and lagomorphs. The student is expected to:
    - 127.52.d.8.A: research and describe the history, including evolution, domestication, and introduction of species to countries, of canine, feline, bovine, equine, caprine, porcine, ovine, poultry, and lagomorphs.
- 127.52.d.17: The student demonstrates an understanding of policies and current issues in animal science. The student is expected to:
    - 127.52.d.17.A: investigate and discuss the use of biotechnology and biosecurity in the animal science industry.
    - 127.52.d.17.B: identify governmental regulations and policies such as environmental and animal welfare and research the impacts on animal production.
    - 127.52.d.17.C: identify and research a current issue in scientific animal agriculture and design a protocol to address the issue using the scientific and engineering design process.

**HERBS AND SPICES OF THE WORLD**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II

        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
Social Studies

- World History Studies
  - 113.42.d.1: History. The student understands traditional historical points of reference in world history. The student is expected to:
    - 113.42.d.1.D: identify major causes and describe the major effects of the following important turning points in world history from 1450 to 1750: the rise of the Ottoman Empire, the influence of the Ming dynasty on world trade, European exploration and the Columbian Exchange, European expansion, and the Renaissance and the Reformation.
  - 113.42.d.7: History. The student understands the causes and impact of increased global interaction from 1450 to 1750. The student is expected to:
    - 1137.42.d.7.B: explain the impact of the Columbian Exchange.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
    - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.C: describe the basic structure and functions of plant parts.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.

**HONEY AS A BIOMOLECULE**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.F: make inferences and use evidence to support understanding.
        - 110.36.c.4.G: evaluate details read to determine key ideas.

        - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
            - 110.36.c.11.A: develop questions for formal and informal inquiry.
            - 110.36.c.11.F: synthesize information from a variety of sources.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.F: make inferences and use evidence to support understanding.
            - 110.37.c.4.G: evaluate details read to determine key ideas.
            - 110.37.c.4.H: synthesize information from multiple texts to create new understanding.
        - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
            - 110.37.c.11.A: develop questions for formal and informal inquiry.
            - 110.37.c.11.F: synthesize information from a variety of sources.
    - English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
  - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.F: synthesize information from a variety of sources.

- <u>English IV</u>
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.A: develop questions for formal and informal inquiry.
  - 110.39.c.11.F: synthesize information from a variety of sources.

Social Studies
- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:

- 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

        - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
    - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.42.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
        - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.
    - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
        - 112.42.c.11.B: investigate and explain the role of enzymes in facilitating cellular processes.

Agriculture, Food, and Natural Resources

- Food Technology and Safety
    - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
        - 127.34.d.3.A: define the terms used in food technology.
- Food Processing
    - 127.35.d.3: The student understands consumer satisfaction issues. The student is expected to:
        - 127.35.d.3.B: explain the factors that affect food palatability.
- Beekeeping and Honey Processing
    - 127.61.d.2: The student explores the biology of bee behavior. The student is expected to:
        - 127.61.d.2.B: explain the different roles assumed by the different types of honeybees, including the queen, drones, and workers.

- 127.61.d.5: The student demonstrates beehive management techniques. The student is expected to:
  - 127.61.d.5.A: identify the tools of an apiarist and demonstrate safe and proper usage of tools.
  - 127.61.d.5.D: identify safety precautions in the field while handling live bees, caring for the colonies in the hives, and extracting honey and honeycomb.
  - 127.61.d.5.E: explain the proper methods of bee handling to prevent harm to handlers and others.
  - 127.61.d.5.F: describe personal protective equipment used to reduce the risk of accidents.
- 127.61.d.7: The student examines honey harvesting and the use of proper equipment and tools. The student is expected to:
  - 127.61.d.7.A: describe the tools and equipment used in honey production, including a bee brush, fume board, honey drip tray, nectar detector, escape board, and extractor.
  - 127.61.d.7.B: explain the safe use of honey harvesting tools.
  - 127.61.d.7.C: explain the use of technology in modern honey production systems.
  - 127.61.d.7.D: explain the appropriate procedures used to extract honey.

**JOURNEY 2050 LESSON 1: INTRODUCTION TO SUSTAINABLE AGRICULTURE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
    - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
        - 113.31.c.1.A: explain why scarcity and choice are basic economic problems faced by every society.
    - 113.31.c.10: Economics. The student understands key components of economic growth. The student is expected to:
        - 113.31.c.10.B: analyze how technology relates to growth.
    - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
    - 113.43.c.8: Geography. The student understands how people, places, and environments are connected and interdependent. The student is expected to:

        - 113.43.c.8.A: compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.
        - 113.43.c.8.C: evaluate the economic and political relationships between settlements and the environment, including sustainable development and renewable/non-renewable resources.
    - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
        - 113.43.c.11.C: assess how changes in climate, resources, and infrastructure (technology, transportation, and communication) affect the location and patterns of economic activities.
    - 113.43.c.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
        - 113.43.c.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.

Mathematics – No Math TEKS

Science

- Environmental Systems
    - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
        - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
        - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
        - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
    - 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
        - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.

- 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.

- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
  - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and

animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

- Agribusiness Management and Marketing
  - 127.46.d.4: The student recognizes and explains roles within organizations, inter-organizational systems, and the larger environment. The student is expected to:
    - 127.46.d.4.A: identify how organizational systems affect performance and the quality of products and services related to agriculture, food, and natural resources.
    - 127.46.d.4.B: research and describe the domestic and global context of agricultural industries and careers.
    - 127.46.d.4.D: identify the sectors of agribusiness such as production, processing, and distribution.

**JOURNEY 2050 LESSON 2: SOIL NUTRIENTS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English III

        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
    - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
        - 113.31.c.1.A: explain why scarcity and choice are basic economic problems faced by every society.
        - 113.31.c.1.C: describe the economic factors of production: land, labor, capital, and entrepreneurship. and
    - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
    - 113.43.c.8: Geography. The student understands how people, places, and environments are connected and interdependent. The student is expected to:
        - 113.43.c.8.A: compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.

Mathematics – No Math TEKS

Science

- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
    - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
  - 112.50.c.11: The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
    - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
- 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

▪ 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
- 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.11.B: identify the components and properties of soils.

○ Turf Grass Management
▪ 127.40.d.3: The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass establishment. The student is expected to:
- 127.40.d.3.D: determine the importance of site grading for water movement.

▪ 127.40.d.4: The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass maintenance. The student is expected to:
- 127.40.d.4.G: develop fertilization plans that address turf grass needs and environmental concerns.

○ Advanced Plant and Soil Science
▪ 127.58.d.14: The student explains the relationship of biotic and abiotic factors within habitats and ecosystems and their effects on plant ecology. The student is expected to:

        - 127.58.d.14.F: describe potential positive and negative impacts of human activity such as pest control, hydroponics, monoculture planting, and sustainable agriculture on ecosystems.
    - 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
        - 127.58.d.16.A: summarize and evaluate methods of land use and management.
        - 127.58.d.16.B: identify sources, quality, and conservation of water in plant production.
        - 127.58.d.16.C: explore and describe conservation practices such as rainwater collection, water-conserving irrigation systems, and use of biofuels.
    - 127.58.d.18: The student analyzes plant and soil science as it relates to plant and soil relationships affecting the production of food, fiber, and other economic crops. The student is expected to:
        - 127.58.d.18.A: explain the importance and interrelationship of soil and plants.
        - 127.58.d.18.B: compare soil and plants in agricultural and urban settings.

**JOURNEY 2050 LESSON 3: WATER**

<u>English Language Arts and Reading</u>

- <u>English I</u>
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- <u>English II</u>
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
    - 113.31.c.1.A: explain why scarcity and choice are basic economic problems faced by every society.
  - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
  - 113.43.c.12: Economics. The student understands the economic importance of, and issues related to, the location and management of resources. The student is expected to:

- 113.43.c.12.A: analyze how the creation, distribution, and management of key natural resources affects the location and patterns of movement of products, money, and people.
- 113.43.c.12.B: evaluate the geographic and economic impact of policies related to the development, use, and scarcity of natural resources such as regulations of water.

▪ 113.43.c.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
- 113.43.c.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.

Mathematics – No Math TEKS
Science

○ Aquatic Science
▪ 112.47.c.10: Science concepts. The student knows the origin and potential uses of fresh water. The student is expected to:
- 112.47.c.10.A: identify sources of water in a watershed, including rainfall, groundwater, and surface water.

○ Earth and Space Science
▪ 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
- 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

○ Environmental Systems
▪ 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to explain phenomena or design solutions using appropriate tools and models. The student is expected to:
- 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.

        - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
            - 112.50.c.5.B: relate how water sources, management, and conservation affect water uses and quality.
            - 112.50.c.5.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
            - 112.50.c.5.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
  - 127.30.d.15.C: identify and describe regulations and governmental programs related to environmental and natural resources, including water regulations, pesticide usage, and hunting and fishing laws.
  - 127.30.d.15.D: identify and compare alternative energy sources that stem from or impact environmental and natural resources.
  - 127.30.d.15.E: identify and compare energy and water conservation methods.

- Energy and Natural Resource Technology
  - 127.32.d.4: The student identifies water use and management in agricultural settings. The student is expected to:
    - 127.32.d.4.B: identify agricultural uses of water such as recycling.
    - 127.32.d.4.C: discuss how agricultural uses may impact water resources.
    - 127.32.d.4.F: evaluate how the different agricultural water uses may impact water availability.
- Advanced Energy and Natural Resource Technology
  - 127.33.d.7: The student identifies water use and wastewater management. The student is expected to:
    - 127.33.d.7.A: identify municipal, industrial, and agricultural uses of water.
    - 127.33.d.7.B: explore and develop water recycling opportunities.

- 127.33.d.7.E: analyze how water use impacts water availability.

- Advanced Plant and Soil Science
  - 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
    - 127.58.d.16.A: summarize methods of land use and management.
    - 127.58.d.16.B: identify sources, quality, and conservation of water in plant production.
    - 127.58.d.16.C: explore and describe conservation practices such as rainwater collection, water-conserving irrigation systems, and use of biofuels.

**JOURNEY 2050 LESSON 4: ECONOMY**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a

speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
    - 113.31.c.1.A: explain why scarcity and choice are basic economic problems faced by every society.
    - 113.31.c.1.B: describe how societies answer the basic economic questions: what to produce, how to produce, and for whom to produce.
    - 113.31.c.1.C: describe the economic factors of production: land, labor, capital, and entrepreneurship.
  - 113.31.c.2: Economics. The student understands the interaction of supply, demand, and price. The student is expected to:
    - 113.31.c.2.A: understand the effect of changes in price on the quantity demanded and quantity supplied.
    - 113.31.c.2.B: identify the non-price determinants that create changes in supply and demand, which result in a new equilibrium price.
  - 113.31.c.17: Personal financial literacy. The student understands the role of individuals in financial markets. The student is expected to:
    - 113.31.c.17.A: assess ways to be a wise investor in the stock market and in other personal investment options such as developing a personal retirement plan.
  - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather

information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics – No Math TEKS
Science

- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
    - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.

- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

- Agribusiness Management and Marketing:
  - 127.46.d.6: The student defines and examines agribusiness management and marketing and its importance to agriculture and the economy. The student is expected to:
    - 127.46.d.6.A: describe different roles and functions of management and leadership in agribusiness.
    - 127.46.d.6.B: analyze the impact of management and marketing on the production, processing, and distribution of agricultural products.
    - 127.46.d.6.C: identify key economic principles of free enterprise.
    - 127.46.d.6.D: explain the impact of key economic principles in agribusiness.
    - 127.46.d.6.E: analyze the economic opportunities of agribusiness in a selected market or region.

**JOURNEY 2050 LESSON 5: LAND USE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- English II

        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
    - 113.31.c.1: Economics. The student understands the concepts of scarcity and opportunity costs. The student is expected to:
        - 113.31.c.1.A: explain why scarcity and choice are basic economic problems faced by every society.
        - 113.31.c.1.C: describe the economic factors of production: land, labor, capital, and entrepreneurship.
    - 113.31.c.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and

disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- United States History Studies Since 1877
  - 113.41.c.14: Geography. The student understands the relationship between population growth and the physical environment. The student is expected to:
    - 113.41.c.14.A: identify the effects of population growth and distribution on the physical environment.
- World Geography Studies
  - 113.43.c.8: Geography. The student understands how people, places, and environments are connected and interdependent. The student is expected to:
    - 113.43.c.8.A: compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.

Mathematics – No Math TEKS

Science

- Environmental Systems
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
    - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
  - 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
    - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
    - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature

conservancy groups, game and wildlife management, and ecotourism.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

        - 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
            - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
            - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
            - 127.30.d.15.C: identify and describe regulations and governmental programs related to environmental and natural resources, including water regulations, pesticide usage, and hunting and fishing laws.
            - 127.30.d.15.D: identify and compare alternative energy sources that stem from or impact environmental and natural resources.
            - 127.30.d.15.E: identify and compare energy and water conservation methods.
    - Advanced Animal Science
        - 127.52.d.17: The student demonstrates an understanding of policies and current issues in animal science. The student is expected to:
            - 127.52.d.17.C: identify and research a current issue in scientific animal agriculture and design a protocol to address the issue using the scientific and engineering design process.
    - Energy and Natural Resource Technology
        - 127.32.d.3: The student discusses the importance and scope of natural resources. The student is expected to:
            - 127.32.d.3.C: analyze the impacts of natural resources and their effects on the agricultural economy.
    - Advanced Energy and Natural Resource Technology
        - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
            - 127.33.d.3.C: evaluate the impacts of energy production on natural resources and the agricultural economy.
    - Wildlife, Fisheries, and Ecology Management
        - 127.36.d.2: The student analyzes the importance of wildlife, with an emphasis on use and management. The student is expected to:

        - 127.36.d.2.A: analyze the importance of wildlife, fisheries, and ecology management.
    - Range Ecology and Management
        - 127.38.d.3: The student develops an understanding of rangeland as a dynamic, living, and changeable system. The student is expected to:
            - 127.38.d.3.A: explain the relationship of rangeland to the environment.
            - 127.38.d.3.B: discuss the interrelationships among water, alternative use, carrying capacity, and population.
    - Advanced Plant and Soil Science
        - 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
            - 127.58.d.16.A: summarize methods of land use and management.

**JOURNEY 2050 LESSON 6: CAREERS FOR 2050 AND BEYOND!**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses

genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:

- 110.36.c.10.B: compose informational texts such as explanatory essays, reports, and personal essays using genre characteristics and craft.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
    - 110.37.c.10.B: compose informational texts such as explanatory essays, reports, and personal essays using genre characteristics and craft.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.38.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
- 110.38.c.10.B: compose informational texts such as explanatory essays, reports, resumes, and personal essays using genre characteristics and craft.

○ English IV
▪ 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.39.c.10: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:

- 110.39.c.10.B: compose informational texts such as explanatory essays, reports, resumes, and personal essays using genre characteristics and craft.

Social Studies – No Social Studies TEKS
Mathematics – No Math TEKS
Science

- Environmental Systems
  - 112.37.c.3: Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:
    - 112.37.c.3.E: describe the connection between environmental science and future careers.

Career Development

- Career Preparation General
  - 127.2.d.8: The student identifies skills and attributes necessary for professional success. The student is expected to:
    - 127.2.d.8.A: evaluate and compare career options, including salaries and benefits.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.F: identify training, education, and certification requirements for occupational choices in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
- Professional Standards and Communication in Agribusiness
    - 127.45.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.45.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of agribusiness.
        - 127.45.d.1.F: identify training, education, and certification requirements for occupational choices.
- Agribusiness Management and Marketing
    - 127.46.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.46.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of agribusiness systems science and develop a plan for obtaining the education, training, and certifications required.
- Agriculture Leadership, Research, and Communication
    - 127.47.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.47.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of agriculture and develop a plan for obtaining the education, training, and certifications required for the chosen occupation.
- Equine Science
    - 127.48.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

        - 127.48.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of equine science.
- Livestock and Poultry Production
    - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.49.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of livestock and poultry production.
- Small Animal Management
    - 127.50.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.50.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of small animal management.
- Veterinary Medical Applications
    - 127.51.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.51.d.1.A: identify career, education, and entrepreneurship opportunities for a chosen occupation in the field of veterinary science and develop a plan for obtaining the education, training, and certifications required.
- Advanced Animal Science
    - 127.52.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.52.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of animal science and develop a plan for obtaining the education, training, and certifications required.
- Floral Design
    - 127.53.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.53.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of floral

design and develop a plan for obtaining the education, training, and certifications required.

- Horticultural Science
  - 127.54.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.54.d.1.A: identify career and entrepreneurship opportunities in the field of plant science and develop a plan for obtaining the education, training, and certifications required.
- Greenhouse Operation and Production
  - 127.55.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.55.d.1.A: identify career development, education, and entrepreneurship opportunities in the field of greenhouse operation and production.
- Viticulture
  - 127.56.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.55.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of viticulture and develop a plan for obtaining the education, training, and certifications required.
- Advanced Floral Design
  - 127.57.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.57.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of floral design and develop a plan for obtaining the education, training, and certifications required.
- Advanced Plant and Soil Science
  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of plant

science and develop a plan for obtaining the education, training, and certifications required.

- Geographic Information Systems for Agriculture
  - 127.59.d.2: The student explains the current applications of geographic information system (GIS) in agriculture, food, and natural resources and identifies the future need for GIS in precision agriculture. The student is expected to:
    - 127.59.d.2.A: research and compare current and emerging careers related to GIS in agriculture and natural resource fields.

**JOURNEY 2050 LESSON 7: TECHNOLOGY AND INNOVATIONS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.

- 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.
    - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence,

well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.38.c.11.E: locate relevant sources.
        - 110.38.c.11.F: synthesize information from a variety of sources.
        - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.

- 110.39.c.11.F: synthesize information from a variety of sources.
- 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- Economics with Emphasis on the Free Enterprise System and its Benefits
  - 113.31.c.2: Economics. The student understands the interaction of supply, demand, and price. The student is expected to:
    - 113.31.c.2.A: understand the effect of changes in price on the quantity demanded and quantity supplied.
    - 113.31.c.2.B: identify the non-price determinants that create changes in supply and demand, which result in a new equilibrium price.
  - 113.31.c.10: Economics. The student understands key components of economic growth. The student is expected to:
    - 113.31.c.10.B: analyze how technology relates to growth.
- United States History Since 1877
  - 113.41.c.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
    - 113.41.c.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
- World Geography Studies
  - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.c.11.C: assess how changes in climate, resources, and infrastructure (technology, transportation, and communication) affect the location and patterns of economic activities.
  - 113.43.c.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
    - 113.43.c.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.

Mathematics – No Math TEKS

Science

- Environmental Systems

- 112.50.c.12: Science concepts. The student knows the impact of human activities on the environment. The student is expected to:
  - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

**KNOW YOUR NITROGEN**

TEXAS FARM BUREAU®

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
        - 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
            - 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
                - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
        - 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
            - 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:

- 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies

- 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.

    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
    - 112.42.c.13.B: analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models.
    - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
    - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects

biodiversity and analyze how changes in biodiversity impact ecosystem stability.

- Aquatic Science:
  - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.47.c.1.D: use appropriate tools such as Global Positioning System (GPS), Geographic Information System (GIS), weather balloons, buoys, water testing kits, meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, field guides, water quality test kits or probes, 30-meter tape measures, tarps, ripple tanks, trowels, screens, buckets, sediment samples equipment, cameras, flow meters, cast nets, kick nets, seines, computer models, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, and field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, fish tanks and associated supplies, and hydrometers; 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence .
    - 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

    - 112.47.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.47.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.47.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student
    - 112.47.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.47.c.9: Science concepts. The student knows the role of cycles in an aquatic environment. The student is expected to:
    - 112.47.c.9.C: explain how tidal cycles influence intertidal ecology.
- 112.47.c.10: Science concepts. The student knows the origin and potential uses of fresh water. The student is expected to:
    - 112.47.c.10.A: identify sources of water in a watershed, including rainfall, groundwater, and surface water.
    - 112.47.c.10.B: identify factors that contribute to how water flows through a watershed.
    - 112.47.c.10.C: analyze water quantity and quality in a local watershed or aquifer.
    - 112.47.c.10.D: describe human uses of fresh water and how human freshwater use competes with that of other organisms.
- 112.47.c.11: Science concepts. The student knows that geological phenomena and fluid dynamics affect aquatic systems. The student is expected to:
    - 112.47.c.11.D: describe how erosion and deposition in river systems lead to formation of geologic features.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.50.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.50.c.1.D: use appropriate tools such as meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 30 meter tape measures, tarps, shovels, trowels, screens, buckets, rock and mineral samples equipment, air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, and kick nets.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

    - 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.50.c.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.A: identify native plants and animals within a local ecosystem and compare their roles to those of plants and animals in other biomes, including aquatic, grassland, forest, desert, and tundra.
    - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.
- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.

        - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
        - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
        - 112.50.c.6.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems.
        - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.
        - 112.50.c.6.F: evaluate the impact of waste management methods such as reduction, reuse, recycling, upcycling, and composting on resource availability in the local environment.
    - 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
        - 112.50.c.7.A: describe the interactions between the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.
    - 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
        - 112.50.c.8.D: analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes.
- <u>Earth Systems Science:</u>
    - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
        - 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical

and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.49.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.49.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.49.c.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.49.c.10: Science concepts. The student knows how the physical and chemical properties of the ocean affect its structure and flow of energy. The student is expected to:
    - 112.49.c.10.A: describe how the composition and structure of the oceans leads to thermohaline circulation and its periodicity
    - 112.49.c.10.B: model and explain how changes to the composition, structure, and circulation of deep oceans

affect thermohaline circulation using data on energy flow, ocean basin structure, and changes in polar ice caps and glaciers.

- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.C: model how greenhouse gases trap thermal energy near Earth's surface
- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.

Agriculture Food, and Natural Resources

- Advanced Plant and Soil Science
  - 127.58.d.2: The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 127.58.d.2.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
    - 127.58.d.2.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 127.58.d.2.D: use appropriate tools such as microscopes, measuring equipment, sensors, plant propagation tools, soil testing kits, and calculators.
    - 127.58.d.2.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.

- 127.58.d.2.F: organize quantitative and qualitative data using graphs and charts.
- 127.58.d.2.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 127.58.d.2.H: distinguish between scientific hypotheses, theories, and laws.

▪ 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
- 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.
- 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.
- 127.58.d.12.E: describe the application of soil mechanics to buildings, landscapes, and crop production.
- 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.
- 127.58.d.12.H: evaluate and determine soil health through soil testing.

**LACTOSE LAB: SOME DON'T LIKE IT SWEET**

English Language Arts and Reading

○ English I

▪ 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.A: develop questions for formal and informal inquiry.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.A: develop questions for formal and informal inquiry.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.38.c.11.A: develop questions for formal and informal inquiry.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.39.c.4.G: evaluate details read to analyze key ideas.

▪ 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
- 110.39.c.11.A: develop questions for formal and informal inquiry.

Social Studies

○ World History Studies
▪ 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

○ World Geography Studies
▪ 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
- 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

○ Economics with Emphasis on the Free Enterprise System and Its Benefits
▪ 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through

established research methodologies from a variety of valid sources, including technology. The student is expected to:

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

        - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
        - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
    - 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
        - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
        - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.

Agriculture, Food, and Natural Resources

- Food Technology and Safety
    - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
        - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
    - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
        - 127.34.d.3.A: define the terms used in food technology.
        - 127.34.d.3.B: compare and contrast the nutritive value of food groups.

        - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
            - 127.34.d.10.A: describe methods of preparing milk for processing.
            - 127.34.d.10.B: evaluate methods of processing milk and dairy products.
            - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.
    - Food Processing
        - 127.35.d.2: The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:
            - 127.35.d.2.B: explain trends in the consumption of food products.

**LOOKING UNDER THE LABEL**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS

TEXAS FARM BUREAU®

No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.

- 127.30.d.13.D: discuss current issues in food production.

**MASTERING MINDFUL EATING**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.
  - 115.38.c.7: Healthy eating and physical activity--physical activity. The student identifies, analyzes, and applies strategies

for enhancing and maintaining optimal personal physical fitness throughout the lifespan. The student is expected to:

- 115.38.c.7.A: analyze the relationships between nutrition, physical activity, and quality of life as they relate to mental, physical, and social health benefits.

- Health II
  - 115.39.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to design a realistic, long-term personal dietary plan that promotes individual and family health.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.

**MATTER OF FACT**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.36.c.4.G: evaluate details read to determine key ideas.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV

- 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS

Science

- Biology
  - 112.42.c.13: Science concepts--interdependence within environmental systems. The student knows that interactions at various levels of organization occur within an ecosystem to maintain stability. The student is expected to:
    - 112.42.c.13.D: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
- Chemistry
  - 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.43.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.43.c.6: Science concepts. The student understands the development of atomic theory and applies it to real-world phenomena. The student is expected to:
    - 112.43.c.6.A: construct models using Dalton's Postulates, Thomson's discovery of electron properties,

Rutherford's nuclear atom, Bohr's nuclear atom, and Heisenberg's Uncertainty Principle to show the development of modern atomic theory over time.
- 112.43.c.6.B: describe the structure of atoms and ions, including the masses, electrical charges, and locations of protons and neutrons in the nucleus and electrons in the electron cloud.

- Environmental Systems
  - 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.A: identify native plants and animals within a local ecosystem and compare their roles to those of plants and animals in other biomes, including aquatic, grassland, forest, desert, and tundra.
    - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.

No Social Studies TEKS
Agriculture, Food, and Natural Resources
- Advanced Plant and Soil Science
  - 127.58.d.11: The student develops an understanding of plant physiology and nutrition. The student is expected to:
    - 127.58.d.11.C: identify the essential nutrients in soil.
    - 127.58.d.11.D: describe the role of macronutrients and micronutrients in plants.

**MELONS, MITOSIS, AND MEIOSIS**
English Language Arts and Reading
- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models.
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.42.c.6: Biological Structures, Functions, and Processes: The student knows how an organism grows and the importance of cell differentiation. The student is expected to:
  - 112.42.c.6.A: explain the importance of the cell cycle to the growth of organisms, including an overview of the stages of the cell cycle and deoxyribonucleic acid (DNA) replication models.
  - 112.42.c.6.B: explain the process of cell specialization through cell differentiation, including the role of environmental factors.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
  - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
  - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
  - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
  - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.

Agriculture Food, and Natural Resources

- Advanced Plant and Soil Science
  - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
    - 127.58.d.15.A: analyze the genetics and evolution of various crops.
    - 127.58.d.15.B: identify and classify plants according to taxonomy.
    - 127.58.d.15.C: identify characteristics related to seed quality, including mechanical damage, viability, and grade.
    - 127.58.d.15.F: analyze trends in crop species and varieties grown locally in Texas and the United States and how trends affect producers and consumers.

- 127.58.d.15.G investigate and identify recent advancements in plant and soil science such as biotechnology, artificial intelligence, and drone, infrared, and sensor technologies.

**METHODS OF CROP MODIFICATION**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.

- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.A: develop questions for formal and informal inquiry.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages

in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.37.c.11.A: develop questions for formal and informal inquiry.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages

in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.38.c.11.A: develop questions for formal and informal inquiry.
- 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.A: develop questions for formal and informal inquiry.

Social Studies
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science
- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
  - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
  - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.

    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
    - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.
- 112.42.c.8: Mechanisms of Genetics: The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:
    - 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over during meiosis in increasing diversity in populations of organisms that reproduce sexually.
- 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
    - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
    - 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
    - 112.42.c.10.C: analyze and evaluate how natural selection may lead to speciation.
    - 112.42.c.10.D: analyze evolutionary mechanisms other than natural selection, including genetic drift, gene flow, mutation, and genetic recombination, and their effect on the gene pool of a population.
- 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
    - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular

respiration using models, including the chemical equations for these processes.

- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
  - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

Agriculture, Food, and Natural Resources

- Advanced Plant Science
  - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
    - 127.58.d.15.A: analyze the genetics and evolution of various crops.
  - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
    - 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.
    - 127.58.d.19.B: apply principles of genetics and plant breeding to plant production.
    - 127.58.d.19.C: illustrate the development of new crop varieties that are developed over time.
    - 127.58.d.19.D: design and conduct investigations to test principles of genetics.

**MILK: THE SCOOP ON CHEMICAL AND PHYSICAL CHANGES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information,

developing a plan for consensus building, and setting ground rules for decision making.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Social Studies TEKS

No Math TEKS

Science

- Biology:
  - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling,

energy flow, and enzymes in living organisms. The student is expected to:

- 112.42.c.11.B: investigate and explain the role of enzymes in facilitating cellular processes.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
- Food Technology and Safety
  - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
    - 127.34.d.3.A: define the terms used in food technology.
  - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
    - 127.34.d.10.A: describe methods of preparing milk for processing.
    - 127.34.d.10.10.B: evaluate methods of processing milk and dairy products.
    - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.

TEXAS FARM BUREAU®

**MY AGRICULTURAL CONNECTIONS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.36.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.36.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.G: evaluate details read to determine key ideas.
- 110.37.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
  - 110.37.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
    - 110.37.c.9.B.i: using an organizing structure appropriate to purpose, audience, topic, and context.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.38.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:

- 110.38.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.9: Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and use appropriate conventions. The student is expected to:
    - 110.39.c.9.B: develop drafts into a focused, structured, and coherent piece of writing in timed and open-ended situations by:
      - 110.39.c.9.B.i: using strategic organizational structures appropriate to purpose, audience, topic, and context.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies

        - 113.43.d.12: Economics. The student understands the economic importance of, and issues related to, the location and management of resources. The student is expected to:
            - 113.43.d.12.A: analyze how the creation, distribution, and management of key natural resources affects the location and patterns of movement of products, money, and people.
        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - Economics with Emphasis on the Free Enterprise System and Its Benefits
        - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Earth Systems Science:
    - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.

- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.D: identify and compare alternative energy sources that stem from or impact environmental and natural resources.

**MYPLATE, MYWIN**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.G: evaluate details read to determine key ideas.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.
  - 115.38.c.7: Healthy eating and physical activity--physical activity. The student identifies, analyzes, and applies strategies for enhancing and maintaining optimal personal physical fitness throughout the lifespan. The student is expected to:
    - 115.38.c.7.A: analyze the relationships between nutrition, physical activity, and quality of life as they relate to mental, physical, and social health benefits.
- Health II
  - 115.39.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to design a realistic, long-term personal dietary plan that promotes individual and family health.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.

**MYSTERY JUICE**

English Language Arts and Reading

- English I

- 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.4.H: synthesize information from two texts to create new understanding.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.A: develop questions for formal and informal inquiry.
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II

- 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.4.H: synthesize information from multiple texts to create new understanding.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.37.c.11.A: develop questions for formal and informal inquiry.
  - 110.37.c.11.E: locate relevant sources.
  - 110.37.c.11.F: synthesize information from a variety of sources.
  - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III

- 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
  - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.H: synthesize information from a variety of text types to create new understanding.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.

- 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.4.H: synthesize information from a variety of text types to create new understanding.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.39.c.11.A: develop questions for formal and informal inquiry.
    - 110.39.c.11.E: locate relevant sources.

- 110.39.c.11.F: synthesize information from a variety of sources.
- 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
- 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.1.H: distinguish among scientific hypotheses, theories, and laws.

▪ 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
  - 112.42.c.11.B: investigate and explain the role of enzymes in facilitating cellular processes.

▪ 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
  - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
    - 112.49.c.1.H: distinguish among scientific hypotheses, theories, and laws.
  - 112.49.c.9: Science concepts. The student knows that the lithosphere continuously changes as a result of dynamic and complex interactions among Earth's systems. The student is expected to:
    - 112.49.c.9.A: interpret Earth surface features using a variety of methods such as satellite imagery, aerial photography, and topographic and geologic maps using appropriate technologies.
    - 112.49.c.9.B: investigate and model how surface water and ground water change the lithosphere through

chemical and physical weathering and how they serve as valuable natural resources.
- 112.49.c.9.C: model the processes of mass wasting, erosion, and deposition by water, wind, ice, glaciation, gravity, and volcanism in constantly reshaping Earth's surface.
- 112.49.c.9.D: evaluate how weather and human activity affect the location, quality, and supply of available freshwater resources.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
    - 127.30.d.13.D: discuss current issues in food production.

        - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
- Energy and Natural Resource Technology
    - 127.32.d.3: The student discusses the importance and scope of natural resources. The student is expected to:
        - 127.32.d.3.A: identify various types of natural resources.
        - 127.32.d.3.B: discuss renewable and non-renewable energy resources and their impact on the environment.
        - 127.32.d.3.C: analyze the impacts of natural resources and their effects on the agricultural economy.
- Advanced Energy and Natural Resource Technology
    - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
        - 127.33.d.3.A: identify various types of natural resources.
        - 127.33.d.3.B: identify renewable, non-renewable, and sustainable energy resources and determine their availability.
        - 127.33.d.3.C: evaluate the impacts of energy production on natural resources and the agricultural economy.
- Food Technology and Safety
    - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
        - 127.34.d.2.A: explain the significance of food science systems.
- Food Processing
    - 127.35.d.2: The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:
        - 127.35.d.2.A: explain the importance of the food processing industry in the free enterprise system.
        - 127.35.d.2.B: explain trends in the consumption of food products.
- Livestock and Poultry Production
    - 127.49.d.10: The student examines the interrelationship of the factors impacting livestock and poultry production operations. The student is expected to:
        - 127.49.d.10.F: assess the impact of the United States livestock and poultry industry on world commodity markets.

TEXAS FARM BUREAU®

**NUTRIENTS TO GET LESS OF**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.

**NUTRIENTS TO GET MORE OF**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS

TEXAS FARM BUREAU®

No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.

**NUTRITION ACROSS THE LIFESPAN**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

        - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
    - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:

- 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
- 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

▪ 115.38.c.7: Healthy eating and physical activity--physical activity. The student identifies, analyzes, and applies strategies for enhancing and maintaining optimal personal physical fitness throughout the lifespan. The student is expected to:

- 115.38.c.7.A: analyze the relationships between nutrition, physical activity, and quality of life as they relate to mental, physical, and social health benefits.

No Agriculture, Food, and Natural Resources TEKS

**ONE IN A MILLION**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.

- 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics
- Algebra 2
  - 111.40.c.7: Number and algebraic methods. The student applies mathematical processes to simplify and perform operations on expressions and to solve equations. The student is expected to:
    - 111.40.c.7.A: add, subtract, and multiply complex numbers.

Science
- Aquatic Science:
  - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies

problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.47.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.47.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
- 112.47.c.1.D: use appropriate tools such as Global Positioning System (GPS), Geographic Information System (GIS), weather balloons, buoys, water testing kits, meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, field guides, water quality test kits or probes, 30-meter tape measures, tarps, ripple tanks, trowels, screens, buckets, sediment samples equipment, cameras, flow meters, cast nets, kick nets, seines, computer models, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, and field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, fish tanks and associated supplies, and hydrometers; 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.47.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.47.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
  - 112.47.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.47.c.7: Science Concept: The student knows about the interdependence and interactions that occur in aquatic environments. The student is expected to:
  - 112.47.c.7.C: identify variables that affect the solubility of carbon dioxide and oxygen in water.

- Chemistry:
  - 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.43.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.43.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
    - 112.43.c.1.C: use appropriate safety equipment and practices during laboratory, classroom, and field

investigations as outlined in Texas Education Agency-approved safety standards.
    - 112.43.c.1.D: use appropriate tools such as Safety Data Sheets (SDS), scientific or graphing calculators, computers and probes, electronic balances, an adequate supply of consumable chemicals, and sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, and burettes.
    - 112.43.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.43.c.1.F: organize quantitative and qualitative data using oral or written lab reports, labeled drawings, particle diagrams, charts, tables, graphs, journals, summaries, or technology-based reports.
- 112.43.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.43.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.43.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.43.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.43.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.43.c.11: Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:
    - 112.43.c.11.A: describe the unique role of water in solutions in terms of polarity.

        - 112.43.c.11.B: distinguish among types of solutions, including electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions.
        - 112.43.c.11.C: investigate how solid and gas solubilities are influenced by temperature using solubility curves and how rates of dissolution are influenced by temperature, agitation, and surface area.
        - 112.43.c.11.D: investigate the general rules regarding solubility and predict the solubility of the products of a double replacement reaction.
        - 112.43.c.11.E: calculate the concentration of solutions in units of molarity.
    - 112.43.c.13: Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:
        - 112.43.c.13.B: investigate the process of heat transfer using calorimetry.

Agriculture, Food, and Natural Resources

- Landscape Design and Management
    - 127.39.d.6: The student performs landscape maintenance services. The student is expected to:
        - 127.39.d.6.C: analyze nutritional needs of plants.
        - 127.39.d.6.H: demonstrate lawn management techniques.
- Turf Grass Management
    - 127.40.d.4: The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass maintenance. The student is expected to:
        - 127.40.d.4.F: analyze nutritional needs of turf grass.
        - 127.40.d.4.I: use turf grass pesticide application techniques and equipment properly.
- Floral Design
    - 127.53.d.8: The student recognizes the current industry practices of floral enterprises. The student is expected to:
        - 127.53.d.8.B: use temperature, preservatives, and cutting techniques to extend the vase life of floral materials.
        - 127.53.d.8.C: identify and describe how tools, chemicals, and equipment are used in floral design and describe safe handling practices.

- 127.53.d.8.D: analyze the needs of indoor plants such as fertilizer, light, pruning, and water based on the condition of the plant.

- Horticulture Science
  - 127.54.d.8: The student manages and controls common pests, diseases, and deficiencies of horticultural plants. The student is expected to:
    - 127.54.d.8.E: demonstrate safe and proper practices in selecting, applying, storing, and disposing of chemicals; and
    - 127.54.d.8.F: review and explain the parts of a pesticide label.
- Greenhouse Operation and Production
  - 127.55.d.9: The student identifies and investigates greenhouse crop production factors. The student is expected to:
    - 127.55.d.9.E: analyze the effect of nutrients on greenhouse plant growth.
  - 127.55.d.11: The student investigates pest identification and control methods in the greenhouse environment. The student is expected to:
    - 127.55.d.11.C: identify appropriate greenhouse pesticide application techniques and equipment; and
    - 127.55.d.11.D: analyze pesticide labeling and safety data sheets.

**PHOTOPERIOD PHENOMENA**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

        - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
            - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
            - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- <u>English IV</u>
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

<u>Mathematics – No Math TEKS</u>

TEXAS FARM BUREAU®

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Aquatic Science:
  - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
  - 112.47.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations

to develop evidence-based arguments or evaluate designs. The student is expected to:

- 112.47.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.47.c.2.D: evaluate experimental and engineering designs.

- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.47.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.47.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.47.c.10: Science concepts. The student knows the origin and potential uses of fresh water. The student is expected to:
  - 112.47.c.10.D: describe human uses of fresh water and how human freshwater use competes with that of other organisms.
- 112.47.c.11: Science concepts. The student knows that geological phenomena and fluid dynamics affect aquatic systems. The student is expected to:
  - 112.47.c.11.B: identify interrelationships between ocean currents, climates, and geologic features such as continental margins, active and passive margins, abyssal plains, island atolls, peninsulas, barrier islands, and hydrothermal vents.

- <u>Environmental System:</u>
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
    - 112.50.c.7.A: describe the interactions between the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
    - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as

methods for food production, water distribution, energy production, and the extraction of minerals.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
  - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.
  - 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.49.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
  - 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
  - 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
    - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme

weather events and the hazards associated with these events.
- 112.49.c.12.D: analyze recent global ocean temperature data to predict the consequences of changing ocean temperature on evaporation, sea level, algal growth, coral bleaching, and biodiversity.
- 112.49.c.12.E: predict how human use of Texas's naturally occurring resources such as fossil fuels, minerals, soil, solar energy, and wind energy directly and indirectly changes the cycling of matter and energy through Earth's systems.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:

        - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
        - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.b: identify emerging technologies and trends in domestic and global food production.
- Food Technology and Safety
    - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
        - 127.34.d.2.A: explain the significance of food science systems.
        - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
    - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
        - 127.34.d.3.A: define the terms used in food technology.
    - 127.34.d.8: The student describes the processing, packaging, quality analysis, and marketing of eggs, poultry, and fish and their by-products. The student is expected to:
        - 127.34.d.8.A: describe processing techniques.
        - 127.34.d.8.F: describe marketing procedures for eggs, poultry, fish, and seafood.
- Livestock and Poultry Production
    - 127.49.d.5: The student explains the anatomy and physiology of livestock and poultry species. The student is expected to:
        - 127.49.d.5.A: identify and explain the skeletal, muscular, respiratory, and circulatory systems of livestock and poultry.
    - 127.49.d.9: The student analyzes the management skills needed for livestock and poultry production. The student is expected to:
        - 127.49.d.9.B: identify types and essential features of facilities for livestock and poultry such as housing, veterinary, and reproduction facilities.
- Advanced Plant and Soil Science

- 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
  - 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.

**PLANET ZORCON**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
    - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.38.c.4.F: make inferences and use evidence to support understanding.
    - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background

knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.c.8: Geography. The student understands how people, places, and environments are connected and interdependent. The student is expected to:
    - 113.43.c.8.A: compare ways that humans depend on, adapt to, and modify the physical environment, including the influences of culture and technology.
    - 113.43.c.8.C: evaluate the economic and political relationships between settlements and the environment, including sustainable development and renewable/non-renewable resources.
  - 113.43.c.19: Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment. The student is expected to:
    - 113.43.c.19.C: analyze the environmental, economic, and social impacts of advances in technology on agriculture and natural resources.

        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - Economics with Emphasis on the Free Enterprise System and Its Benefits
        - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

        - 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
            - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
            - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.
    - Environmental System:
        - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
            - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
            - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
        - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
            - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
        - 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
            - 112.50.c.5.C: evaluate the effects of fluctuations in abiotic factors on local ecosystems and local biomes.

- 112.50.c.5.E: use models to predict how the introduction of an invasive species may alter the food chain and affect existing populations in an ecosystem.
- 112.50.c.5.F: use models to predict how species extinction may alter the food chain and affect existing populations in an ecosystem.
- 112.50.c.5.G: predict changes that may occur in an ecosystem if genetic diversity is increased or decreased.

- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
  - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
  - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality
  - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
  - 112.50.c.6.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems.
  - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.
- 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
  - 112.50.c.7.A: describe the interactions between the components of the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.
  - 112.50.c.7.C: explain the flow of heat energy in an ecosystem, including conduction, convection, and radiation.
  - 112.50.c.7.D: identify and describe how energy is used, transformed, and conserved as it flows through ecosystems.
- 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
  - 112.50.c.8.A: compare exponential and logistical population growth using graphical representations.

- 112.50.c.8.B: identify factors that may alter carrying capacity such as disease; natural disaster; available food, water, and livable space; habitat fragmentation; and periodic changes in weather.
- 112.50.c.8.C: calculate changes in population size in ecosystems.
- 112.50.c.8.D: analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes.

▪ 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
- 112.50.c.9.C: examine how natural processes such as succession and feedback loops can restore habitats and ecosystems.
- 112.50.c.9.E: analyze the impact of natural global climate change on ice caps, glaciers, ocean currents, and surface temperatures.

▪ 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:
- 112.50.b.10.C: investigate the effects of pollutants such as chlorofluorocarbons, greenhouse gases, pesticide runoff, nuclear waste, aerosols, metallic ions, and heavy metals, as well as thermal, light, and noise pollution.
- 112.50.b.10.D: evaluate indicators of air, soil, and water quality against regulatory standards to determine the health of an ecosystem.
- 112.50.b.10.E: distinguish between the causes and effects of global warming and ozone depletion, including the causes, the chemicals involved, the atmospheric layer, the environmental effects, the human health effects, and the relevant wavelengths on the electromagnetic spectrum (IR and UV).

▪ 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
- 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.

- 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
- 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.

▪ 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:

- 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
- 112.50.c.12.B: evaluate the economic impacts of individual actions on the environment such as overbuilding, habitat destruction, poaching, and improper waste disposal.
- 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
- 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.
- 112.50.c.12.E: argue from evidence whether or not a healthy economy and a healthy environment are mutually exclusive.

Career Development

- Career Preparation General
  - 127.20.d. 8: The student identifies skills and attributes necessary for professional success. The student is expected to:
    - 127.20.d.8.A: evaluate and compare career options, including salaries and benefits.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

- 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
  - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
  - 127.30.d.15.C: identify and describe regulations and governmental programs related to environmental and natural resources, including water regulations, pesticide usage, and hunting and fishing laws.

- <u>Energy and Natural Resource Technology</u>
  - 127.32.d.3: The student discusses the importance and scope of natural resources. The student is expected to:
    - 127.32.d.3.A: identify various types of natural resources.

- 127.32.d.3.B: discuss renewable and non-renewable energy resources and their impact on the environment.
- 127.32.d.3.C: analyze the impacts of natural resources and their effects on the agricultural economy.

- 127.32.d.7: The student explains the effects of natural resource use. The student is expected to:
  - 127.32.d.7.A: identify the progression of use of natural resources leading to environmental degradation.
  - 127.32.d.7.B: explain the impact of human population dynamics on the environment.
  - 127.32.d.7.C: discuss the abuse of natural resources.
  - 127.32.d.7.D: communicate the environmental consequences of natural resource use such as the impact on living organisms.

- Advanced Energy and Natural Resource Technology
  - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
    - 127.33.d.3.A: identify various types of natural resources.
    - 127.33.d.3.B: identify renewable, non-renewable, and sustainable energy resources and determine their availability.

**PLANT-SOIL INTERACTIONS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
- 110.36.c.4.F: make inferences and use evidence to support understanding.
- 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
    - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.38.c.4.F: make inferences and use evidence to support understanding.
  - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making,

and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
  - 110.39.c.4.F: make inferences and use evidence to support understanding.
  - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through

established research methodologies from a variety of valid sources, including technology. The student is expected to:

- 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.

▪ 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:

- 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.

▪ 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:

- 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.

○ <u>Aquatic Science:</u>

▪ 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.

        - 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.47.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.47.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
        - 112.47.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.47.c.10: Science concepts. The student knows the origin and potential uses of fresh water. The student is expected to:
        - 112.47.c.10.A: identify sources of water in a watershed, including rainfall, groundwater, and surface water.
        - 112.47.c.10.B: identify factors that contribute to how water flows through a watershed.
        - 112.47.c.10.C: analyze water quantity and quality in a local watershed or aquifer.
        - 112.47.c.10.D: describe human uses of fresh water and how human freshwater use competes with that of other organisms.
- <u>Environmental System:</u>
    - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.50.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
  - 112.50.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
  - 112.50.c.9.B: explain how regional changes in the environment may have global effects.
  - 112.50.c.9.C: examine how natural processes such as succession and feedback loops can restore habitats and ecosystems.
  - 112.50.c.9.D: describe how temperature inversions have short-term and long-term effects, including El Niño and La

Niña oscillations, ice cap and glacial melting, and changes in ocean surface temperatures.

- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
  - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
- 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
  - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
  - 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
  - 112.49.c.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
- 112.49.c.6: Science concepts. The student knows the evidence for the formation and composition of Earth's atmosphere, hydrosphere, biosphere, and geosphere. The student is expected to:
  - 112.49.c.6.C: evaluate the evidence for changes to the chemical composition of Earth's atmosphere prior to the introduction of oxygen.
  - 112.49.c.6.D: evaluate scientific hypotheses for the origin of life through abiotic chemical processes.
- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.A: analyze how energy transfer through Milankovitch cycles, albedo, and differences in atmospheric and surface absorption are mechanisms of climate.
  - 112.49.c.11.B: describe how Earth's atmosphere is chemically and thermally stratified and how solar radiation interacts with the layers to cause the ozone layer, the jet stream, Hadley and Ferrel cells, and other atmospheric phenomena.

- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - S112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:

- 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.11.B: identify the components and properties of soils.
- 127.30.d.11.c: describe the basic structure and functions of plant parts.
- 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.

- Advanced Plant and Soil Science
  - 127.58.d.10: The student develops a knowledge of plant anatomy and functions. The student is expected to:
    - 127.58.d.10.A: describe the structure and function of plant parts, including roots, stems, leaves, flowers, fruits, and seeds.
  - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
    - 127.58.d.12.A: explain soil formation.
    - 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.
  - 127.58.d.13: The student maps the process of soil formation influenced by weathering, including erosion processes due to water, wind, and mechanical factors influenced by climate. The student is expected to:
    - 127.58.d.13.A: illustrate the role of weathering in soil formations.
  - 127.58.d.14: The student explains the relationship of biotic and abiotic factors within habitats and ecosystems and their effects on plant ecology. The student is expected to:
    - 127.58.d.14.F: describe potential positive and negative impacts of human activity such as pest control, hydroponics, monoculture planting, and sustainable agriculture on ecosystems.

**PLANT NUTRIENT DEFICIENCIES**

English Language Arts and Reading

- English I

- 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.G: evaluate details read to determine key ideas.
        - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- <u>English III</u>
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.

        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.G: evaluate details read to understand key ideas.
        - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
        - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
    - 127.30.d.11.B: identify the components and properties of soils.
    - 127.30.d.11.C: describe the basic structure and functions of plant parts.
    - 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.

- Advanced Plant and Soil Science
    - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
    - 127.58.d.11: The student develops an understanding of plant physiology and nutrition. The student is expected to:

- 127.58.d.11.B: describe the role of mineral nutrition in the soil for plant development.
- 127.58.d.11.C: identify the essential nutrients in soil.

**PLASMID PROBLEM SOLVING**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
    - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.37.c.4.F: make inferences and use evidence to support understanding.
    - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
        - 110.38.c.4.F: make inferences and use evidence to support understanding.
        - 110.38.c.4.G: evaluate details read to understand key ideas.
        - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

        - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
            - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
            - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
    - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
        - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
    - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
        - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.

        - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
        - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
        - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
    - 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
        - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.
        - 112.42.c.5.B: compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.
    - 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
        - 112.42.c.11.B: investigate and explain the role of enzymes in facilitating cellular processes.

<u>Agriculture, Food, and Natural resources</u>

- <u>Advanced Plant and Soil Science</u>
    - 127.58.d.9: The student identifies how plants grow and how specialized cells, tissues, and organs develop. The student is expected to:
        - 127.58.d.9.A: describe the unique structure and function of organelles in plant cells.

- 127.58.d.9.B: explain the growth and division of plant cells.
- 127.58.d.9.C: compare cells from different parts of the plant, including roots, stems, flowers, and leaves, to show specialization of structures and functions.
- 127.58.d.9.D: illustrate the levels of cellular organization in plants.

- 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
  - 127.58.d.15.A: analyze the genetics and evolution of various crops.

**POPULATIONS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.

        - 110.36.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.A: establish purpose for reading assigned and self-selected texts.
        - 110.37.c.4.F: make inferences and use evidence to support understanding.
        - 110.37.c.4.G: evaluate details read to determine key ideas.

- 110.37.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.A: establish purpose for reading assigned and self-selected texts.
    - 110.38.c.4.F: make inferences and use evidence to support understanding.

        - 110.38.c.4.G: evaluate details read to understand key ideas.
        - 110.38.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.A: establish purpose for reading assigned and self-selected texts.

- 110.39.c.4.F: make inferences and use evidence to support understanding.
- 110.39.c.4.G: evaluate details read to analyze key ideas.
- 110.39.c.4.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, annotating, and using outside sources when understanding breaks down.

▪ 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through

established research methodologies from a variety of valid sources, including technology. The student is expected to:

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics

- Algebra 1
  - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
- Mathematical Models with Applications
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
    - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
- Advanced Quantitative Reasoning
  - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.

- 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.

- Statistics
  - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
    - 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
    - 111.47.c.1.C: select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
    - 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
  - 111.47.c.5: Probability and random variables. The student applies the mathematical process standards to connect probability and statistics. The student is expected to:
    - 111.47.c.5.A: determine probabilities, including the use of a two-way table.

Science

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.

    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.G: predict changes that may occur in an ecosystem if genetic diversity is increased or decreased.
- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems.
    - 112.50.c.6.E: analyze and evaluate the economic significance and interdependence of resources within the local environmental system.
    - 112.50.c.6.F: evaluate the impact of waste management methods such as reduction, reuse, recycling, upcycling, and composting on resource availability in the local environment.
- 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
    - 112.50.c.8.A: compare exponential and logistical population growth using graphical representations.
    - 112.50.c.8.B: identify factors that may alter carrying capacity such as disease; natural disaster; available food, water, and livable space; habitat fragmentation; and periodic changes in weather.
    - 112.50.c.8.C: calculate changes in population size in ecosystems.
    - 112.50.c.8.D: analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.

- 112.50.c.12.B: evaluate the economic impacts of individual actions on the environment such as overbuilding, habitat destruction, poaching, and improper waste disposal.
- 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
    - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions
    - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.
    - 112.49.c.12.D: analyze recent global ocean temperature data to predict the consequences of changing ocean temperature on evaporation, sea level, algal growth, coral bleaching, and biodiversity.
  - 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:

- 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources:
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
    - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

**PROPERTIES OF SOILS**

English language Arts and Reading

- English I

        - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
            - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
        - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.36.c.4.F: make inferences and use evidence to support understanding.
            - 110.36.c.4.G: evaluate details read to determine key ideas.
        - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
            - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
    - <u>English II</u>
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.F: make inferences and use evidence to support understanding.
        - 110.37.c.4.G: evaluate details read to determine key ideas.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.38.c.4.F: make inferences and use evidence to support understanding.
        - 110.38.c.4.G: evaluate details read to understand key ideas.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
        - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.F: make inferences and use evidence to support understanding.
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
    - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.42.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.

        - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
    - 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
        - 112.42.c.12.A: analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals.
        - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.
- Environmental System:
    - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
        - 112.50.c.2.A: identify advantages and limitations of models such as their size, properties, and materials

    - 112.50.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
    - 112.50.c.2.C: use mathematical calculations to assess quantitative relationships in data.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.50.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
    - 112.50.c.9.C: examine how natural processes such as succession and feedback loops can restore habitats and ecosystems.
- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
    - 112.50.c.12.E: argue from evidence whether or not a healthy economy and a healthy environment are mutually exclusive.

        - 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
            - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.
            - 112.50.c.13.B: evaluate the goals and effectiveness of past and present international agreements such as the environmental Antarctic Treaty System, the Montreal Protocol, the Kyoto Protocol, and the Paris Climate Accord.
    - Earth Systems Science:
        - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
            - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
            - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
            - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
        - 112.49.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
            - 112.49.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
            - 112.49.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
            - 112.49.c.2.C: use mathematical calculations to assess quantitative relationships in data.

- 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
  - 112.49.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
  - 112.49.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.49.c.6: Science concepts. The student knows the evidence for the formation and composition of Earth's atmosphere, hydrosphere, biosphere, and geosphere. The student is expected to:
  - 112.49.c.6.A: describe how impact accretion, gravitational compression, radioactive decay, and cooling differentiated proto-Earth into layers.
  - 112.49.c.6.B: evaluate the roles of volcanic outgassing and water bearing comets in developing Earth's atmosphere and hydrosphere.
  - 112.49.c.6.C: evaluate the evidence for changes to the chemical composition of Earth's atmosphere prior to the introduction of oxygen.
  - 112.49.c.6.D: evaluate scientific hypotheses for the origin of life through abiotic chemical processes.
  - 112.49.c.6.E: describe how the production of oxygen by photosynthesis affected the development of the atmosphere, hydrosphere, geosphere, and biosphere.

- 112.49.c.11: Science concepts. The student knows that dynamic and complex interactions among Earth's systems produce climate and weather. The student is expected to:
  - 112.49.c.11.A: analyze how energy transfer through Milankovitch cycles, albedo, and differences in atmospheric and surface absorption are mechanisms of climate.
  - 112.49.c.11.B: describe how Earth's atmosphere is chemically and thermally stratified and how solar radiation interacts with the layers to cause the ozone layer, the jet stream, Hadley and Ferrel cells, and other atmospheric phenomena.
  - 112.49.c.11.C: model how greenhouse gases trap thermal energy near Earth's surface.
- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.A: evaluate the impact on humans of natural changes in Earth's systems such as earthquakes, tsunamis, and volcanic eruptions.
  - 112.49.c.12.C: analyze the natural and anthropogenic factors that affect the severity and frequency of extreme weather events and the hazards associated with these events.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.11.B: identify the components and properties of soils.

- Range Ecology and Management
  - 130.19.c.5: The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:
    - 130.19.c.5.A: discuss components of rangeland with an emphasis on soil.
    - 130.19.c.5.B: determine components of rangeland with an emphasis on topography.
    - 130.19.c.5.C: classify range sites by soil properties.
- Advances Plant and Soil Science
  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
  - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
    - 127.58.d.12.A: explain soil formation.
    - 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.
    - 127.58.d.12.C: identify and classify soil orders.
    - 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.
    - 127.58.d.12.G: practice and explain soil evaluations related to experiential activities such as land judging.
    - 127.58.d.12.H: evaluate and determine soil health through soil testing.
    - 127.58.d.12.I: analyze concepts of soil ecology.

TEXAS FARM BUREAU®

**SAY CHEESE FOR PROTEIN**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.F: make inferences and use evidence to support understanding.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.

        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.37.c.4.F: make inferences and use evidence to support understanding.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.38.c.4.F: make inferences and use evidence to support understanding.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.F: make inferences and use evidence to support understanding.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

TEXAS FARM BUREAU®

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS
Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
  - 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

importance of scientific research and innovation on society. The student is expected to:

- 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

- 112.42.c.5: Biological Structures, Functions, and Processes: The student knows that biological structures at multiple levels of organization perform specific functions and processes that affect life. The student is expected to:
  - 112.42.c.5.A: relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.

        - 112.50.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
        - 112.50.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
    - 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.50.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
    - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
        - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
        - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
- Chemistry:
    - 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.43.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.43.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.43.c.1.F: organize quantitative and qualitative data using oral or written lab reports, labeled drawings,

particle diagrams, charts, tables, graphs, journals, summaries, or technology-based reports.
- 112.43.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

- 112.43.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.43.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
  - 112.43.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
  - 112.43.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.43.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.43.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.43.c.12: Science concepts. The student understands and applies various rules regarding acids and bases. The student is expected to:
  - 112.43.c.12.D: predict products in acid-base reactions that form water.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.

- 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
- 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
- 127.30.d.1.D: identify employers' legal responsibilities and expectations, including appropriate work habits and ethical conduct.
- 127.30.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
- 127.30.d.1.F: identify training, education, and certification requirements for occupational choices in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
  - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:

- 127.30.d.13.A: identify food products and processing systems.
- 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
- 127.30.d.13.D: discuss current issues in food production.
- 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

- Food Technology and Safety
  - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
    - 127.34.d.3.A: define the terms used in food technology.
  - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
    - 127.34.d.10.A: describe methods of preparing milk for processing.
    - 127.34.d.10.B: evaluate methods of processing milk and dairy products.
    - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.
    - 127.34.d.10.D: process, classify, and grade cheese.
- Food Processing
  - 127.35.d.3: The student understands consumer satisfaction issues. The student is expected to:
    - 127.35.d.3.A: practice equipment maintenance and sanitation procedures.
    - 127.35.d.3.B: explain the factors that affect food palatability.
  - 127.35.d.4: The student understands quality control issues in food processing. The student is expected to:
    - 127.35.d.4.A: practice procedures relating to the safe manufacture of foods through hygienic food handling and processing.

**SILKY GENES**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.A: develop questions for formal and informal inquiry.
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.37.c.11.A: develop questions for formal and informal inquiry.
        - 110.37.c.11.E: locate relevant sources.
        - 110.37.c.11.F: synthesize information from a variety of sources.
        - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.A: develop questions for formal and informal inquiry.
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.39.c.11.A: develop questions for formal and informal inquiry.
    - 110.39.c.11.E: locate relevant sources.
    - 110.39.c.11.F: synthesize information from a variety of sources.
    - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

TEXAS FARM BUREAU®

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Math – No Math TEKS
Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.42.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:
    - 112.42.c.2.A: identify advantages and limitations of models such as their size, properties, and materials.
    - 112.42.c.2.B: analyze data by identifying significant statistical features, patterns, sources of error, and limitations.
  - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
    - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.

Agriculture, Food, and Natural Resources

- Advanced Animal Science
  - 127.52.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The
    - 127.52.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
  - 127.52.d.12: The student understands the principles of molecular genetics and heredity. The student is expected to:
    - 127.52.d.12.C: identify the parts of the nucleotide and differentiate between the nucleotides found in deoxyribonucleic acid (DNA) and ribonucleic acid (RNA).
    - 127.52.d.12.D: explain the functions of DNA and RNA.

**SOIL AND SUSTAINABILITY**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.37.c.11.F: synthesize information from a variety of sources.
        - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.38.c.11.F: synthesize information from a variety of sources.
        - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English IV
    - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making,

and evaluating the work of the group based on agreed-upon criteria.

- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.F: synthesize information from a variety of sources.
  - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics

- Algebra 1

        - 111.39.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.39.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.39.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.39.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Mathematical Models with Applications
        - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
            - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.
    - Advanced Quantitative Reasoning
        - 111.44.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.44.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
            - 111.44.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
            - 111.44.c.1.E: create and use representations to organize, record, and communicate mathematical ideas.
    - Statistics
        - 111.47.c.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- 111.47.c.1.A: apply mathematics to problems arising in everyday life, society, and the workplace.
- 111.47.c.1.B: use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- 111.47.c.1.C: select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
- 111.47.c.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

▪ 111.47.c.5: Probability and random variables. The student applies the mathematical process standards to connect probability and statistics. The student is expected to:
- 111.47.c.5.A: determine probabilities, including the use of a two-way table.

Science

○ Biology:

▪ 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.

▪ 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:

- 112.42.c.13.B: analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models.
- 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
  - 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.A: identify native plants and animals within a local ecosystem and compare their roles to those of plants and animals in other biomes, including aquatic, grassland, forest, desert, and tundra.
    - 112.50.c.5.C: evaluate the effects of fluctuations in abiotic factors on local ecosystems and local biomes.
    - 112.50.c.5.D: measure the concentration of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impacts on an ecosystem.
    - 112.50.c.5.E: use models to predict how the introduction of an invasive species may alter the food chain and affect existing populations in an ecosystem.
    - 112.50.c.5.F: use models to predict how species extinction may alter the food chain and affect existing populations in an ecosystem.
    - 112.50.c.5.G: predict changes that may occur in an ecosystem if genetic diversity is increased or decreased.
  - 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:

    - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
    - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
    - 112.50.c.6.D: identify how changes in limiting resources such as water, food, and energy affect local ecosystems.
- 112.50.c.7: Science concepts. The student knows the sources and flow of energy through an environmental system. The student is expected to:
    - 112.50.c.7.D: identify and describe how energy is used, transformed, and conserved as it flows through ecosystems.
- 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
    - 112.50.c.8.B: identify factors that may alter carrying capacity such as disease; natural disaster; available food, water, and livable space; habitat fragmentation; and periodic changes in weather.
- 112.50.c.9: Science concepts. The student knows that environments change naturally. The student is expected to:
    - 112.50.c.9.C: examine how natural processes such as succession and feedback loops can restore habitats and ecosystems.
- 112.50.c.10: Science concepts. The student knows how humans impact environmental systems through emissions and pollutants. The student is expected to:
    - 112.50.c.10.A: identify sources of emissions in air, soil, and water, including point and nonpoint sources.
    - 112.50.c.10.B: distinguish how an emission becomes a pollutant based on its concentration, toxicity, reactivity, and location within the environment.
    - 112.50.b.10.C: investigate the effects of pollutants such as chlorofluorocarbons, greenhouse gases, pesticide runoff, nuclear waste, aerosols, metallic ions, and heavy metals, as well as thermal, light, and noise pollution.

- 112.50.b.10.D: evaluate indicators of air, soil, and water quality against regulatory standards to determine the health of an ecosystem.
- 112.50.b.10.E: distinguish between the causes and effects of global warming and ozone depletion, including the causes, the chemicals involved, the atmospheric layer, the environmental effects, the human health effects, and the relevant wavelengths on the electromagnetic spectrum (IR and UV).

▪ 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
- 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
- 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
- 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.

▪ 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
- 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
- 112.50.c.12.B: evaluate the economic impacts of individual actions on the environment such as overbuilding, habitat destruction, poaching, and improper waste disposal.

o <u>Chemistry:</u>

▪ 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies

problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.43.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.43.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.43.c.9: Science concepts. The student understands how matter is accounted for in chemical reactions. The student is expected to:
    - 112.43.c.9.B: differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.B: identify the components and properties of soils.
- Range Ecology and Management

- 127.38.d.4: The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:
  - 127.38.d.4.A: discuss components of rangeland with an emphasis on soil.
  - 127.38.d.4.B: determine components of rangeland with an emphasis on topography.

- Advances Plant and Soil Science
  - 127.58.d.2: The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 127.58.d.2.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
    - 127.58.d.2.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.
    - 127.58.d.2.D: use appropriate tools such as microscopes, measuring equipment, sensors, plant propagation tools, soil testing kits, and calculators.
    - 127.58.d.2.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 127.58.d.2.F: organize quantitative and qualitative data using graphs and charts.
    - 127.58.d.2.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
    - 127.58.d.12.A: explain soil formation.
    - 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.

TEXAS FARM BUREAU®

**Stacking Up Milk and Milk Substitutes**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.G: evaluate details read to determine key ideas.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
  - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:
    - 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
    - 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

TEXAS FARM BUREAU®

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.
- Food Technology and Safety
  - 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
    - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.
- Advanced Animal Science
  - 127.52.d.16: The student explores methods of marketing animals and animal products. The student is expected to:
    - 127.52.d.16.B: describe methods of marketing animal products such as farmers market, direct sales, wholesale, and retail.
    - 127.52.d.16.C: research and evaluate the effectiveness of various strategies and campaigns to market animal products based on consumption patterns and consumer preferences.

- 127.52.d.16.D: research and evaluate the effectiveness of various labeling options to market animal products such as organic, farm-raised, hormone-free, cage-free, grass-fed, antibiotic-free, and non-GMO labels based on consumption patterns and consumer preferences.

**STRAWBERRY BREEDING AND GENETICS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.F: synthesize information from a variety of sources.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.F: synthesize information from a variety of sources.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.38.c.11.F: synthesize information from a variety of sources.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.39.c.11.F: synthesize information from a variety of sources.

Social Studies
- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- World Geography Studies
  - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
    - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS
Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.

    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.B: relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content.
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.

- 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and

animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.11.D: identify and use techniques for plant germination, growth, and development.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.

- Advanced Animal Science
  - 127.52.d.12: The student understands the principles of molecular genetics and heredity. The student is expected to:
    - 127.52.d.12.C: identify the parts of the nucleotide and differentiate between the nucleotides found in deoxyribonucleic acid (DNA) and ribonucleic acid (RNA).
    - 127.52.d.12.D: explain the functions of DNA and RNA.
- Advanced Plant and Soil Science
  - 127.58.d.15: The student evaluates components of plant science as they relate to crop production and advancements. The student is expected to:
    - 127.58.d.15.A: analyze the genetics and evolution of various crops.
  - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
    - 127.85.19.d.B: apply principles of genetics and plant breeding to plant production.

**SURROUNDED BY PLANTS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
Social Studies

- World Geography Studies
  - 113.43.d.4: The student understands the patterns and characteristics of major landforms, climates, and ecosystems of Earth and the interrelated processes that produce them. The student is expected to:
    - 113.43.d.4.A: explain how elevation, latitude, wind systems, ocean currents, position on a continent, and mountain barriers influence temperature, precipitation, and distribution of climate regions.
    - 113.43.d.4.B: describe different landforms such as plains, mountains, and islands and the physical processes that cause their development.
    - 113.43.d.4.C: explain the influence of climate on the distribution of biomes in different regions.
  - 113.43.d.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.d.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

- 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
  - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
- 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
  - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States; and
  - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.D: discuss current issues in food production.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:
  - 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
  - 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.

- Advanced Plant and Soil Science
  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
  - 127.58.d.8: The student understands interrelationships between plants, soil, and people in historical and current contexts. The student is expected to:
    - 127.58.d.8.D: investigate and explain how plants have shaped major world economies.
  - 127.58.d.14: The student explains the relationship of biotic and abiotic factors within habitats and ecosystems and their effects on plant ecology. The student is expected to:
    - 127.58.d.14.A: identify and define plant populations, ecosystems, communities, and biomes.

**SUSTAINABLE SOMALI SAMBUSAS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.36.c.4.E: create mental images to deepen understanding.
- 110.36.c.4.G: evaluate details read to determine key ideas.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Math TEKS
No Science TEKS
Social Studies

- World Geography Studies
  - 113.43.d.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.d.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.
  - 113.43.d.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.d.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.
  - 113.43.d.17: Culture. The student understands the distribution, patterns, and characteristics of different cultures. The student is expected to:
    - 113.43.d.17.A: describe and compare patterns of culture such as language, religion, land use, education, and customs that make specific regions of the world distinctive.
    - 113.43.d.17.D: evaluate the experiences and contributions of diverse groups to multicultural societies.

- 113.43.c.18: Culture. The student understands the ways in which cultures change and maintain continuity. The student is expected to:
  - 113.43.d.18.D: evaluate the spread of cultural traits to find examples of cultural convergence and divergence such as the spread of democratic ideas, language, foods, technology, or global sports.

Agriculture, Food, and Natural

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.

**THE BIG DEAL ABOUT BIG AG**

TEXAS FARM BUREAU®

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.36.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.37.c.5.F: respond using acquired content and academic vocabulary as appropriate.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.38.c.5.F: respond using acquired content and academic vocabulary as appropriate.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.

- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.39.c.5.F: respond using acquired content and academic vocabulary as appropriate.

No Math TEKS
No Science TEKS
Social Studies

- United States History Studies Since 1877
  - 113.41.d.2: History. The student understands traditional historical points of reference in U.S. history from 1877 to the present. The student is expected to:
    - 113.41.d.2.B: explain the significance of the following years as turning points: 1898 (Spanish-American War), 1914-1918 (World War I), 1929 (the Great Depression begins), 1939-1945 (World War II), 1957 (Sputnik launch ignites U.S.-Soviet space race), 1968 (Martin Luther King Jr. assassination), 1969 (U.S. lands on the moon), 1991 (Cold War ends), 2001 (terrorist attacks on World Trade Center and the Pentagon), and 2008 (election of first black president, Barack Obama).
  - 113.41.d.3: History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to:
    - 113.41.d.3.B: analyze economic issues such as industrialization, the growth of railroads, the growth of labor unions, farm issues, the cattle industry boom, the growth of entrepreneurship, and the pros and cons of big business.

- 113.41.d.14: Geography. The student understands the relationship between population growth and the physical environment. The student is expected to:
  - 113.41.d.14.A: identify the effects of population growth and distribution on the physical environment.
- 113.41.d.17: Economics. The student understands the economic effects of government policies from World War II through the present. The student is expected to:
  - 113.41.d.17.A: describe the economic effects of World War II on the home front such as mobilization, the end of the Great Depression, rationing, and increased opportunity for women and minority employment.
  - 113.41.d.17.B: identify the causes of prosperity in the 1950s, including the Baby Boom and the impact of the GI Bill (Servicemen's Readjustment Act of 1944), and the effects of prosperity in the 1950s such as increased consumption and the growth of agriculture and business.

- 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
  - 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
  - 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.
  - 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.
- 113.41.d.27: Science, technology, and society. The student understands the influence of scientific discoveries, technological innovations, and the free enterprise system on the standard of living in the United States. The student is expected to:

- 113.41.d.27.A: analyze how scientific discoveries, technological innovations, space exploration, and the application of these by the free enterprise system improve the standard of living in the United States, including changes in transportation and communication; and
- 113.41.d.27.B: describe how the free enterprise system drives technological innovation and its application in the marketplace such as cell phones, inexpensive personal computers, and global positioning products.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and

animal welfare issues impact agriculture, food, and natural resources industries.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.

- Advanced Plant and Soil Science
  - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
    - 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.
    - 127.58.d.12.E: describe the application of soil mechanics to buildings, landscapes, and crop production.
    - 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.
  - 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
    - 127.58.d.16.A: summarize and evaluate methods of land use and management.

**THE CARBON CYCLE AND CLIMATE SMART AGRICULTURE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.36.c.4.G: evaluate details read to determine key ideas.
    - English II
        - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
            - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS

Science

- Biology
    - 112.42.c.13: Science concepts--interdependence within environmental systems. The student knows that interactions at various levels of organization occur within an ecosystem to maintain stability. The student is expected to:
        - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.
- Environmental Systems
    - 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
        - 112.50.c.5.A: identify native plants and animals within a local ecosystem and compare their roles to those of plants and animals in other biomes, including aquatic, grassland, forest, desert, and tundra.
        - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.

No Social Studies TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
        - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
        - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
        - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
        - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
        - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.58.d.11.C: identify the essential nutrients in soil.
        - 127.58.d.11.D: describe the role of macronutrients and micronutrients in plants.
- Advanced Plant and Soil Science
    - 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:

- 127.58.d.12.D: explain methods of soil conservation such as crop rotation, mulching, terracing, cover cropping, and contour plowing.
- 127.58.d.12.E: describe the application of soil mechanics to buildings, landscapes, and crop production.
- 127.58.d.12.F: research and explain soil management practices such as tillage trials and sustainable soil management practices.

▪ 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
- 127.58.d.16.A: summarize and evaluate methods of land use and management.
- 127.58.d.16.C: explore and describe conservation practices such as rainwater collection, water-conserving irrigation systems, and use of biofuels.
- 127.58.d.16.E: debate the impact of human activity and technology on soil health and plant productivity.

**THE CATTLE DRIVE AND WESTWARD EXPANSION**

<u>English Language Arts and Reading</u>

○ <u>English I</u>

▪ 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses

metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.37.c.4.G: evaluate details read to determine key ideas.
- 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.37.c.11.E: locate relevant sources.
  - 110.37.c.11.F: synthesize information from a variety of sources.
  - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward

goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
  - 110.38.c.4.G: evaluate details read to understand key ideas.
- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

        - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

No Math TEKS
No Science TEKS
Social Studies

- United States History Studies Since 1877

- 113.41.d.3: History. The student understands the political, economic, and social changes in the United States from 1877 to 1898. The student is expected to:
  - 113.41.d.3.B: analyze economic issues such as industrialization, the growth of railroads, the growth of labor unions, farm issues, the cattle industry boom, the growth of entrepreneurship, and the pros and cons of big business.
- 113.41.d.12: Geography. The student understands the impact of geographic factors on major events. The student is expected to analyze the impact of physical and human geographic factors on the Klondike Gold Rush, the Panama Canal, the Dust Bowl, and the levee failure in New Orleans after Hurricane Katrina.
- 113.41.d.13: Geography. The student understands the causes and effects of migration and immigration on American society. The student is expected to:
  - 113.41.d.13.A: analyze the causes and effects of changing demographic patterns resulting from migration within the United States, including western expansion, rural to urban, the Great Migration, and the Rust Belt to the Sun Belt.
- 113.41.d.14: Geography. The student understands the relationship between population growth and the physical environment. The student is expected to:
  - 113.41.d.14.A: identify the effects of population growth and distribution on the physical environment.
- 113.41.d.15: Economics. The student understands domestic and foreign issues related to U.S. economic growth from the 1870s to 1920. The student is expected to:
  - 113.41.d.15.A: describe how the economic impact of the Transcontinental Railroad and the Homestead Act contributed to the close of the frontier in the late 19th century.
- 113.41.d.24: Culture. The student understands the relationship between the arts and the times during which they were created. The student is expected to:
  - 113.41.d.24.A: describe how the characteristics of and issues in U.S. history have been reflected in various genres of art, music, film, and literature.
- 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:

- 113.41.d.26.A: explain the effects of scientific discoveries and technological innovations such as electric power, telephone and satellite communications, petroleum-based products, steel production, and computers on the economic development of the United States.
- 113.41.d.26.B: explain how specific needs result in scientific discoveries and technological innovations in agriculture, the military, and medicine.

- 113.41.d.27: Science, technology, and society. The student understands the influence of scientific discoveries, technological innovations, and the free enterprise system on the standard of living in the United States. The student is expected to:
  - 113.41.d.27.A: analyze how scientific discoveries, technological innovations, space exploration, and the application of these by the free enterprise system improve the standard of living in the United States, including changes in transportation and communication.
- 113.41.d.29: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.41.d.29.A: create written, oral, and visual presentations of social studies information using effective communication skills, including proper citations and avoiding plagiarism.
- 113.41.d.30: Social studies skills. The student uses geographic tools to collect, analyze, and interpret data. The student is expected to:
  - 113.41.d.30.A: create a visual representation of historical information such as thematic maps, graphs, and charts.
  - 113.41.d.30.B: pose and answer questions about geographic distributions and patterns shown on maps, graphs, charts, and available databases.

<u>Agriculture, Food, and Natural Resources</u>

- <u>Principles of Agriculture, Food, and Natural Resources</u>
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:

        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
        - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
        - 127.30.d.11.C: describe the basic structure and functions of plant parts.
    - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
        - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
        - 127.30.d.12.B: analyze the roles and how animals benefit the agriculture industry.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
- Livestock and Poultry Production
    - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
    - 127.49.d.4: The student analyzes the history, domestication, and selection of livestock and poultry. The student is expected to:
        - 127.49.d.4.A: research and describe the history, domestication, and evolution of livestock and poultry species.
    - 127.49.d.9: The student analyzes the management skills needed for livestock and poultry production. The student is expected to:
        - 127.49.d.9.A: identify tools and equipment for safe handling and restraining of livestock and poultry and

select the appropriate tools or equipment for such tasks and purposes.
- 127.49.d.10.E: explain the use of technology such as aircraft, robotics, and smart irrigation in modern livestock and poultry production.

**THE COLUMBIAN EXCHANGE OF OLD AND NEW WORLD FOODS**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.37.c.4.G: evaluate details read to determine key ideas.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.G: evaluate details read to understand key ideas.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
Social Studies

- World History Studies
  - 113.42.d.1: History. The student understands traditional historical points of reference in world history. The student is expected to:
    - 113.42.d.1.D: identify major causes and describe the major effects of the following important turning points in world history from 1450 to 1750: the rise of the Ottoman

Empire, the influence of the Ming dynasty on world trade, European exploration and the Columbian Exchange, European expansion, and the Renaissance and the Reformation.

- 113.42.d.7: History. The student understands the causes and impact of increased global interaction from 1450 to 1750. The student is expected to:
  - 1137.42.d.7.B: explain the impact of the Columbian Exchange.

- World Geography Studies
  - 113.43.c.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.c.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.
  - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.c.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
    - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.

- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.C: describe the basic structure and functions of plant parts.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.

**THE GEOGRAPHY OF THANKSGIVING DINNER**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.

- 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Math TEKS
No Science TEKS
Social Studies

- World History Studies
  - 113.42.d.1: History. The student understands traditional historical points of reference in world history. The student is expected to:
    - 113.42.d.1.D: identify major causes and describe the major effects of the following important turning points in world history from 1450 to 1750: the rise of the Ottoman Empire, the influence of the Ming dynasty on world trade, European exploration and the Columbian Exchange, European expansion, and the Renaissance and the Reformation.
  - 113.42.d.7: History. The student understands the causes and impact of increased global interaction from 1450 to 1750. The student is expected to:
    - 1137.42.d.7.B: explain the impact of the Columbian Exchange.
- World Geography Studies
  - 113.43.c.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.c.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.
  - 113.43.c.11: Economics. The student understands how geography influences economic activities. The student is expected to:
    - 113.43.c.11.B: identify the factors affecting the location of different types of economic activities, including

subsistence and commercial agriculture, manufacturing, and service industries.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.

**THE GREEN REVOLUTION**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English III

        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
            - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
            - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
            - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- United States History Studies Since 1877
  - 113.41.d.6: History. The student understands significant events, social issues, and individuals of the 1920s. The student is expected to:
    - 113.41.d.6.B: analyze the impact of significant individuals such as Henry Ford, Marcus Garvey, and Charles A. Lindbergh.
  - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies
  - 113.42.d.27: Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies from 1750 to the present. The student is expected to:
    - 113.42.d.27.E: identify the contributions of significant scientists and inventors such as Marie Curie, Thomas Edison, Albert Einstein, Louis Pasteur, and James Watt.
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.E: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea,

summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections between historical events over time.
        - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World Geography Studies
    - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.43.d.21.D: analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, drawing inferences and conclusions, and developing connections over time.
        - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- Economics with Emphasis on the Free Enterprise System and Its Benefits
    - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
        - 113.31.d.21.A: analyze economic information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.

- 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

- 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

- Ethnic Studies: African American Studies
  - 113.51.d.16: Science, technology, and society. The student understands how African American achievements in science and technology have contributed to economic and social development in the United States. The student is expected to:
    - 113.51.d.16.C: describe the contributions of significant African American individuals to science, philosophy, mathematics, and technology such as Benjamin Banneker, George Washington Carver, Granville Woods, Mary Jackson, Katherine Johnson, Henrietta Lacks, Dorothy Vaughan, Mae Jemison, and Neil deGrasse Tyson.

Mathematics – No Math TEKS

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
  - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
  - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
  - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
  - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
  - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

- Aquatic Science:
  - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.47.c.14: Science concepts. The student understands how human activities impact aquatic environments. The student is expected to:
  - 112.47.c.14.A: analyze the cumulative impact of human population growth on an aquatic ecosystem.
  - 112.47.c.14.B: predict effects of chemical, organic, physical, and thermal changes due to humans on the living and nonliving components of an aquatic ecosystem.
  - 112.47.c.14.C: investigate the role of humans in unbalanced systems involving phenomena such as invasive species, fish farming, cultural eutrophication, or red tides.
  - 112.47.c.14.D: analyze and discuss how human activities such as fishing, transportation, dams, and recreation influence aquatic environments.
  - 112.47.c.14.E: describe the impact such as costs and benefits of various laws and policies such as The Endangered Species Act, right of capture laws, or Clean Water Act on aquatic systems.
  - 112.47.c.14.F: analyze the purpose and effectiveness of human efforts to restore aquatic ecosystems affected by human activities.

- Environmental System:
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data

tables, digital tools, diagrams, scientific drawings, and student-prepared models.

- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
  - 112.50.c.6.A: compare and contrast land use and management methods and how they affect land attributes such as fertility, productivity, economic value, and ecological stability.
  - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.
  - 112.50.c.6.F: evaluate the impact of waste management methods such as reduction, reuse, recycling, upcycling, and composting on resource availability in the local environment.
- 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
  - 112.50.c.8.D: analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes.
- 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
  - 112.50.c.11.A: evaluate the negative effects of human activities on the environment, including overhunting, overfishing, ecotourism, all-terrain vehicles, and personal watercraft.
  - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
  - 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.

- 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
  - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
  - 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.
- 112.50.c.13: Science concepts. The student knows how legislation mediates human impacts on the environment. The student is expected to:
  - 112.50.c.13.A: describe past and present state and national legislation, including Texas automobile emissions regulations, the National Park Service Act, the Clean Air Act, the Clean Water Act, the Soil and Water Resources Conservation Act, and the Endangered Species Act.

- Earth Systems Science:
  - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
  - 112.49.c.9: Science concepts. The student knows that the lithosphere continuously changes as a result of dynamic and complex interactions among Earth's systems. The student is expected to:

- 112.49.c.9.B: investigate and model how surface water and ground water change the lithosphere through chemical and physical weathering and how they serve as valuable natural resources.

- 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.D: analyze recent global ocean temperature data to predict the consequences of changing ocean temperature on evaporation, sea level, algal growth, coral bleaching, and biodiversity.
  - 112.49.c.12.E: predict how human use of Texas's naturally occurring resources such as fossil fuels, minerals, soil, solar energy, and wind energy directly and indirectly changes the cycling of matter and energy through Earth's systems.
  - 112.49.c.12.F: explain the cycling of carbon through different forms among Earth's systems and how biological processes have caused major changes to the carbon cycle in those systems over Earth's history.
- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:

- 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
- 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
- 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
- 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
- 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
- 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.

▪ 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
- 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.

o <u>Advanced Plant and Soil Science</u>

▪ 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
- 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.
- 127.58.d.19.B: apply principles of genetics and plant breeding to plant production.
- 127.58.d.19.C: illustrate the development of new crop varieties that are developed over time.

TEXAS FARM BUREAU®

**THE ROLE OF WOMEN IN AGRICULTURE**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Math TEKS
No Science TEKS
Social Studies

- World Geography Studies
  - 113.43.d.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.d.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks,

political units, river systems, and religion that constitute a region.

- 113.43.d.11: Economics. The student understands how geography influences economic activities. The student is expected to:
  - 113.43.d.11.B: identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.
- 113.43.d.17: Culture. The student understands the distribution, patterns, and characteristics of different cultures. The student is expected to:
  - 113.43.d.17.c: compare economic, political, or social opportunities in different cultures for underrepresented populations such as women and ethnic and religious minorities.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.

- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.

**The Science of GMOs**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- World History Studies
  - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
- World Geography Studies

        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - Economics with Emphasis on the Free Enterprise System and Its Benefits
        - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.

Mathematics – No Math TEKS
Science

- Biology:
    - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
        - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
        - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
        - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.
    - 112.42.c.3.C: engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.C: research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.
- 112.42.c.7: Mechanisms of Genetics: The student knows the role of nucleic acids in gene expression. The student is expected to:
    - 112.42.c.7.A: identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA.
    - 112.42.c.7.B: describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA).
    - 112.42.c.7.C: identify and illustrate changes in DNA and evaluate the significance of these changes.
    - 112.42.c.7.D: discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices.
- 112.42.c.8: Mechanisms of Genetics: The student knows the role of nucleic acids and the principles of inheritance and variation of traits in Mendelian and non-Mendelian genetics. The student is expected to:
    - 112.42.c.8.A: analyze the significance of chromosome reduction, independent assortment, and crossing over

during meiosis in increasing diversity in populations of organisms that reproduce sexually.

- 112.42.c.10: Biological Evolution. The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple mechanisms. The student is expected to:
  - 112.42.c.10.A: analyze and evaluate how natural selection produces change in populations and not in individuals.
  - 112.42.c.10.B: analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success.
  - 112.42.c.10.C: analyze and evaluate how natural selection may lead to speciation.
  - 112.42.c.10.D: analyze evolutionary mechanisms other than natural selection, including genetic drift, gene flow, mutation, and genetic recombination, and their effect on the gene pool of a population.
- 112.42.c.11: Biological Structures, Functions, and Processes. Science concepts--biological structures, functions, and processes. The student knows the significance of matter cycling, energy flow, and enzymes in living organisms. The student is expected to:
  - 112.42.c.11.A: explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
  - 112.42.c.13.D: explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

- 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
    - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.

**THE WATER FOOTPRINT OF FOOD**

English Language Arts and Reading

- English I

- 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
  - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
  - 110.36.c.4.E: create mental images to deepen understanding.
  - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
  - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.37.c.11.E: locate relevant sources.
    - 110.37.c.11.F: synthesize information from a variety of sources.

- 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
  - 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages

in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:

- 110.38.c.11.E: locate relevant sources.
- 110.38.c.11.F: synthesize information from a variety of sources.
- 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.39.c.4.G: evaluate details read to analyze key ideas.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.

        - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
    - 113.42.d.29: Social studies skills. The student uses geographic skills and tools to collect, analyze, and interpret data. The student is expected to:
        - 113.42.d.29.A: create and interpret thematic maps, graphs, and charts to demonstrate the relationship between geography and the historical development of a region or nation.
        - 113.42.d.29.B: analyze and compare geographic distributions and patterns in world history shown on maps, graphs, charts, and models.
- World Geography Studies
    - 113.43.c.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
        - 113.43.c.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion that constitute a region.

Mathematics – No Math TEKS

Science – No Science TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.D: discuss current issues in food production.
- 127.30.d.15: The student explains the principles of environmental and natural resources. The student is expected to:

- 127.30.d.15.A: identify natural resources of economic importance to Texas agriculture.
- 127.30.d.15.B: explain the relationship between agriculture and environmental and natural resources.
- 127.30.d.15.E: identify and compare energy and water conservation methods.

- Livestock and Poultry Production
  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
  - 127.49.d.10: The student examines the interrelationship of the factors impacting livestock and poultry production operations. The student is expected to:
    - 127.49.d.10.A: research and explain livestock and poultry biosecurity and waste management practices.
    - 127.49.d.10.C: analyze and discuss environmental regulations, governmental regulations, and animal welfare policies related to livestock and poultry production.
- Advanced Plant and Soil Science
  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
  - 127.58.d.14: The student explains the relationship of biotic and abiotic factors within habitats and ecosystems and their effects on plant ecology. The student is expected to:
    - 127.58.d.14.F: describe potential positive and negative impacts of human activity such as pest control, hydroponics, monoculture planting, and sustainable agriculture on ecosystems.

- 127.58.d.16: The student describes the relationship between resources within environmental systems. The student is expected to:
  - 127.58.d.16.B: identify sources, quality, and conservation of water in plant production.
  - 127.58.d.16.C: explore and describe conservation practices such as rainwater collection, water-conserving irrigation systems, and use of biofuels.
  - 127.58.d.16.D: analyze and evaluate the economic significance and interdependence of components of the environment.
  - 127.58.d.16.E: debate the impact of human activity and technology on soil health and plant productivity.

**TRACING THE AGRICULTURAL SUPPLY CHAIN**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds

to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
    - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- Economics with Emphasis on the Free Enterprise System and Its Benefits
  - 113.31.d.22: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.31.d.22.A: use social studies terminology correctly.
- United States History Since 1877

        - 113.41.d.26: Science, technology, and society. The student understands the impact of science, technology, and the free enterprise system on the economic development of the United States. The student is expected to:
            - 113.41.d.26.C: describe the effect of technological innovations in the workplace such as assembly line manufacturing and robotics.
        - 113.41.d.29: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.41.d.29.B: use social studies terminology correctly.
    - World History Studies
        - 113.42.d.27: Science, technology, and society. The student understands how major scientific and mathematical discoveries and technological innovations have affected societies from 1750 to the present. The student is expected to:
            - 113.42.d.27.D: explain the role of telecommunication technology, computer technology, transportation technology, and medical advancements in developing the modern global economy and society.
        - 113.42.d.30: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.42.d.30.A: use social studies terminology correctly.
    - World Geography Studies
        - 113.43.d.22: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.43.d.22.C: use social studies terminology correctly.

Mathematics – No Math TEKS
Science

- Environmental System:
    - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
        - 112.50.c.12.A: evaluate cost-benefit trade-offs of commercial activities such as municipal development, food production, deforestation, over-harvesting, mining, and use of renewable and non-renewable energy sources.
        - 112.50.c.12.B: evaluate the economic impacts of individual actions on the environment such as

overbuilding, habitat destruction, poaching, and improper waste disposal.
- 112.50.c.12.C: analyze how ethical beliefs influence environmental scientific and engineering practices such as methods for food production, water distribution, energy production, and the extraction of minerals.

Agriculture, Food, and Natural Resources
- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.C: identify and explain significant historical and current events that have impacted the agriculture industry.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:

        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
    - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
        - 127.30.d.13.A: identify food products and processing systems.
        - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
        - 127.30.d.13.D: discuss current issues in food production.
- Agribusiness Management and Marketing
    - 127.46.d.4: The student recognizes and explains roles within organizations, inter-organizational systems, and the larger environment. The student is expected to:
        - 127.46.d.4.A: identify how organizational systems affect performance and the quality of products and services related to agriculture, food, and natural resources.
        - 127.46.d.4.B: research and describe the domestic and global context of agricultural industries and careers.
        - 127.46.d.4.C: describe the nature and types of agribusiness organizations.
        - 127.46.d.4.D: identify the sectors of agribusiness such as production, processing, and distribution.
- Food Technology and Safety
    - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
        - 127.34.d.2.A: explain the significance of food science systems.
        - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
    - 130.15.c.6: The student demonstrates an understanding of the trends and issues important to careers in the food science industry by comparing and contrasting issues affecting the food science industry, including biotechnology, employment, safety, environmental, and animal welfare issues. The student is expected to:
        - 130.15.c.6.B: identify issues affecting food science.
        - 130.15.c.6.E: apply economic principles such as supply, demand, and profit to food science systems.

- Food Processing
  - 127.35.d.2: The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:
    - 127.35.d.2.A: explain the importance of the food processing industry in the free enterprise system.
    - 127.35.d.2.B: explain trends in the consumption of food products.

**ULTRA HIGH PRESSURE TREATMENT**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Math TEKS

Science

- Chemistry
  - 112.43.c.13: Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:

- 112.43.c.13.A: explain everyday examples that illustrate the four laws of thermodynamics.

No Social Studies TEKS

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.E: describe and demonstrate characteristics of good citizenship in the agricultural workplace, including promoting stewardship, community leadership, civic engagement, and agricultural awareness and literacy.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
    - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
    - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
    - 127.30.d.13.D: discuss current issues in food production.
    - 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.
- Food Technology and Safety

- 127.34.d.10: The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:
  - 127.34.d.10.A: describe methods of preparing milk for processing.
  - 127.34.d.10.B: evaluate methods of processing milk and dairy products.
  - 127.34.d.10.C: identify dairy products, including cultured milk products and frozen dairy desserts.

**UNDERSTANDING BACTERIA**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- English III

        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
            - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
            - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

No Social Studies TEKS
No Math TEKS
Science

- Biology
    - 112.42.c.1: scientific and engineering practices. the student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory,

and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. the student is expected to:

- 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.42.c.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems.
- 112.42.c.1.E: collect quantitative data using the international system of units (si) and qualitative data as evidence.
- 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

▪ 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

- 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.A: identify career development, education, and entrepreneurship opportunities in agriculture, food, and natural resources.
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.1.C: describe and demonstrate appropriate personal and occupational safety and health practices for the workplace.

- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
  - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations.
- 127.30.d.9: The student applies a scientific process to agriculture, food, and natural resources topics. The student is expected to:
  - 127.30.d.9.A: identify and select an important agricultural issue, question, or principle.
  - 127.30.d.9.B: develop and test a hypothesis for the selected issue, question, or principle.
  - 127.30.d.9.C: collect and analyze data for the selected agricultural issue, question, or principle.
  - 127.30.d.9.D: present findings and conclusions based on research performed using scientific practices.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
  - 127.30.d.13.C: compare various food labels.
  - 127.30.d.13.D: discuss current issues in food production.

- 127.30.d.13.E: identify and use tools, equipment, and personal protective equipment common to food products and processing systems.

- Food Technology and Safety
  - 127.34.d.4: The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:
    - 127.34.d.4.D: assess conditions with regard to safety and health.

**WEIGHING IN ON EGG LABELS, SUPPLY, AND DEMAND**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
  - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.

- 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.36.c.11.E: locate relevant sources.
  - 110.36.c.11.F: synthesize information from a variety of sources.
  - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
    - 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
  - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.37.c.4.G: evaluate details read to determine key ideas.
  - 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

        - 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.37.c.11.E: locate relevant sources.
        - 110.37.c.11.F: synthesize information from a variety of sources.
        - 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- English III
    - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
        - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
    - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
        - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.38.c.4.G: evaluate details read to understand key ideas.

- 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

        - 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
        - 110.39.c.4.G: evaluate details read to analyze key ideas.
    - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
        - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
        - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
        - 110.39.c.11.E: locate relevant sources.
        - 110.39.c.11.F: synthesize information from a variety of sources.
        - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

No Math TEKS
No Science TEKS
Social Studies

- Economics with Emphasis on the Free Enterprise System and Its Benefits
    - 113.31.d.2: Economics. The student understands the interaction of supply, demand, and price. The student is expected to:
        - 113.31.d.2.A: understand the effect of changes in price on the quantity demanded and quantity supplied.
        - 113.31.d.2.B: identify the non-price determinants that create changes in supply and demand, which result in a new equilibrium price.
        - 113.31.d.2.C: interpret a supply-and-demand graph using supply-and-demand schedules.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources

- 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
  - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
- 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
  - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
  - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.5.E: identify and discuss major innovations in the fields of agriculture, food, and natural resources.
  - 127.30.d.5.F: describe how emerging technologies such as online mapping systems, drones, and robotics impact agriculture, food, and natural resources.
  - 127.30.d.5.G: compare how different issues such as biotechnology, employment, safety, environmental, and animal welfare issues impact agriculture, food, and natural resources industries.
- 127.30.d.12: The student develops technical knowledge and skills related to animal systems. The student is expected to:
  - 127.30.d.12.A: define animal science and analyze the relevance of animal selection, production, and marketing in the industry.
- 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
  - 127.30.d.13.A: identify food products and processing systems.
  - 127.30.d.13.B: identify emerging technologies and trends in domestic and global food production.
  - 127.30.d.13.C: compare various food labels.

- 127.30.d.13.D: discuss current issues in food production.

- Food Technology and Safety
  - 127.34.d.8: The student describes the processing, packaging, quality analysis, and marketing of eggs, poultry, and fish and their by-products. The student is expected to:
    - 127.34.d.8.F: describe marketing procedures for eggs, poultry, fish, and seafood.
- Livestock and Poultry Production
  - 127.49.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.49.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills used in livestock and poultry production.
  - 127.49.d.4: The student analyzes the history, domestication, and selection of livestock and poultry. The student is expected to:
    - 127.49.d.4.A: research and describe the history, domestication, and evolution of livestock and poultry species.
  - 127.49.d.8: The student understands how livestock and poultry are affected by pests and diseases. The student is expected to:
    - 127.49.d.8.A: identify and describe how bacteria, fungi, viruses, genetics, and nutrition affect livestock and poultry health.
  - 127.49.d.9: The student analyzes the management skills needed for livestock and poultry production. The student is expected to:
    - 127.49.d.9.A: identify tools and equipment for safe handling and restraining of livestock and poultry and select the appropriate tools or equipment for such tasks and purposes.
    - 127.49.d.9.B: identify types and essential features of facilities for livestock and poultry such as housing, veterinary, and reproduction facilities.

- 127.49.d.10: The student examines the interrelationship of the factors impacting livestock and poultry production operations. The student is expected to:
  - 127.49.d.10.A: research and explain livestock and poultry biosecurity and waste management practices.
  - 127.49.d.10.C: analyze and discuss environmental regulations, governmental regulations, and animal welfare policies related to livestock and poultry production.

**WHAT'S ON THE NUTRITION FACTS LABEL?**

English Language Arts and Reading

- English I
  - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. the student is expected to:
    - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
  - 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- English II
  - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
    - 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.

        - 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.37.c.4.G: evaluate details read to determine key ideas.
    - English III
        - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.38.c.4.G: evaluate details read to understand key ideas.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
        - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
            - 110.39.c.4.G: evaluate details read to analyze key ideas.

No Math TEKS
No Science TEKS
No Social Studies TEKS
Health Education

- Health I
    - 115.38.c.6: Healthy eating and physical activity--food and beverage daily recommendations. The student analyzes and

applies healthy eating strategies for enhancing and maintaining personal health throughout the lifespan. The student is expected to:

- 115.38.c.6.A: evaluate food labels and menus to determine the nutritional content and value of foods and make healthy decisions about daily caloric intake.
- 115.38.c.6.B: compare and contrast the impact of healthy and unhealthy dietary practices.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.D: identify issues that may impact agriculture, food, and natural resources systems, including related domestic and global systems, now and in the future.
  - 127.30.d.13: The student describes the principles of food products and processing systems. The student is expected to:
    - 127.30.d.13.A: identify food products and processing systems.
    - 127.30.d.13.D: discuss current issues in food production.
- Food Technology and Safety
  - 127.34.d.2: The student explains the impact of food science systems. The student is expected to:
    - 127.34.d.2.B: define trends in food production, world population, and supply and demand for food products.
  - 127.34.d.3: The student analyzes the nutritive value of food constituents. The student is expected to:
    - 127.34.d.3.A: define the terms used in food technology.
    - 127.34.d.3.B: compare and contrast the nutritive value of food groups.

- 127.34.d.5: The student identifies safety and governmental regulations involved in the processing and labeling of foods. The student is expected to:
    - 127.34.d.5.B: describe packaging, labeling, and storage requirements for red meat, poultry, and fish.
    - 127.34.d.5.D: compare and contrast packaging requirements.

**WHAT'S YOUR PH?**

English Language Arts and Reading

- English I
    - 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
        - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
    - 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
        - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
        - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- English II
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

○ <u>English III</u>

▪ 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
- 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

▪ 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:

- 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

        - 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
    - English IV
        - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
            - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
        - 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
            - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
            - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Social Studies

- United States History Studies Since 1877
    - 113.41.d.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.41.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- World History Studies

        - 113.42.d.28: Social studies skills. The student understands how historians use historiography to interpret the past and applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.42.d.28.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
        - 113.42.c.31: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.42.d.31.B: use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
    - World Geography Studies
        - 113.43.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.43.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
    - Economics with Emphasis on the Free Enterprise System and Its Benefits
        - 113.31.d.21: Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
            - 113.31.d.21.F: formulate and communicate visually, orally, or in writing a claim supported by evidence and reasoning for an intended audience and purpose.
        - 113.31.d.23: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

TEXAS FARM BUREAU®

Mathematics

- Mathematical Models with Applications
  - 111.43.c.9: Mathematical modeling in social sciences. The student applies mathematical processes and mathematical models to analyze data as it applies to social sciences. The student is expected to:
    - 111.43.c.9.A: interpret information from various graphs, including line graphs, bar graphs, circle graphs, histograms, scatterplots, dot plots, stem-and-leaf plots, and box and whisker plots, to draw conclusions from the data and determine the strengths and weaknesses of conclusions.

Science

- Biology:
  - 112.42.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.42.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.42.c.1.D: use appropriate tools such as microscopes, slides, Petri dishes, laboratory glassware, metric rulers, digital balances, pipets, filter paper, micropipettes, gel electrophoresis and polymerase chain reaction (PCR) apparatuses, microcentrifuges, water baths, incubators, thermometers, hot plates, data collection probes, test tube holders, lab notebooks or journals, hand lenses, and models, diagrams, or samples of biological specimens or structures.
    - 112.42.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.42.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.

    - 112.42.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
- 112.42.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.42.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.42.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.42.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.42.c.12: Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:
    - 112.42.c.12.B: explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.
- 112.42.c.13: Interdependence Within Environmental Systems. The student knows that organisms have an organizational structure and variations can influence survival of populations. The student is expected to:
    - 112.42.c.13.A: investigate and evaluate how ecological relationships, including predation, parasitism, commensalism, mutualism, and competition, influence ecosystem stability.
    - 112.42.c.13.B: analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models.
    - 112.42.c.13.C: explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles.

- Aquatic Science:
  - 112.47.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.47.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.47.c.1.D: use appropriate tools such as Global Positioning System (GPS), Geographic Information System (GIS), weather balloons, buoys, water testing kits, meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, field guides, water quality test kits or probes, 30-meter tape measures, tarps, ripple tanks, trowels, screens, buckets, sediment samples equipment, cameras, flow meters, cast nets, kick nets, seines, computer models, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, and field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, fish tanks and associated supplies, and hydrometers; 112.47.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.47.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.47.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

- 112.47.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.47.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.47.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society.
  - 112.47.c.3.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.47.c.7: Science Concept: The student knows about the interdependence and interactions that occur in aquatic environments. The student is expected to:
  - 112.47.c.7.C: identify variables that affect the solubility of carbon dioxide and oxygen in water.
- 112.47.c.8: Science concepts. The student conducts short term and long-term studies on local aquatic environments. Local natural environments are to be preferred over artificial or virtual environments. The student is expected to:
  - 112.47.c.8.B: collect and analyze pH, salinity, temperature, mineral content, nitrogen compounds, dissolved oxygen, and turbidity data periodically, starting with baseline measurements.
- 112.47.c.14: Science concepts. The student understands how human activities impact aquatic environments. The student is expected to:
  - 112.47.c.14.A: analyze the cumulative impact of human population growth on an aquatic ecosystem.
  - 112.47.c.14.B: predict effects of chemical, organic, physical, and thermal changes due to humans on the living and nonliving components of an aquatic ecosystem.

- <u>Environmental System:</u>
  - 112.50.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain

phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.50.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.50.c.1.D: use appropriate tools such as meter sticks, metric rulers, pipettes, graduated cylinders, standard laboratory glassware, balances, timing devices, pH meters or probes, various data collecting probes, thermometers, calculators, computers, internet access, turbidity testing devices, hand magnifiers, work and disposable gloves, compasses, first aid kits, binoculars, field guides, water quality test kits or probes, soil test kits or probes, 30 meter tape measures, tarps, shovels, trowels, screens, buckets, rock and mineral samples equipment, air quality testing devices, cameras, flow meters, Global Positioning System (GPS) units, Geographic Information System (GIS) software, computer models, densiometers, spectrophotometers, stereomicroscopes, compound microscopes, clinometers, field journals, various prepared slides, hand lenses, hot plates, Petri dishes, sampling nets, waders, leveling grade rods (Jason sticks), protractors, inclination and height distance calculators, samples of biological specimens or structures, core sampling equipment, and kick nets.
- 112.50.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.50.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.50.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

▪ 112.50.c.2: Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

    - 112.50.c.2.D: evaluate experimental and engineering designs.
- 112.50.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.50.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
- 112.50.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
    - 112.50.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
- 112.50.c.5: Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
    - 112.50.c.5.A: identify native plants and animals within a local ecosystem and compare their roles to those of plants and animals in other biomes, including aquatic, grassland, forest, desert, and tundra.
    - 112.50.c.5.B: explain the cycling of water, phosphorus, carbon, silicon, and nitrogen through ecosystems, including sinks, and the human interactions that alter these cycles using tools such as models.
    - 112.50.c.5.C: evaluate the effects of fluctuations in abiotic factors on local ecosystems and local biomes.
    - 112.50.c.5.D: measure the concentration of dissolved substances such as dissolved oxygen, chlorides, and nitrates and describe their impacts on an ecosystem.
    - 112.50.c.5.G: predict changes that may occur in an ecosystem if genetic diversity is increased or decreased.
- 112.50.c.6: Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:
    - 112.50.c.6.B: relate how water sources, management, and conservation affect water uses and quality.

        - 112.50.c.6.C: document the use and conservation of both renewable and non-renewable resources as they pertain to sustainability.
    - 112.50.c.8: Science concepts. The student knows the relationship between carrying capacity and changes in populations and ecosystems. The student is expected to:
        - 112.50.c.8.A: compare exponential and logistical population.
        - 112.50.c.8.D: analyze and make predictions about the impact on populations of geographic locales due to diseases, birth and death rates, urbanization, and natural events such as migration and seasonal changes.
    - 112.50.c.11: Science concepts. The student understands how individual and collective actions impact environmental systems. The student is expected to:
        - 112.50.c.11.B: evaluate the positive effects of human activities on the environment, including habitat restoration projects, species preservation efforts, nature conservancy groups, game and wildlife management, and ecotourism.
        - 112.50.c.11.C: research the advantages and disadvantages of "going green" such as organic gardening and farming, natural methods of pest control, hydroponics, xeriscaping, energy-efficient homes and appliances, and hybrid cars.
    - 112.50.c.12: Science concepts. The student understands how ethics and economic priorities influence environmental decisions. The student is expected to:
        - 112.50.c.12.D: discuss the impact of research and technology on social ethics and legal practices in situations such as the design of new buildings, recycling, or emission standards.
- <u>Earth Systems Science:</u>
    - 112.49.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

- 112.49.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
- 112.49.c.1.D: use appropriate tools such as a drawing compass, magnetic compass, bar magnets, topographical and geological maps, satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), hand lenses, and fossil and rock sample kits.
- 112.49.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 112.49.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
- 112.49.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

▪ 112.49.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.49.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.

▪ 112.49.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - 112.49.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

▪ 112.49.c.12: Science concepts. The student understands how Earth's systems affect and are affected by human activities, including resource use and management. The student is expected to:
  - 112.49.c.12.F: explain the cycling of carbon through different forms among Earth's systems and how biological

processes have caused major changes to the carbon cycle in those systems over Earth's history.

- 112.49.c.13: Science concepts. The student explores global policies and careers related to the life cycles of Earth's resources. The student is expected to:
  - 112.49.c.13.A: analyze the policies related to resources from discovery to disposal, including economics, health, technological advances, resource type, concentration and location, waste disposal and recycling, mitigation efforts, and environmental impacts.

- Chemistry:
  - 112.43.c.1: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 112.43.c.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 112.43.c.1.D: use appropriate tools such as Safety Data Sheets (SDS), scientific or graphing calculators, computers and probes, electronic balances, an adequate supply of consumable chemicals, and sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, and burettes.
    - 112.43.c.1.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
    - 112.43.c.1.F: organize quantitative and qualitative data using scatter plots, line graphs, bar graphs, charts, data tables, digital tools, diagrams, scientific drawings, and student-prepared models.
    - 112.43.c.1.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.
  - 112.43.c.3: The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

        - 112.43.c.3.A: develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories.
    - 112.43.c.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
        - 112.43.c.4.A: analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.
    - 112.43.c.12: Science concepts. The student understands and applies various rules regarding acids and bases. The student is expected to:
        - 112.43.c.12.D: predict products in acid-base reactions that form water.
        - 112.43.c.12.E: define pH and calculate the pH of a solution using the hydrogen ion concentration.

Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
    - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
        - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
    - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
        - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
        - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
    - 127.30.d.8: The student demonstrates skills related to agribusiness, leadership, and communications. The student is expected to:
        - 127.30.d.8.A: demonstrate written and oral communication skills appropriate for formal and informal

situations such as prepared and extemporaneous presentations.

- 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
  - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
  - 127.30.d.11.B: identify the components and properties of soils.

- Advanced Plant and Soil Science
  - 127.58.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.58.d.1.A: identify career and entrepreneurship opportunities for a chosen occupation in the field of plant science and develop a plan for obtaining the education, training, and certifications required.
    - 127.58.d.1.B: model professionalism by continuously exhibiting appropriate work habits, solving problems, taking initiative, communicating effectively, listening actively, and thinking critically.
  - 127.58.d.2: Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:
    - 127.58.d.2.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations.
    - 127.58.d.2.B: apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems.
    - 127.58.d.2.C: use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards.

- 127.58.d.2.D: use appropriate tools such as microscopes, measuring equipment, sensors, plant propagation tools, soil testing kits, and calculators.
- 127.58.d.2.E: collect quantitative data using the International System of Units (SI) and qualitative data as evidence.
- 127.58.d.2.F: organize quantitative and qualitative data using graphs and charts.
- 127.58.d.2.G: develop and use models to represent phenomena, systems, processes, or solutions to engineering problems.

▪ 127.58.d.12: The student analyzes soil science as it relates to plant and human activity. The student is expected to:
- 127.58.d.12.A: explain soil formation.
- 127.58.d.12.B: investigate and document the properties of soils, including texture, horizons, structure, color, parent materials, and fertility.
- 127.58.d.12.E: describe the application of soil mechanics to buildings, landscapes, and crop production.
- 127.58.d.12.G: practice and explain soil evaluations related to experiential activities such as land judging.
- 127.58.d.12.H: evaluate and determine soil health through soil testing.

**WHERE DOES IT GROW? THE SCIENCE OF CLIMATE AND FOOD**

English Language Arts and Reading

○ English I

▪ 110.36.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
- 110.36.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.36.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.36.c.1.C: give a presentation using informal, formal, and technical language effectively to meet the needs of audience, purpose, and occasion, employing eye contact,

speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.36.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.
- 110.36.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.36.c.4.E: create mental images to deepen understanding.
    - 110.36.c.4.G: evaluate details read to determine key ideas.
- 110.36.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.36.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
    - 110.36.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
    - 110.36.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.36.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
    - 110.36.c.11.E: locate relevant sources.
    - 110.36.c.11.F: synthesize information from a variety of sources.
    - 110.36.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- <u>English II</u>
    - 110.37.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.37.c.1.A: engage in meaningful and respectful discourse by listening actively, responding appropriately, and adjusting communication to audiences and purposes.
- 110.37.c.1.B: follow and give complex oral instructions to perform specific tasks, answer questions, or solve problems and complex processes.
- 110.37.c.1.C: give a formal presentation that incorporates a clear thesis and a logical progression of valid evidence from reliable sources and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
- 110.37.c.1.D: participate collaboratively, building on the ideas of others, contributing relevant information, developing a plan for consensus building, and setting ground rules for decision making.

▪ 110.37.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
- 110.37.c.4.E: make connections to personal experiences, ideas in other texts, and society.
- 110.37.c.4.G: evaluate details read to determine key ideas.

▪ 110.37.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
- 110.37.c.5.B: write responses that demonstrate understanding of texts, including comparing texts within and across genres.
- 110.37.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.37.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

▪ 110.37.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
- 110.37.c.11.E: locate relevant sources.
- 110.37.c.11.F: synthesize information from a variety of sources.

- 110.37.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English III
  - 110.38.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.38.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction and syntax.
    - 110.38.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.38.c.1.C: give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices and that employs eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.38.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.38.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:
    - 110.38.c.4.E: make connections to personal experiences, ideas in other texts, and society.
    - 110.38.c.4.G: evaluate details read to understand key ideas.
  - 110.38.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
    - 110.38.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.

- 110.38.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
- 110.38.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

- 110.38.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.38.c.11.E: locate relevant sources.
  - 110.38.c.11.F: synthesize information from a variety of sources.
  - 110.38.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- English IV
  - 110.39.c.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.39.c.1.A: engage in meaningful and respectful discourse when evaluating the clarity and coherence of a speaker's message and critiquing the impact of a speaker's use of diction, syntax, and rhetorical strategies.
    - 110.39.c.1.B: follow and give complex instructions, clarify meaning by asking pertinent questions, and respond appropriately.
    - 110.39.c.1.C: formulate sound arguments and present using elements of classical speeches such as introduction, first and second transitions, body, conclusion, the art of persuasion, rhetorical devices, employing eye contact, speaking rate such as pauses for effect, volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.
    - 110.39.c.1.D: participate collaboratively, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.
  - 110.39.c.4: Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to:

- 110.39.c.4.E: make connections to personal experiences, ideas in other texts, and society.
- 110.39.c.4.G: evaluate details read to analyze key ideas.

- 110.39.c.5: Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to:
  - 110.39.c.5.B: write responses that demonstrate analysis of texts, including comparing texts within and across genres.
  - 110.39.c.5.D: paraphrase and summarize texts in ways that maintain meaning and logical order.
  - 110.39.c.5.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.
- 110.39.c.11: Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to:
  - 110.39.c.11.E: locate relevant sources.
  - 110.39.c.11.F: synthesize information from a variety of sources.
  - 110.39.c.11.I: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Social Studies

- World History Studies
  - 113.42.d.29: Social studies skills. The student uses geographic skills and tools to collect, analyze, and interpret data. The student is expected to:
    - 113.42.d.29.A: create and interpret thematic maps, graphs, and charts to demonstrate the relationship between geography and the historical development of a region or nation.
    - 113.42.d.29.B: analyze and compare geographic distributions and patterns in world history shown on maps, graphs, charts, and models.
- World Geography Studies
  - 113.43.d.9: Geography. The student understands the concept of region as an area of Earth's surface with related geographic characteristics. The student is expected to:
    - 113.43.d.9.A: identify physical and/or human factors such as climate, vegetation, language, trade networks,

political units, river systems, and religion that constitute a region.

Mathematics – No Math TEKS
Science – No Science TEKS
Agriculture, Food, and Natural Resources

- Principles of Agriculture, Food, and Natural Resources
  - 127.30.d.1: The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
    - 127.30.d.1.B: identify and demonstrate interpersonal, problem-solving, and critical-thinking skills in agriculture, food, and natural resources.
  - 127.30.d.4: The student understands the agriculture industry in Texas and the United States. The student is expected to:
    - 127.30.d.4.A: identify top agricultural commodities, exports, and imports in Texas and the United States.
    - 127.30.d.4.B: identify regions of commodity production such as regions that produce livestock, corn, wheat, dairy products, and cotton and explain the correlation between the region and the commodity.
  - 127.30.d.5: The student explains the historical, current, and future significance of the agriculture, food, and natural resources industry. The student is expected to:
    - 127.30.d.5.A: define agriculture and identify the sectors of the agriculture industry.
    - 127.30.d.5.B: analyze the impact agriculture, food, and natural resources have on society.
  - 127.30.d.11: The student develops technical knowledge and skills related to plant and soil systems. The student is expected to:
    - 127.30.d.11.A: define plant and soil science and analyze the relevance of horticulture, agronomy, forestry, and floriculture.
- Energy and Natural Resource Technology
  - 127.32.d.3: The student discusses the importance and scope of natural resources. The student is expected to:
    - 127.32.d.3.A: identify various types of natural resources.
    - 127.32.d.3.B: discuss renewable and non-renewable energy resources and their impact on the environment.

        - 127.32.d.3.C: analyze the impacts of natural resources and their effects on the agricultural economy.
    - 127.32.d.7: The student explains the effects of natural resource use. The student is expected to:
        - 127.32.d.7.A: identify the progression of use of natural resources leading to environmental degradation.
        - 127.32.d.7.B: explain the impact of human population dynamics on the environment.
        - 127.32.d.7.C: discuss the abuse of natural resources; and
        - 127.32.d.7.D: communicate the environmental consequences of natural resource use such as the impact on living organisms.
- Advanced Energy and Natural Resource Technology
    - 127.33.d.3: The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:
        - 127.33.d.3.A: identify various types of natural resources.
        - 127.33.d.3.B: identify renewable, non-renewable, and sustainable energy resources and determine their availability.
- Horticultural Science
    - 127.54.d.4: The student understands the history and progression of the horticulture industry. The student is expected to:
        - 127.54.d.4.E: compare types of horticulture industries in the different regions of Texas.
    - 127.54.d.5: The student identifies plant structures and their functions and needs. The student is expected to:
        - 127.54.d.5.A: classify horticultural plants by their common and scientific names.
- Advanced Plant and Soil Science
    - 127.58.d.19: The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:
        - 127.58.d.19.A: describe the growth and development of major agricultural crops in Texas such as cotton, corn, sorghum, sugarcane, wheat, and rice.