TEXAS FARM BUREAU®

National Ag in the Classroom Lesson Matrix
TEKS Alignment: 3rd Grade – 5th Grade
***(Ctrl + click on the below lessons in the Table of Contents to view the alignment for each lesson)**

TEXAS FARM BUREAU®

A "SOUR" SUBJECT

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.B: write a response to a literary or informational text that demonstrates an understanding of a text;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.B: write responses that demonstrate understanding of texts, including comparing and contrasting ideas across a variety of sources;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.B: write responses that demonstrate understanding of texts, including comparing and contrasting ideas across a variety of sources;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.5.b.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:
    - 112.5.b.2.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.B: 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 to investigate STEM careers
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
- 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior

through migration and hibernation and plant responses through dormancy

- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
  - 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:

            - 112.6.b.4.B: 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 to investigate STEM careers
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
            - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
        - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
            - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
        - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.7.b.1.E: collect observations and measurements as evidence

        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.7.b.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:
        - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.7.b.4.B: 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 to investigate STEM careers
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.7.b.5.E: investigate how energy flows and matter cycles through systems and how matter is conserved;
    - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as

conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.

- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

Social Studies

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.15.B: create and interpret timelines;
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
  - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

A DAY WITHOUT AGRICULTURE

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.A: listen actively, ask relevant questions to clarify information, and make pertinent comments;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.A: listen actively, ask relevant questions to clarify information, and make pertinent comments;
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;

110.6.b.6.H: synthesize information to create new understanding;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.A: listen actively to interpret verbal and non-verbal messages, ask relevant questions, and make pertinent comments;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
  - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:

            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
        - 112.6.b.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
            - 112.6.b.8.B: explain reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities;
        - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
        - 112.7.b.12: Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

- 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem;

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.B: create and interpret timelines;
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
        - 113.16.c.8.A: describe how and why people have adapted to and modified their environment in the United States such as the use of human resources to meet basic needs;
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

A DAY WITHOUT DAIRY

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.7: 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:
        - 110.5.b.7.B: write a response to a literary or informational text that demonstrates an understanding of a text;
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:

            - 110.6.b.6.H: synthesize information to create new understanding;
        - 110.6.b.7: 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:
            - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.7: 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:
            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.5.b.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;
    - 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
        - 111.5.b.4.B: round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems;

- 111.5.b.8: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
    - 111.5.b.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals;
    - 111.5.b.8.B: solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals.

- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.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;
    - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
        - 111.6.b.4.G: round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers;
- 5th Grade:
    - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.7.b.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;
    - 111.7.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:
        - 111.7.b.2.C: round decimals to tenths or hundredths.
    - 111.7.b.9: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:

- 111.7.b.9.A: represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots;
- 111.7.b.9.C: solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
  - 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
  - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models

            - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
            - 112.5.b.4.B: 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 to investigate STEM careers
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
            - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
            - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.E: collect observations and measurements as evidence
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

        - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.6.b.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:
        - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.6.b.4.B: 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 to investigate STEM careers
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:

- 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.7.b.1.E: collect observations and measurements as evidence
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.7.b.4.B: 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 to investigate STEM careers

- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.7.b.5.E: investigate the flow of energy and cycling of matter through systems

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.15.B: create and interpret timelines;
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

- 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to

answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.

- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

A SEARCH FOR THE SOURCE

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and Engineering Practices: The student 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:
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.B: 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 to investigate STEM careers
  - 112.5.b.5: Recurring Themes and Concepts: The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 4th Grade:
  - 112.6.b.1: Scientific and Engineering Practices: The student 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:

            - 112.6.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.6.b.4: Organisms and Environments: The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.6.b.4.B: 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 to investigate STEM careers
        - 112.6.b.5: Recurring Themes and Concepts: The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:
            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
            - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.7.b.4: Organisms and Environments: The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.7.b.4.B: 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 to investigate STEM careers
        - 112.7.b.5: Recurring themes and concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:

- 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems.

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.15.c.22.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.
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.16.c.26.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.

ABRAHAM LINCOLN CLEARS A PATH: HIS AGRICULTURAL LEGACY

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

- 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
- 110.5.b.1.E: develop social communication such as conversing politely in all situations;

▪ 110.5.b.6: 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:

110.5.b.6.G: evaluate details read to determine key ideas;

- 4th Grade:
  - ▪ 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - ▪ 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
- 5th Grade:
  - ▪ 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - ▪ 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;

<u>Social Studies</u>

- 3rd Grade:
  - ▪ 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.b.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.b.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

AN APPLE A DAY KEEPS THE DOCTOR AWAY

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.1.E: develop social communication such as conversing politely in all situations;
  - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
  - 110.5.b.12: Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. wastudent uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to:
    - 110.5.b.12.B: compose informational texts, including brief compositions that convey information about a

topic, using a clear central idea and genre characteristics and craft;
- 110.5.b.12.C: compose argumentative texts, including opinion essays, using genre characteristics and craft;

- 110.5.b.13: 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:
  - 110.5.b.13.C: identify and gather relevant information from a variety of sources;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
  - 110.6.b.12: 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:
    - 110.6.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
    - 110.6.b.12.C: compose argumentative texts, including opinion essays, using genre characteristics and craft;
  - 110.6.b.13: 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:
        - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.12: 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:
        - 110.7.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
        - 110.7.b.12.C: compose argumentative texts, including opinion essays, using genre characteristics and craft;
    - 110.7.b.13: 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:
        - 110.7.b.13.C: identify and gather relevant information from a variety of sources;

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.15.F: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.b.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.b.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.21.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
  - 113.16.c.25.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.

Technology Applications

- 3rd Grade:
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

APPLE SCIENCE: COMPARING APPLES AND ONIONS

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:

- 110.5.b.6.H: synthesize information to create new understanding;

4th Grade:

- 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 110.6.b.6: 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:
  - 110.6.b.6.H: synthesize information to create new understanding;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence

- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
    - 112.5.b.11.B: explain why the conservation of natural resources is important
    - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence

- 112.6.b.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:
    - 112.6.b.2.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations

        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.
    - 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

        - 113.15.c.15.B: create and interpret timelines;
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;

AT HOME ON THE RANGE

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;

            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
            - 110.5.b.1.E: develop social communication such as conversing politely in all situations;
        - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
        - 110.5.b.6: 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:
            - 110.5.b.6.G: evaluate details read to determine key ideas;
            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.7: 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:
            - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
        - 110.6.b.6: 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:
            - 110.6.b.6.G: evaluate details read to determine key ideas;
            - 110.5.b.6.H: synthesize information to create new understanding;

- 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.5.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
    - 111.5.b.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;
- 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
- 111.5.b.4.A: solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;
- 111.5.b.4.G: use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
- 111.5.b.4.K: solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.

- 4th Grade:
  - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.6.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
    - 111.6.b.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;
  - 111.6.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:
    - 111.6.b.2.D: round whole numbers to a given place value through the hundred thousands place;
  - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:

- 111.6.b.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
- 111.6.b.4.D: use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
- 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.

- 5th Grade:
  - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.7.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
    - 111.7.b.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;
  - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.7.b.3.B: multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
    - 111.7.b.3.E: solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
    - 111.7.b.3.K: add and subtract positive rational numbers fluently;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:

            - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 4th Grade:
        - 112.6.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
            - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 5th Grade:
        - 112.7.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
            - 112.7.b.1.B: use scientific practices to plan and conduct descriptive and simple experimental investigations and use engineering practices to design solutions to problems;
            - 112.7.b.1.E: collect observations and measurements as evidence
        - 112.7.b.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:
            - 112.7.b.2.B: analyze data by identifying any significant features, patterns, or sources of error;

- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
- 112.7.b.12: Organisms and environments. The student knows that there are relations Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.B: predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.4: Geography. The student understands the concepts of location, distance, and direction on maps and globes. The student is expected to:
        - 113.14.c.4.C: identify, create, and interpret maps of places that contain map elements, including a title, compass rose, legend, scale, and grid system.
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.A: use social studies terminology correctly;
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.15.c.21.C: express ideas orally based on research and experiences;

- 5th Grade:
  - 113.16.c.7: Geography. The student understands the location and patterns of settlement and the geographic factors that influence where people live. The student is expected to:
    - 113.16.c.7.A: identify and describe the patterns of settlement such as rural, urban, and suburban;
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

BARTERING THROUGH THE SEASONS

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.7: 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:
        - 110.5.b.7.D: retell and paraphrase texts in ways that maintain meaning and logical order;
    - 110.5.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
        - 110.5.b.8.C: analyze plot elements, including the sequence of events, the conflict, and the resolution;
    - 110.5.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:
        - 110.5.b.9.C: discuss elements of drama such as characters, dialogue, setting, and acts;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;

        - 110.6.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
            - 110.6.b.8.C: analyze plot elements, including the rising action, climax, falling action, and resolution;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.7: 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:
            1107.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
        - 110.7.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
            110.7.b.8.C: analyze plot elements, including rising action, climax, falling action, and resolution;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.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:

112.5.b.2.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

  112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:

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

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

    112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;

  - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

    112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

  - 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:

    112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms

- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:

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

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

  112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;

- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
  - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.15.B: create and interpret timelines;
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

  113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
  - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.
- 5th Grade:
  - 113.16.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
    - 113.16.c.8.A: describe how and why people have adapted to and modified their environment in the United States such as the use of human resources to meet basic needs;
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

▪ 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
- 113.16.c.25.C: express ideas orally based on research and experiences;

113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

▪ 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
- 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.B: use various search strategies with adult assistance.
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to

analyze and transform data and make inferences to answer questions.

BEEF BASICS

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

Science

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.B: explain why the conservation of natural resources is important
        - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
        - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
    - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The

student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.

- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
    - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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.

BUILD A CALF WORKSHOP

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

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

- 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

▪ 110.5.b.6: 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:

110.5.b.6.G: evaluate details read to determine key ideas;

▪ 110.5.b.7: 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:

- 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
- 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

▪ 110.5.b.13: 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:

- 110.5.b.13.C: identify and gather relevant information from a variety of sources;
- 110.5.b.13.E: demonstrate understanding of information gathered;
- 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

○ 4th Grade:

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

- 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

▪ 110.6.b.6: 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:

            - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.7: 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:
            - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
            - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
        - 110.6.b.13: 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:
            - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
            - 110.6.b.13.E: identify primary and secondary sources;
            - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.7: 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:
            - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;
        - 110.7.b.13: 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:

- 110.7.b.13.C: identify and gather relevant information from a variety of sources;
- 110.7.b.13.E: demonstrate understanding of information gathered;
- 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Math</u>

- 3rd Grade:
  - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.5.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
- 4th Grade:
  - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.6.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
  - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.6.b.4.D: use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
    - 111.6.b.4.F: use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;
- 5th Grade:
  - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.7.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;

<u>Science</u>

- 4th Grade:

        - 112.6.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
            - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms
    - 5th Grade:
        - 112.7.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
            - 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;

        - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
            - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
    - 4th Grade:
        - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
    - 5th Grade:
        - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

BUILD IT BETTER

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:

        - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.7: 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:
        - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 110.5.b.13: 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:
        - 110.5.b.13.C: identify and gather relevant information from a variety of sources;
        - 110.5.b.13.E: demonstrate understanding of information gathered;
        - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.7: 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:
        - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

        - 110.6.b.13: 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:
            - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
            - 110.6.b.13.E: identify primary and secondary sources;
            - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.7: 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:
            - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;
        - 110.7.b.13: 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:
            - 110.7.b.13.C: identify and gather relevant information from a variety of sources;
            - 110.7.b.13.E: demonstrate understanding of information gathered;

- 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Math

- 4th Grade:
  - 111.6.b.8: Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:
    - 111.6.b.8.C: solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.
- 5th Grade:
  - 111.7.b.7: Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving measurement. The student is expected to solve problems by calculating conversions within a measurement system, customary or metric.

Social Studies

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

            - 113.15.c.21.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
        - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.15.c.22.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.
    - 5th Grade:
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
            - 113.16.c.25.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
        - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;

        - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
            - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
            - 3.126.8.c.5.B: use various search strategies with adult assistance.
        - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
    - 4th Grade:
        - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
        - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
    - 5th Grade:
        - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
        - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

BUNCHES OF BERRIES

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.13: 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:
        - 110.5.b.13.E: demonstrate understanding of information gathered;
        - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.13: 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:
    - 110.6.b.13.E: demonstrate understanding of information gathered;
      110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;
  - 110.7.b.13: 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:
    - 110.7.b.13.E: demonstrate understanding of information gathered;
    - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
  - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

            - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
            - 112.5.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
            - 112.6.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

            - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matte
            - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
            - 112.7.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;

- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.

- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.

- 5th Grade:

- 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

BY LAND, AIR, OR SEA

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;

- 110.5.b.7: 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:
  - 110.5.b.7.D: retell and paraphrase texts in ways that maintain meaning and logical order;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;
  - 110.7.b.7: 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:
    - 110.7.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
    - 112.5.b.11.B: explain why the conservation of natural resources is important
- 4th Grade
  - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 5th Grade
  - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.2: History. The student understands common characteristics of communities, past and present. The student is expected to:
    - 113.14.c.2.B: compare ways in which people in the local community and other communities meet their needs for government, education, communication, transportation, and recreation.
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

            - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
        - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
        - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.14.c.16.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.
    - 4th Grade:
        - 113.15.c.11: Economics. The student understands patterns of work and economic activities in Texas. The student is expected to:
            - 113.15.c.11.D: explain how developments in transportation and communication have influenced economic activities in Texas.
        - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
            - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
            - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
        - 113.16.c.22.C: explain how scientific discoveries and technological innovations in the fields of medicine, communication, and transportation have benefited individuals and society in the United States.
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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.

Technology Applications

- 3rd Grade:
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.B: use various search strategies with adult assistance.
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

CHEESEMAKING: FROM LIQUID TO SOLID

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.E: collect observations and measurements as evidence
  - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.5.b.4.B: 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 to investigate STEM careers

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.5.b.6: Matter and Energy: The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.5.b.6.B: describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container
    - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)
    - 112.5.b.6.D: demonstrate that materials can be combined based on their physical properties to create or modify objects such as building a tower or adding clay to sand to make a stronger brick and justify the selection of materials based on their physical properties

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society

            - 112.6.b.4.B: 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 to investigate STEM careers
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.6: Matter and Energy: The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
            - 112.6.b.6.A: classify and describe matter using observable physical properties, including temperature, mass, magnetism, relative density (the ability to sink or float in water), and physical state (solid, liquid, gas)
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.E: collect observations and measurements as evidence
        - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.17b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
            - 112.7.b.4.B: 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 to investigate STEM careers
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 112.7.b.6: Matter and Energy: The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.7.b.6.C: compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions

COLOR IN THE GARDEN

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;

5th Grade:

- 110.7.b.6: 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:

- 110.7.b.6.G: evaluate details read to determine key ideas;

Science

- 3rd Grade:
  - 112.5.b.10: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:
    - 112.5.b.10.B: investigate and explain how soils such as sand and clay are formed by weathering of rock and by decomposition of plant and animal remains

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect

relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

CORN, AN A-MAIZING PLANT: FOOD, FUEL, AND PLASTIC

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking

rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and

- 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
- 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

- 5th Grade:
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

<u>Science</u>

- 3rd Grade:
    - 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:

- 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)

- 4th Grade:
  - 112.6.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.6.b.6.B: investigate and compare a variety of mixtures, including solutions that are composed of liquids in liquids and solids in liquids
  - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
- 5th Grade:
  - 112.7.b.6: Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:
    - 112.7.b.6.C: compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions;

<u>Social Studies</u>

3rd Grade:

- 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 5th Grade:
  - 113.16.c.6: Geography. The student understands places and regions in the United States. The student is expected to:
    - 113.16.c.6.C: locate on a map important political features such as the five largest cities by population in the United States and the 50 states;
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

COTTON'S AMERICAN JOURNEY

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.13: 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:
    - 110.5.b.13.B: develop and follow a research plan with adult assistance;
    - 110.5.b.13.C: identify and gather relevant information from a variety of sources;

            - 110.5.b.13.E: demonstrate understanding of information gathered;
            - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.13: 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:
        - 110.6.b.13.B: develop and follow a research plan with adult assistance;
        - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
        - 110.6.b.13.E: demonstrate understanding of information gathered;
        - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.13: 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:
        - 110.7.b.13.B: develop and follow a research plan with adult assistance;
        - 110.7.b.13.C: identify and gather relevant information from a variety of sources;

- 110.7.b.13.E: demonstrate understanding of information gathered;
- 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Science</u>

- 3rd Grade:
  - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.5.b.4.B: 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 to investigate STEM careers
- 4th Grade
  - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.6.b.4.B: 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 to investigate STEM careers
- 5th Grade
  - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.7.b.4.B: 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 to investigate STEM careers

TEXAS FARM BUREAU®

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;

        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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.

CRACKING OPEN THE STORY OF NUTS

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.7: 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:
        - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 110.5.b.13: 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:
        - 110.5.b.13.C: identify and gather relevant information from a variety of sources;
        - 110.5.b.13.E: demonstrate understanding of information gathered;
        - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
- 110.6.b.7: 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:
    - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 110.6.b.13: 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:
    - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.6.b.13.E: identify primary and secondary sources;
    - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.7: 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:
        - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;
        - 110.7.b.13: 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:
            - 110.7.b.13.C: identify and gather relevant information from a variety of sources;
            - 110.7.b.13.E: demonstrate understanding of information gathered;
            - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Science</u>

- 3rd Grade:
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.14.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.14.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.5.b.4.B: 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 to investigate STEM careers
- 4th Grade:
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the

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

- 112.6.b.4.B: 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 to investigate STEM careers

- 5th Grade:
  - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.B: 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 to investigate STEM careers

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:

- 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of

problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
    - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
        - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
        - 3.126.8.c.5.B: use various search strategies with adult assistance.
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
    - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
    - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to

analyze and transform data and make inferences to answer questions.

CULTURES, FOOD, COMMUNITIES AROUND THE WORLD

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
    - 110.7.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;
    - 110.7.b.6.H: synthesize information to create new understanding;

Social Studies

- 3rd Grade:
    - 113.14.c.10: Culture. The student understands ethnic and/or cultural celebrations of the local community and other communities. The student is expected to:
        - 113.14.c.10.A: explain the significance of various ethnic and/or cultural celebrations in the local community and other communities;
        - 113.14.c.10.B: compare ethnic and/or cultural celebrations in the local community with other communities.
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.15.c.21.C: express ideas orally based on research and experiences;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.15.c.22.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.

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

TEXAS FARM BUREAU®

Science

- 3rd Grade:
  - 112.5.b.5: Recurring Themes and Concepts: The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.b: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
  - 112.5.b.11.: Matter and Its Properties: The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
- 4th Grade:
  - 112.6.b.5: Recurring Themes and Concepts: The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
  - 112.6.b.11.: Matter and Its Properties: The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 5th Grade:
  - 112.7.b.5: Recurring Themes and Concepts: The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems

Technology Applications

3rd Grade:

- 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
  - 3.126.8.c.5.B: use various search strategies with adult assistance.

        - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
    - 4th Grade:
        - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
    - 5th Grade:
        - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

DESKTOP GREENHOUSES

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.7: 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:

- 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
  - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
  - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:

- 110.7.b.6.G: evaluate details read to determine key ideas;
- 110.7.b.6.H: synthesize information to create new understanding;

- 110.7.b.7: 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:
  - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
      112.5.b.1.E: collect observations and measurements as evidence
  - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.E: collect observations and measurements as evidence
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

            - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.6.b.12: Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.7.b.1.B: use scientific practices to plan and conduct descriptive and simple experimental investigations and use engineering practices to design solutions to problems;
        - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:

- 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

DRONES IN HIGH-TECH FARMING

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.5.b.6: 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:

110.5.b.6.G: evaluate details read to determine key ideas;
110.5.b.6.H: synthesize information to create new understanding;

- 110.5.b.7: 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:
  110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and

110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

  - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.7: Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions. The student is expected to:
        - 112.5.b.7.A: demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls
- 4th Grade:
    - 112.6.b.7: Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions. The student is expected to plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance on an object.
- 5th Grade:
    - 112.7.b.7: Force, motion, and energy. The student knows the nature of forces and the patterns of their interactions. The student is expected to:
        - 112.16.b.7.B: design a simple experimental investigation that tests the effect of force on an object

in a system such as a car on a ramp or a balloon rocket on a string

Social Studies

- 3rd Grade:
  - 113.14.c.13: Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present. The student is expected to:
    - 113.14.c.13.B: describe the impact of scientific breakthroughs and new technology in computers, pasteurization, and medical vaccines on various communities.
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.18: Science, technology, and society. The student understands the impact of science and technology on life in Texas. The student is expected to:
    - 113.15.c.18.B: describe how scientific discoveries and innovations such as in aerospace, agriculture, energy, and technology have benefited individuals, businesses, and society in Texas.
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

- 113.15.c.21.C: express ideas orally based on research and experiences;

- 5th Grade:
  - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
    - 113.16.c.22.C: explain how scientific discoveries and technological innovations in the fields of medicine, communication, and transportation have benefited individuals and society in the United States.
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
        - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
    - 5th Grade:
        - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
        - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

EDIBLE NUMBERS

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.11: 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 uses appropriate conventions. The student is expected to:
        - 110.5.b.11.D: edit drafts using standard English conventions, including:
        - 110.5.b.11.D.i: complete simple and compound sentences with subject-verb agreement;

            - 110.5.b.11.D.ii: past, present, and future verb tense;
            - 110.5.b.11.D.iii: singular, plural, common, and proper nouns;
            - 110.5.b.11.D.iv: adjectives, including their comparative and superlative forms;
            - 110.5.b.11.D.v: adverbs that convey time and adverbs that convey manner;
            - 110.5.b.11.D.vi: prepositions and prepositional phrases;
            - 110.5.b.11.D.vii: pronouns, including subjective, objective, and possessive cases;
            - 110.5.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
            - 110.5.b.11.D.ix: capitalization of official titles of people, holidays, and geographical names and places;
            - 110.5.b.11.D.x: punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; and
            - 110.5.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;
        - 110.5.b.12: 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:
            - 110.5.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.11: 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 uses appropriate conventions. The student is expected to:
            - 110.6.b.11.D: edit drafts using standard English conventions, including:

- 110.6.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
- 110.6.b.11.D.ii: past tense of irregular verbs;
- 110.6.b.11.D.iii: singular, plural, common, and proper nouns;
- 110.6.b.11.D.iv: adjectives, including their comparative and superlative forms;
- 110.6.b.11.D.v: adverbs that convey frequency and adverbs that convey degree;
- 110.6.b.11.D.vi: prepositions and prepositional phrases;
- 110.6.b.11.D.vii: pronouns, including reflexive;
- 110.b.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
- 110.6.b.11.D.ix: capitalization of historical periods, events, and documents; titles of books; stories and essays; and languages, races, and nationalities;
- 110.6.b.11.D.x: punctuation marks, including apostrophes in possessives, commas in compound sentences, and quotation marks in dialogue; and
- 110.6.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;

▪ 110.6.b.12: 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:
  - 110.6.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;

○ 5th Grade:
  ▪ 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  ▪ 110.7.b.11: 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 uses appropriate conventions. The student is expected to:

- 110.7.b.11.D: edit drafts using standard English conventions, including:
- 110.7.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
- 110.7.b.11.D.ii: past tense of irregular verbs;
- 110.7.b.11.D.iii: collective nouns;
- 110.7.b.11.D.iv: adjectives, including their comparative and superlative forms;
- 110.7.b.11.D.v: conjunctive adverbs;
- 110.7.b.11.D.vi: prepositions and prepositional phrases and their influence on subject-verb agreement;
- 110.7.b.11.D.vii: pronouns, including indefinite;
- 110.7.b.11.D.viii: subordinating conjunctions to form complex sentences;
- 110.7.b.11.D.ix: capitalization of abbreviations, initials, acronyms, and organizations;
- 110.7.b.11.D.x: italics and underlining for titles and emphasis and punctuation marks, including quotation marks in dialogue and commas in compound and complex sentences; and
- 110.7.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;

▪ 110.7.b.12: 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:

- 110.7.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;

<u>Math</u>

○ 3rd Grade:

▪ 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- 111.5.b.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;

- 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.5.b.4.A: solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;
    - 111.5.b.4.G: use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
    - 111.5.b.4.K: solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.
- 111.5.b.8: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
    - 111.5.b.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals;

- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.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;
    - 111.6.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:
        - 111.6.b.2.B: represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals;

            - 111.6.b.2.E: represent decimals, including tenths and hundredths, using concrete and visual models and money;
        - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
            - 111.6.b.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
            - 111.6.b.4.D: use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
            - 111.6.b.4.E: represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;
            - 111.6.b.4.F: use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;
            - 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.
- 5th Grade:
    - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.7.b.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;
    - 111.7.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:
        - 111.7.b.2.A: represent the value of the digit in decimals through the thousandths using expanded notation and numerals;
    - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order

to solve problems with efficiency and accuracy. The student is expected to:

- 111.7.b.3.B: multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
- 111.7.b.3.C: solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;
- 111.7.b.3.D: represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;
- 111.7.b.3.E: solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
- 111.7.b.3.I: represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models;
- 111.7.b.3.K: add and subtract positive rational numbers fluently;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.15.F: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
- 4th Grade:

        - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
            - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies
            - 113.15.c.21.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
            - 113.16.c.25.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
    - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to

answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.

- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

EGGOLOGY

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.7: 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:

- 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;
    - <u>Science</u>
- 3rd Grade:
  - 112.5.b.1: Scientific and Engineering Practices: The student 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:
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.5: Recurring Themes and Concepts: The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:
    - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
  - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.5.b.13.A: explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment

- 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans

- 4th Grade:
  - 112.6.b.1: Scientific and Engineering Practices: The student 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:
    - 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.1.F: record and organize data using pictures, numbers, words, symbols, and simple graphs
  - 112.6.b.5: Recurring Themes and Concepts: The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:
    - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
  - 112.6.b.13: Organisms and Environments: The student knows that organisms resemble their parents and have structures and undergo processes that help them interact and survive within their environments. The student is expected to:
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms
- 5th Grade:
  - 112.7.b.1: Scientific and Engineering Practices: The student 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:
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect;
  - 112.7.b.5: Recurring Themes and Concepts: The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:

    112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems

- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.7.b.13.B: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

    113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

EGGS: FROM HEN TO HOME

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The

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

- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.5.b.4.B: 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 to investigate STEM careers
- 4th Grade:
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.6.b.4.B: 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 to investigate STEM careers
- 5th Grade:
    - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.7.b.4.B: 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 to investigate STEM careers

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

<u>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.B: use various search strategies with adult assistance.
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.

- 5th Grade:
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

ENERGY'S JOURNEY FROM FARM TO YOU

English Language Arts

- 3rd Grade:
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
  - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

      112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter

      112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:

            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
        - 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
            - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 5th Grade:

- 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

EXPLORING AQUAPONICS

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.13: 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:
        - 110.5.b.13.E: demonstrate understanding of information gathered;
        - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

            - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.H: synthesize information to create new understanding;
        - 110.6.b.13: 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:
            - 110.6.b.13.E: demonstrate understanding of information gathered;
            - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.13: 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:
            - 110.7.b.13.E: demonstrate understanding of information gathered;
            - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results;

<u>Science</u>

- 3rd Grade:

- 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
    - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.5.b.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:
    - 112.5.b.2.A: identify basic advantages and limitations of models such as their size, properties, and materials
    - 112.5.b.2.B: analyze data by identifying significant features, patterns, or sources of error

        - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
        - 112.5.b.2.D: evaluate a design or object using criteria
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
- 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.5.b.4.B: 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 to investigate STEM careers
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.5.b.11: Earth and Space: The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products

            - 112.5.b.11.B: explain why the conservation of natural resources is important
            - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
        - 112.5.b.12: Organisms and Environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
        - 112.5.b.13: Organisms and Environments. The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
            - 112.14.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
            - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

- 112.6.b.1.E: collect observations and measurements as evidence
- 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
    - 112.6.b.2.A: identify basic advantages and limitations of models such as their size, properties, and materials
    - 112.6.b.2.B: analyze data by identifying significant features, patterns, or sources of error
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.2.D: evaluate a design or object using criteria
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
- 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.6.b.4.B: 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 to investigate STEM careers

- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 11264.b.11: Earth and Space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
- 112.6.b.12: Organisms and Environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field

investigations as outlined in Texas Education Agency-approved safety standards
    - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.7.b.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:
    - 112.7.b.2.A: identify basic advantages and limitations of models such as their size, properties, and materials
    - 112.7.b.2.B: analyze data by identifying significant features, patterns, or sources of error
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.2.D: evaluate a design or object using criteria
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

        - 112.7.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
- 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.7.b.4.B: 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 to investigate STEM careers
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
        - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.7.b.11: Earth and Space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.
- 112.7.b.12: Organisms and Environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
        - 112.7.b.12.B: predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web
- 112.7.b.13: Organisms and Environments. The student knows that organisms undergo similar life processes and have structures and

behaviors that help them survive within their environments. The student is expected to:

- 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
    - 113.15.c.8.B: explain reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities;
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

<u>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

EXPLORING TEXTURE IN THE GARDEN

English Language Arts

3rd Grade:

- 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 110.5.b.6: 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:
    110.5.b.6.G: evaluate details read to determine key ideas;

4th Grade:

- 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
- 110.6.b.6: 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:
    110.6.b.6.G: evaluate details read to determine key ideas;

5th Grade:

- 110.7.b.6: 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:
    110.7.b.6.G: evaluate details read to determine key ideas;

Science

3rd Grade:

- 112.5.b.10: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:

- 112.5.b.10.B: investigate and explain how soils such as sand and clay are formed by weathering of rock and by decomposition of plant and animal remains

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

FARMER GEORGE: THE SEEDS OF A PRESIDENCY

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

            - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.6: 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:
            - 110.5.b.6.G: evaluate details read to determine key ideas;
            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.7: 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:
            - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.5.b.12: 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:
            - 110.5.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
        - 110.6.b.6: 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:
            - 110.6.b.6.G: evaluate details read to determine key ideas;
            - 110.6.b.6.H: synthesize information to create new understanding;

- 110.6.b.7: 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:
    - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
- 110.6.b.12: 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:
    - 110.6.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;

- 5th Grade:
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.7.b.12: 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:
        - 110.7.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.A: use social studies terminology correctly;

        - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.2: History. The student understands how conflict between the American colonies and Great Britain led to American independence and the formation of the United States. The student is expected to:
            - 113.16.c.2.B: identify the Founding Fathers and Patriot heroes, including John Adams, Benjamin Franklin, Thomas Jefferson, the Sons of Liberty, and George Washington, and their motivations and contributions during the revolutionary period;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

    - 3rd Grade:
        - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
            - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
    - 4th Grade:
        - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;

- 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

FARMING IN A GLOVE

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.5.b.2.D: evaluate a design or object using criteria
  - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models

            - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
            - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
            - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
            - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
        - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
            - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
              112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.E: collect observations and measurements as evidence
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.2.D: evaluate a design or object using criteria
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams,

flow charts or sequence maps, and input-output tables that show cause and effect

- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.2.D: evaluate experimental and engineering designs
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models;
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.7.b.5.E: investigate the flow of energy and cycling of matter through systems
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
    - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of

problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

FLOWER POWER

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
      110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;

            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.7: 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:
            - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

FROM CHICKEN LITTLE TO CHICKEN BIG

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
        - 110.5.b.3.B: use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words;
    - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 110.5.b.7: 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:
    - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
        - 110.6.b.3.B: use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words;
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

            - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
            - 110.7.b.3.B: use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words;
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;
            - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.7: 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:
            - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
- 4th Grade:
    - 112.6.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have

structures that function to help them survive within their environments. The student is expected to:
        - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms
    - 5th Grade:
        - 112.7.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

Social Studies

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
- 4th Grade:
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

FROM SOYBEANS TO CAR PARTS

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate,

volume, enunciation, and the conventions of language to communicate ideas effectively;

- 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
- 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
- 110.5.b.13: 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:
    - 110.5.b.13.C: identify and gather relevant information from a variety of sources;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.13: 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:

            - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
    - 5th Grade:
        - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.13: 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:
            - 110.7.b.13.C: identify and gather relevant information from a variety of sources;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
        - 112.5.b.6.A: measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float in water
- 5th Grade:
    - 112.7.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
        - 112.7.b.6.B: demonstrate and explain that some mixtures maintain physical properties of their substances such as iron filings and sand or sand and water;

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.6: Economics. The student understands the concept of the free enterprise system and how businesses operate in the U.S. free enterprise system. The student is expected to:

- 113.14.c.6.D: identify individuals, past and present, such as Henry Ford and Sam Walton who have started new businesses.

- 5th Grade:
  - 113.16.c.6: Geography. The student understands places and regions in the United States. The student is expected to:
    - 113.16.c.6.C: locate on a map important political features such as the five largest cities by population in the United States and the 50 states;
  - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
    - 113.16.c.22.A: identify the accomplishments of notable individuals in the fields of science and technology such as Benjamin Franklin, Eli Whitney, John Deere, Thomas Edison, Alexander Graham Bell, George Washington Carver, the Wright Brothers, and Neil Armstrong;

FROM WOOL TO WHEEL

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.6: Matter and Energy: The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
        - 112.5.b.6.A: measure, test, and record physical properties of matter, including temperature, mass, magnetism, and the ability to sink or float in water
- 4th Grade:
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.6: Matter and Energy: The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:

- 112.6.b.6.A: classify and describe matter using observable physical properties, including temperature, mass, magnetism, relative density (the ability to sink or float in water), and physical state (solid, liquid, gas)

- 5th Grade:
  - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
    - 113.15.c.8.B: explain reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

- 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

FULL OF BEANS: HENRY FORD GROWS A CAR

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.7: Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:
        - 111.5.b.7.E: determine liquid volume (capacity) or weight using appropriate units and tools.

<u>Science</u>

- 3rd Grade:
    - 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
        - 112.5.b.6.B: describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container
        - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)
- 5th Grade:
    - 112.7.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:

- 112.7.b.6.B: demonstrate and explain that some mixtures maintain physical properties of their substances such as iron filings and sand or sand and water

Social Studies

- 3rd Grade:
  - 113.14.c.6: Economics. The student understands the concept of the free enterprise system and how businesses operate in the U.S. free enterprise system. The student is expected to:
    - 113.14.c.6.D: identify individuals, past and present, such as Henry Ford and Sam Walton who have started new businesses.
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
  - 113.16.c.5: History. The student understands important issues, events, and individuals in the United States during the 20th and 21st centuries. The student is expected to:
    - 113.16.c.5.A: explain the significance of issues and events of the 20th century such as industrialization, urbanization, the Great Depression, the world wars, the civil rights movement, and military actions;
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

GET POPPING!

English Language Arts

- 3rd Grade:

        - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain

gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

- 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
        - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information;

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
    - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, and materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information;
- 112.7.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.7.b.6.C: compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions;

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

GIVE ME FIVE!

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion,

identifying cause and effect, comparing, and contrasting;

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

GOT GUTS?

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.7: 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:
        - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.7: 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:
        - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
- 110.7.b.7: 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:
    - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.5.b.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:
        - 112.5.b.2.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

            - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
        - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.5.b.4.B: 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 to investigate STEM careers
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
            - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
        - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
            - 112.5.b.13.A: explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.E: collect observations and measurements as evidence
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams,

flow charts or sequence maps, and input-output tables that show cause and effect
- 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
  - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
  - 112.6.b.4.B: 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 to investigate STEM careers
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
  - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
  - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
  - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
- 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.B: 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 to investigate STEM careers
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:

- 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems

- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
  - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information

acquired from a variety of valid sources, including technology. The student is expected to:
- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

<u>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.B: use various search strategies with adult assistance.
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;

            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
        - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
    - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

GROCERY STORE PROBLEM SOLVING

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.5.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
        - 111.5.b.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;

- 111.5.b.2: Number and operations. The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:
    - 111.5.b.2.D: compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or =.
- 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.5.b.4.A: solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;
    - 111.5.b.4.G: use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
    - 111.5.b.4.K: solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.

- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
        - 111.6.b.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;
    - 111.6.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:

            - 111.6.b.2.C: compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or =;
            - 111.6.b.2.D: round whole numbers to a given place value through the hundred thousands place;
        - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
            - 111.6.b.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
            - 111.6.b.4.D: use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
            - 111.6.b.4.E: represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;
            - 111.6.b.4.F: use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;
            - 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.
    - 5th Grade:
        - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.7.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
            - 111.7.b.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;
        - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:

- 111.7.b.3.B: multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
- 111.7.b.3.C: solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;
- 111.7.b.3.D: represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;
- 111.7.b.3.E: solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
- 111.7.b.3.I: represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models;
- 111.7.b.3.K: add and subtract positive rational numbers fluently;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.4: Geography. The student understands the concepts of location, distance, and direction on maps and globes. The student is expected to:
    - 113.14.c.4.A: use cardinal and intermediate directions to locate places on maps and globes in relation to the local community;
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:

        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;

GROWING PLANTS IN SCIENCE AND LITERATURE, MORE THAN AN EMPTY POT

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.7: 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:
        - 110.5.b.7.D: retell and paraphrase texts in ways that maintain meaning and logical order;
        - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.5.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across

increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:

- 110.5.b.8.C: analyze plot elements, including the sequence of events, the conflict, and the resolution; and

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
    - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
  - 110.6.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
    - 110.6.b.8.C: analyze plot elements, including the rising action, climax, falling action, and resolution; and
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The

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

- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.H: synthesize information to create new understanding; and
- 110.7.b.7: 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:
    - 110.7.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
    - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
- 110.7.b.8: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--literary elements. The student recognizes and analyzes literary elements within and across increasingly complex traditional, contemporary, classical, and diverse literary texts. The student is expected to:
    - 110.7.b.8.C: analyze plot elements, including rising action, climax, falling action, and resolution; and

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
          112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.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:

- 112.5.b.2.B: analyze data by identifying any significant features, patterns, or sources of error

- 4th Grade:
  - 112.6.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.E: collect observations and measurements as evidence
  - 112.6.b.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:
    - 112.6.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.6.b.12: Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
- 5th Grade:
  - 112.7.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
      112.7.b.1.E: collect observations and measurements as evidence
  - 112.7.b.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:
        - 112.7.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

Social Studies

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

HATCHING SCIENCE WITH CLASSROOM CHICKS

English Language Arts

- 3rd Grade:

        - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
        - 110.5.b.6: 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:
            - 110.5.b.6.H: synthesize information to create new understanding;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.H: synthesize information to create new understanding;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
    - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
        - 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

<u>Social Studies</u>

- 3rd Grade:

        - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.15.B: create and interpret timelines;
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            113.16.c.25.C: express ideas orally based on research and experiences;

HIGH-TECH FARMING

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

- 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 110.5.b.7: 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:
    - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume,

enunciation, natural gestures, and conventions of language to communicate ideas effectively;
- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
  - 110.7.b.6.G: evaluate details read to determine key ideas;
  - 110.7.b.6.H: synthesize information to create new understanding;
- 110.7.b.7: 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:
  - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.B: create and interpret timelines;
  - 113.14.c.13: Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present. The student is expected to:
    - 113.14.c.13.A: identify individuals who have discovered scientific breakthroughs or created or invented new technology such as Jonas Salk, Cyrus McCormick, Bill Gates, Louis Pasteur, and others;
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:

- 113.15.c.18: Science, technology, and society. The student understands the impact of science and technology on life in Texas. The student is expected to:
    - 113.15.c.18.B: describe how scientific discoveries and innovations such as in aerospace, agriculture, energy, and technology have benefited individuals, businesses, and society in Texas.
- 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
        - 113.16.c.22.A: identify the accomplishments of notable individuals in the fields of science and technology such as Benjamin Franklin, Eli Whitney, John Deere, Thomas Edison, Alexander Graham Bell, George Washington Carver, the Wright Brothers, and Neil Armstrong;
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
        - 3.126.8.c.5.B: use various search strategies with adult assistance.
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
        - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern

recognition, abstraction, and algorithms. The student is expected to:

- 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

HOMES ON THE RANGE

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.1.E: develop social communication such as conversing politely in all situations;
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
        - 111.5.b.4.A: solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value,

properties of operations, and the relationship between addition and subtraction;

- 4th Grade:
  - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.6.b.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
- 5th Grade:
  - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.7.b.3.A: estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.5.b.4.B: 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 to investigate STEM careers
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
        - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
        - 112.5.b.11.B: explain why the conservation of natural resources is important
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food

chain such as removal of frogs from a pond or bees from a field affect the ecosystem
- 112.5.b.12.C: describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations
- 112.5.b.12.D: identify fossils as evidence of past living organisms and environments, including common Texas fossils

- 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
  - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans

- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
    - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 4.112.6.b.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:
    - 112.6.b.2.D: evaluate experimental and engineering designs
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.6.b.4.B: 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 to investigate STEM careers
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life

- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
    - 112.6.b.12.C: identify and describe past environments based on fossil evidence, including common Texas fossils
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms

- 5th Grade:
    - 112.17.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 5.112.7.b.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:
    - 112.7.b.2.D: evaluate a design or object using criteria
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.B: 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 to investigate STEM careers
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.7.b.5.E: investigate the flow of energy and cycling of matter through systems
    - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

- 112.7.b.12.B: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
- 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
  - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.15.B: create and interpret timelines;
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        113.16.c.25.C: express ideas orally based on research and experiences;
        113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of

problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

- 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;

- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

HONEYBEES: A POLLINATION SIMULATION

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
    - 112.5.b.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:
        - 112.5.b.2.A: develop explanations and propose solutions supported by data and models

        - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
    - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
        - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
    - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.5.b.13.A: explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment
        - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
- 4th Grade:

- 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models;
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas

- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
    - 112.7.b.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:
        - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
    - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:

- 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

- 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.16.c.26.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.

HORSE AND RIDER: THE PONY EXPRESS

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;

        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.
- 5th Grade:
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
        - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve

decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

- 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

HOW WEATHER IMPACTS FARMS

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.13: 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:
    - 110.5.b.13.B: develop and follow a research plan with adult assistance;
    - 110.5.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.5.b.13.E: demonstrate understanding of information gathered;
    - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.13: 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:
    - 110.6.b.13.B: develop and follow a research plan with adult assistance;

- 110.6.b.13.C: identify and gather relevant information from a variety of sources;
- 110.6.b.13.E: identify primary and secondary sources;
- 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.13: 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:
    - 110.7.b.13.B: develop and follow a research plan with adult assistance;
    - 110.7.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.7.b.13.E: demonstrate understanding of information gathered;
    - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun,

Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.5.b.10: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:
    - 112.5.b.10.A: compare and describe day-to-day weather in different locations at the same time, including air temperature, wind direction, and precipitation;
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.C: describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:

- 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems

112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:

- 112.6.b.10.A: describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process
- 112.6.b.10.B: model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice

- 112.6.b.10.C: differentiate between weather and climate

112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:

- 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
- 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life

- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
  - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.7.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion

- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.7.b.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to:
    - 112.7.b.10.A: explain how the Sun and the ocean interact in the water cycle and affect weather
    - 112.7.b.10.C: model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
    - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

Social Studies

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

            - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
        - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
            - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

<u>Technology Applications</u>

- 3rd Grade:

- 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
    - 3.126.8.c.5.B: use various search strategies with adult assistance.
- 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.

- 4th Grade:

  4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
- 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.

- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
    - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to

analyze and transform data and make inferences to answer questions.

Inherited Traits in the Living Corn Necklace

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

TEXAS FARM BUREAU®

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
  - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
  - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
  - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
  - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
  - 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms
- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:

- 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

▪ 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
- 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems

▪ 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
- 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
- 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

▪ 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
- 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment
- 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

<u>Social Studies</u>

○ 3rd Grade:

▪ 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
- 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion,

identifying cause and effect, comparing, and contrasting;

- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
        - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to

answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.

- 4th Grade:
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
    - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

Keeping Soil in Its Place

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.H: synthesize information to create new understanding;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.H: synthesize information to create new understanding;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.5.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- 5th Grade:
    - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.7.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple

representations, including symbols, diagrams, graphs, and language as appropriate;

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
  - 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
  - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
  - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.B: explain why the conservation of natural resources is important
- 4th Grade:

- 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:
    - 112.6.b.10.A: describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process
    - 112.6.b.10.B: model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.7.b.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to:
    - 112.7.b.10.C: model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes

<u>Social Studies</u>

- 3rd Grade:

- 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.

- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.
- 5th Grade:

- 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
    - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic

organizers such as learning maps, concept maps, or other representations of data;

- 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

LUSCIOUS LEAVES

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through

listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

Math

- 3rd Grade:
  - 111.5.b.8: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
    - 111.5.b.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals;

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:

- 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

MACHINES IN AGRICULTURE

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols; 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:
        - 110.5.b.9.B: explain rhyme scheme, sound devices, and structural elements such as stanzas in a variety of poems;
    - 110.5.b.11: 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 uses appropriate conventions. The student is expected to:

- 110.5.b.11.D: edit drafts using standard English conventions, including:
- 110.5.b.11.D.i: complete simple and compound sentences with subject-verb agreement;
- 110.5.b.11.D.ii: past, present, and future verb tense;
- 110.5.b.11.D.iii: singular, plural, common, and proper nouns;
- 110.5.b.11.D.iv: adjectives, including their comparative and superlative forms;
- 110.5.b.11.D.v: adverbs that convey time and adverbs that convey manner;
- 110.5.b.11.D.vi: prepositions and prepositional phrases;
- 110.5.b.11.D.vii: pronouns, including subjective, objective, and possessive cases;
- 110.5.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
- 110.5.b.11.D.ix: capitalization of official titles of people, holidays, and geographical names and places;
- 110.5.b.11.D.x: punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; and
- 110.5.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;

▪ 110.5.b.12: 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:

- 110.5.b.12.A: compose literary texts, including personal narratives and poetry, using genre characteristics and craft;

○ 4th Grade:

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

- 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.6.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
- 110.6.b.11: 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 uses appropriate conventions. The student is expected to:
    - 110.6.b.11.D: edit drafts using standard English conventions, including:
    - 110.6.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
    - 110.6.b.11.D.ii: past tense of irregular verbs;
    - 110.6.b.11.D.iii: singular, plural, common, and proper nouns;
    - 110.6.b.11.D.iv: adjectives, including their comparative and superlative forms;
    - 110.6.b.11.D.v: adverbs that convey frequency and adverbs that convey degree;
    - 110.6.b.11.D.vi: prepositions and prepositional phrases;
    - 110.6.b.11.D.vii: pronouns, including reflexive;
    - 110.b.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
    - 110.6.b.11.D.ix: capitalization of historical periods, events, and documents; titles of books; stories and essays; and languages, races, and nationalities;
    - 110.6.b.11.D.x: punctuation marks, including apostrophes in possessives, commas in compound sentences, and quotation marks in dialogue; and
    - 110.6.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;
- 110.6.b.12: 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:

        - 110.6.b.12.A: compose literary texts such as personal narratives and poetry using genre characteristics and craft;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.11: 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 uses appropriate conventions. The student is expected to:
        - 110.7.b.11.D: edit drafts using standard English conventions, including:
        - 110.7.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
        - 110.7.b.11.D.ii: past tense of irregular verbs;
        - 110.7.b.11.D.iii: collective nouns;
        - 110.7.b.11.D.iv: adjectives, including their comparative and superlative forms;
        - 110.7.b.11.D.v: conjunctive adverbs;
        - 110.7.b.11.D.vi: prepositions and prepositional phrases and their influence on subject-verb agreement;
        - 110.7.b.11.D.vii: pronouns, including indefinite;
        - 110.7.b.11.D.viii: subordinating conjunctions to form complex sentences;
        - 110.7.b.11.D.ix: capitalization of abbreviations, initials, acronyms, and organizations;

- 110.7.b.11.D.x: italics and underlining for titles and emphasis and punctuation marks, including quotation marks in dialogue and commas in compound and complex sentences; and
- 110.7.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;

- 110.7.b.12: 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:
  - 110.7.b.12.A: compose literary texts such as personal narratives, fiction, and poetry using genre characteristics and craft;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 113.14.c.15.F: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;

        - 113.15.c.21.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.

MADE TO MOVE

<u>English Language Arts</u>

    - 3rd Grade:
        - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
        - 110.5.b.6: 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:
            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.13: 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:

        - 110.5.b.13.E: demonstrate understanding of information gathered;
        - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.13: 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:
        - 110.6.b.13.E: demonstrate understanding of information gathered;
        - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;
- 110.7.b.13: 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:
    - 110.7.b.13.E: demonstrate understanding of information gathered;
    - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.5.b.4.B: 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 to investigate STEM careers

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
- 112.5.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
    - 112.5.b.8.A: identify everyday examples of energy, including light, sound, thermal, and mechanical

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.6.b.4.B: 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 to investigate STEM careers
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.7: Force, Motion, and Energy: The student knows the nature of forces and the patterns of their interactions. The student is expected to plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance on an object
- 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
            - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
            - 112.7.b.4.B: 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 to investigate STEM careers
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 112.7.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
  - 112.7.b.8.A: investigate and describe the transformation of energy in systems such as energy in a flashlight battery that changes from chemical energy to electrical energy to light energy

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.18: Science, technology, and society. The student understands the impact of science and technology on life in Texas. The student is expected to:

    113.15.c.18.B: describe how scientific discoveries and innovations such as in aerospace, agriculture, energy, and technology have benefited individuals, businesses, and society in Texas.
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information

acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
  - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.
- 5th Grade:
  - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
    - 113.16.c.22.B: identify how scientific discoveries, technological innovations, and the rapid growth of technology industries have advanced the economic development of the United States, including the transcontinental railroad and the space program;
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main

idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
  - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
  - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

MAKING A BRAND FOR OURSELVES THE "COWBOY" WAY

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.5.b.7: 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:
    - 110.5.b.7.D: retell and paraphrase texts in ways that maintain meaning and logical order;
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
  - 110.5.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics,

structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:

- 110.5.b.9.B: explain rhyme scheme, sound devices, and structural elements such as stanzas in a variety of poems;

- 110.5.b.12: 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:
    - 110.5.b.12.A: compose literary texts, including personal narratives and poetry, using genre characteristics and craft;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.6.b.7: 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:
        - 110.6.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 110.6.b.12: 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:
        - 110.6.b.12.A: compose literary texts such as personal narratives and poetry using genre characteristics and craft;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.7.b.7: 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:
    - 110.7.b.7.D: retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;
    - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
  - 110.7.b.12: 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:
    - 110.7.b.12.A: compose literary texts such as personal narratives, fiction, and poetry using genre characteristics and craft;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

            - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
        - 113.14.b.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.14.b.15.A: use social studies terminology correctly;
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.4: History. The student understands the political, economic, and social changes in Texas during the last half of the 19th century. The student is expected to:
            - 113.14.c.4.B: explain the growth, development, and impact of the cattle industry such as contributions made by Charles Goodnight, Richard King, and Lizzie Johnson;
        - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;

MANY TYPES OF FARMS

<u>English Language Arts</u>

- 3rd Grade:

- 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
- 110.5.b.13: 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:
    - 110.5.b.13.B: develop and follow a research plan with adult assistance;
    - 110.5.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.5.b.13.E: demonstrate understanding of information gathered;
    - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.13: 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:
        - 110.6.b.13.B: develop and follow a research plan with adult assistance;
        - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
        - 110.6.b.13.E: identify primary and secondary sources;
        - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 5th Grade:

- 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 110.7.b.13: 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:
    - 110.7.b.13.B: develop and follow a research plan with adult assistance;
    - 110.7.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.7.b.13.E: demonstrate understanding of information gathered;
    - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
            - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

- 5th Grade:
    - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

- 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

MILK MAKIN' MATH

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

Math

- 3rd Grade:
  - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.5.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
    - 111.5.b.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;
    - 111.5.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

- 111.5.b.2: Number and operations. The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:
    - 111.5.b.2.C: represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers;
- 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.5.b.4.B: round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems;
- 111.5.b.5: Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:
    - 111.5.b.5.A: represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations;

- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
        - 111.6.b.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;
        - 111.6.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
    - 111.6.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:
        - 111.6.b.2.D: round whole numbers to a given place value through the hundred thousands place;

            - 111.6.b.2.G: relate decimals to fractions that name tenths and hundredths;
        - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
            - 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.
        - 111.6.b.8: Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:
            - 111.6.b.8.C: solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.
    - 5th Grade:
        - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
            - 111.7.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
            - 111.7.b.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;
            - 111.7.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
        - 111.7.b.2: Number and operations. The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:
            - 111.7.b.2.C: round decimals to tenths or hundredths.
        - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:

- 111.7.b.3.A: estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division;
- 111.7.b.3.E: solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
- 111.7.b.3.K: add and subtract positive rational numbers fluently;

Science

- 3rd Grade:
  - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.B: 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 to investigate STEM careers
- 4th Grade
  - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.6.b.4.B: 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 to investigate STEM careers
- 5th Grade
  - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.7.b.4.B: 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 to investigate STEM careers

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;

- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
  - 113.14.c.16.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.

- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

Technology Applications

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
  - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
    - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
  - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
  - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern

recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
- 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

MORE THAN ONE GRAIN OF RICE

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.5.b.7: 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:
        - 110.5.b.7.G: discuss specific ideas in the text that are important to the meaning.
- 4th Grade:

- 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.6.b.7: 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:
    - 110.6.b.7.G: discuss specific ideas in the text that are important to the meaning.

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.7.b.7: 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:

- 110.7.b.7.G: discuss specific ideas in the text that are important to the meaning.

<u>Math</u>

- 3rd Grade:
  - 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.5.b.4.A: solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction;
    - 111.5.b.4.G: use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;
    - 111.5.b.4.J: determine a quotient using the relationship between multiplication and division;
    - 111.5.b.4.K: solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts.
- 4th Grade:
  - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.6.b.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
    - 111.6.b.4.D: use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;

- 111.6.b.4.E: represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations;
- 111.6.b.4.F: use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;
- 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.

- 5th Grade:
  - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.7.b.3.B: multiply with fluency a three-digit number by a two-digit number using the standard algorithm;
    - 111.7.b.3.C: solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;
    - 111.7.b.3.D: represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;
    - 111.7.b.3.E: solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers;
    - 111.7.b.3.K: add and subtract positive rational numbers fluently;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.3: Geography. The student understands how humans adapt to and/or modify the physical environment. The student is expected to:
    - 113.14.c.3.A: describe similarities and differences in the physical environment, including climate, landforms, natural resources, and natural hazards;
  - 113.14.c.6: Economics. The student understands the concept of the free enterprise system and how businesses operate in the U.S. free enterprise system. The student is expected to:
    - 113.14.c.6.A: explain how supply and demand affect the price of a good or service;
    - 113.14.c.6.B: define and identify examples of scarcity;

        - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.10: Economics. The student understands the characteristics and benefits of the free enterprise system in Texas. The student is expected to:
            - 113.15.c.10.A: describe how the free enterprise system works, including supply and demand;
            - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 5th Grade:
        - 113.16.c.11: Economics. The student understands the impact of supply and demand on consumers and producers in a free enterprise system. The student is expected to:
            - 113.16.c.11.A: explain how supply and demand affects consumers in the United States;
            - 113.16.c.11.B: evaluate the effects of supply and demand on industry and agriculture, including the plantation system, in the United States.
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;

MY FARM WEB

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
    - 110.5.b.6.E: make connections to personal experiences, ideas in other texts, and society;
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.E: make connections to personal experiences, ideas in other texts, and society;
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume,

enunciation, natural gestures, and conventions of language to communicate ideas effectively;
- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
  - 110.7.b.6.E: make connections to personal experiences, ideas in other texts, and society;
  - 110.7.b.6.G: evaluate details read to determine key ideas;
  - 110.7.b.6.H: synthesize information to create new understanding;
- 110.7.b.7: 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:
  - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.15.c.21.C: express ideas orally based on research and experiences;
  - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

NATURAL AND MANAGED ECOSYSTEMS

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

  - 110.5.b.6: 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:

110.5.b.6.A: establish purpose for reading assigned and self-selected texts;
110.5.b.6.G: evaluate details read to determine key ideas;
110.5.b.6.H: synthesize information to create new understanding;

- 110.5.b.13: 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:

110.5.b.13.E: demonstrate understanding of information gathered;
110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

110.6.b.1.C: express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

  - 110.6.b.6: 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:

110.7.b.6.A: establish purpose for reading assigned and self-selected texts;
110.7.b.6.G: evaluate details read to determine key ideas;
110.6.b.6.H: synthesize information to create new understanding;

  - 110.6.b.13: 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:

110.6.b.13.E: demonstrate understanding of information gathered;

    - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.A: establish purpose for reading assigned and self-selected texts;

- 110.7.b.6.G: evaluate details read to determine key ideas;
- 110.7.b.6.H: synthesize information to create new understanding;

- 110.7.b.13: 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:
  - 110.7.b.13.E: demonstrate understanding of information gathered;
  - 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
  - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.B: explain why the conservation of natural resources is important
    - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
  - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

            - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
            - 112.5.b.12.C: describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations
        - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
            - 112.5.b.13.A: explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment
            - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
        - 4.112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:
            - 112.6.b.10.C: differentiate between weather and climate

- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:

structure and function of objects, organisms, and systems

- 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems

- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
  - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
  - 112.7.b.12.B: predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web;
  - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
  - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment
  - 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.3: Geography. The student understands how humans adapt to and/or modify the physical environment. The student is expected to:
    - 113.14.c.3.A: describe similarities and differences in the physical environment, including climate, landforms, natural resources, and natural hazards;
    - 113.14.c.3.B: identify and compare how people in different communities adapt to or modify the physical

environment in which they live such as deserts, mountains, wetlands, and plains;

- 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;

- 4th Grade:
    - 113.15.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
        - 113.15.c.8.A: describe ways people have adapted to and modified their environment in Texas, past and present, such as timber clearing, agricultural production, wetlands drainage, energy production, and construction of dams;
        - 113.15.c.8.B: explain reasons why people have adapted to and modified their environment in Texas, past and present, such as the use of natural resources to meet basic needs, facilitate transportation, and enhance recreational activities;
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 5th Grade:
    - 113.16.c.8: Geography. The student understands how people adapt to and modify their environment. The student is expected to:
        - 113.16.c.8.A: describe how and why people have adapted to and modified their environment in the United States such as the use of human resources to meet basic needs;
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

PANCAKES!

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
  - 110.5.b.6: 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:
    - 110.5.b.6.G: evaluate details read to determine key ideas;
  - 110.5.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:
    - 110.5.b.9.A: demonstrate knowledge of distinguishing characteristics of well-known children's literature such as folktales, fables, fairy tales, legends, and myths;
- 4th Grade:
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-

specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:

- 110.6.b.9.A: demonstrate knowledge of distinguishing characteristics of well-known children's literature such as folktales, fables, legends, myths, and tall tales;

- 5th Grade:
  - 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
  - 110.7.b.9: Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to:
    - 110.7.b.9.A: demonstrate knowledge of distinguishing characteristics of well-known children's literature such as folktales, fables, legends, myths, and tall tales;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.5.b.6.B: describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container
    - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)
- 4th Grade:
  - 112.6.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:

- 112.6.b.6.A: classify and describe matter using observable physical properties, including temperature, mass, magnetism, relative density (the ability to sink or float in water), and physical state (solid, liquid, gas)

- 5th Grade:
  - 112.7.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.7.b.6.C: compare the properties of substances before and after they are combined into a solution and demonstrate that matter is conserved in solutions

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;

PEACHES: WHAT'S ALL THE FUZZ ABOUT?

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.7: 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:
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:

        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.7: 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:
            - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.7: 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:
            - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:

            - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
            - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
        - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.5.b.11.B: explain why the conservation of natural resources is important
        - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
    - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
  - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
  - 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
    - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem
  - 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
    - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:

- 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences

PEAS IN A POD

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
- 4th Grade:

        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

<u>Math</u>

- 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.5.b.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;
        - 111.5.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- 4th Grade:
    - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.6.b.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;
        - 111.6.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;
- 5th Grade:
    - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

- 111.7.b.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;
- 111.7.b.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

Science

- 4th Grade:
  - 112.6.b.13: Organisms and environments. The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms;

Social Studies

- 3rd Grade:
  - 113.14.c.13: Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present. The student is expected to:
    - 113.14.c.13.A: identify individuals who have discovered scientific breakthroughs or created or invented new technology such as Jonas Salk, Cyrus McCormick, Bill Gates, Louis Pasteur, and others;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
    - 113.16.c.22.A: identify the accomplishments of notable individuals in the fields of science and technology such as Benjamin Franklin, Eli Whitney, John Deere, Thomas Edison, Alexander Graham Bell,

George Washington Carver, the Wright Brothers, and Neil Armstrong;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.16.c.25.C: express ideas orally based on research and experiences;

PIGS ON THE FARM

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
- 4th Grade:

  110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:

- 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.5.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
- 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
- 112.5.b.1.E: collect observations and measurements as evidence
- 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.5.b.2.D: evaluate a design or object using criteria
- 112.5.b.3: 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:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models

        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
    - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
        - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
    - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
    - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:

- 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.6.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
- 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
- 112.6.b.1.E: collect observations and measurements as evidence
- 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.2.D: evaluate a design or object using criteria
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models

            - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
            - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
            - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
            - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.7.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
            - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring

scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information

- 112.7.b.1.E: collect observations and measurements as evidence
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.7.b.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:

  112.7.b.2.C: use mathematical calculations to compare patterns and relationships;

  112.7.b.2.D: evaluate experimental and engineering designs.
- 112.7.b.3: 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:
  - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
  - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
  - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society

- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
    - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment
    - 112.7.b.13.B: explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.

- 4th Grade:

  113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
  - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
  - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

            - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
            - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
    - 4th Grade:
        - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
    - 5th Grade:
        - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

PLANT-SOIL INTERACTIONS

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;

            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.7: 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:
            - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.C: make and correct or confirm predictions using text features, characteristics of genre, and structures;

- 110.7.b.6.H: synthesize information to create new understanding;

- 110.7.b.7: 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:
  - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
  - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
  - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
  - 112.5.b.1.E: collect observations and measurements as evidence
  - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.5.b.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:
  - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
    - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
        - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
    - 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems

- 112.7.b.1.E: collect observations and measurements as evidence
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

▪ 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships

▪ 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems

▪ 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

▪ 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
    - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:

▪ 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

- 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

PROPERTIES OF SOILS

English Language Arts

3rd Grade:

- 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
  - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;

- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.E: collect observations and measurements as evidence
  - 112.14.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
  - 112.5.b.10: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:
    - 112.5.b.10.B: investigate and explain how soils such as sand and clay are formed by weathering of rock and by decomposition of plant and animal remains
- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.E: collect observations and measurements as evidence
  - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 5th Grade:
  - 112.7.b.1: 112.14.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:

        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including electronic technology. The student is expected to:
        - 113.15.c.19.C: analyze 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;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:

- 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

SEEDS, MIRACULOUS SEEDS

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
        - 110.5.b.3.B: use context within and beyond a sentence to determine the meaning of unfamiliar words and multiple-meaning words;
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
    - 110.5.b.7: 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:

        - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
        - 110.6.b.3.B: use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words;
    - 110.6.b.6: 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:
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.3: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:
    - 110.7.b.3.B: use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words;
- 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.H: synthesize information to create new understanding;
- 110.7.b.7: 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:
    - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

        - 112.5.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
    - 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
        - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment
        - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms
- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems

- 112.7.b.1.E: collect observations and measurements as evidence
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
  - 112.7.b.5.F: explain the relationship between the structure and function of objects, organisms, and systems
- 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:
  - 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

SIGNIFICANT SURROUNDINGS

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

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

- 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
- 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

- 110.5.b.11: 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 uses appropriate conventions. The student is expected to:
    - 110.5.b.11.D: edit drafts using standard English conventions, including:
    - 110.5.b.11.D.i: complete simple and compound sentences with subject-verb agreement;
    - 110.5.b.11.D.ii: past, present, and future verb tense;
    - 110.5.b.11.D.iii: singular, plural, common, and proper nouns;
    - 110.5.b.11.D.iv: adjectives, including their comparative and superlative forms;
    - 110.5.b.11.D.v: adverbs that convey time and adverbs that convey manner;
    - 110.5.b.11.D.vi: prepositions and prepositional phrases;
    - 110.5.b.11.D.vii: pronouns, including subjective, objective, and possessive cases;
    - 110.5.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
    - 110.5.b.11.D.ix: capitalization of official titles of people, holidays, and geographical names and places;
    - 110.5.b.11.D.x: punctuation marks, including apostrophes in contractions and possessives and commas in compound sentences and items in a series; and
    - 110.5.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;
- 110.5.b.12: 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:
    - 110.5.b.12.B: compose informational texts, including brief compositions that convey information about a

topic, using a clear central idea and genre characteristics and craft;

- 110.5.b.13: 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:
    - 110.5.b.13.A: generate questions on a topic for formal and informal inquiry;
    - 110.5.b.13.B: develop and follow a research plan with adult assistance;
    - 110.5.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.5.b.13.E: demonstrate understanding of information gathered;
    - 110.5.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.11: 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 uses appropriate conventions. The student is expected to:
        - 110.6.b.11.D: edit drafts using standard English conventions, including:
        - 110.6.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
        - 110.6.b.11.D.ii: past tense of irregular verbs;
        - 110.6.b.11.D.iii: singular, plural, common, and proper nouns;
        - 110.6.b.11.D.iv: adjectives, including their comparative and superlative forms;
        - 110.6.b.11.D.v: adverbs that convey frequency and adverbs that convey degree;
        - 110.6.b.11.D.vi: prepositions and prepositional phrases;
        - 110.6.b.11.D.vii: pronouns, including reflexive;

        - 110.b.b.11.D.viii: coordinating conjunctions to form compound subjects, predicates, and sentences;
        - 110.6.b.11.D.ix: capitalization of historical periods, events, and documents; titles of books; stories and essays; and languages, races, and nationalities;
        - 110.6.b.11.D.x: punctuation marks, including apostrophes in possessives, commas in compound sentences, and quotation marks in dialogue; and
        - 110.6.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;
    - 110.6.b.12: 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:
        - 110.6.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
    - 110.6.b.13: 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:
        - 110.6.b.13.A: generate and clarify questions on a topic for formal and informal inquiry;
        - 110.6.b.13.B: develop and follow a research plan with adult assistance;
        - 110.6.b.13.C: identify and gather relevant information from a variety of sources;
        - 110.6.b.13.E: identify primary and secondary sources;
        - 110.6.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.11: 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 uses appropriate conventions. The student is expected to:

- 110.7.b.11.D: edit drafts using standard English conventions, including:
    - 110.7.b.11.D.i: complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments;
    - 110.7.b.11.D.ii: past tense of irregular verbs;
    - 110.7.b.11.D.iii: collective nouns;
    - 110.7.b.11.D.iv: adjectives, including their comparative and superlative forms;
    - 110.7.b.11.D.v: conjunctive adverbs;
    - 110.7.b.11.D.vi: prepositions and prepositional phrases and their influence on subject-verb agreement;
    - 110.7.b.11.D.vii: pronouns, including indefinite;
    - 110.7.b.11.D.viii: subordinating conjunctions to form complex sentences;
    - 110.7.b.11.D.ix: capitalization of abbreviations, initials, acronyms, and organizations;
    - 110.7.b.11.D.x: italics and underlining for titles and emphasis and punctuation marks, including quotation marks in dialogue and commas in compound and complex sentences; and
    - 110.7.b.11.D.xi: correct spelling of words with grade-appropriate orthographic patterns and rules and high-frequency words;
- 110.7.b.12: 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:
    - 110.7.b.12.B: compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft;
- 110.7.b.13: 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:
    - 110.7.b.13.A: generate and clarify questions on a topic for formal and informal inquiry;
    - 110.7.b.13.B: develop and follow a research plan with adult assistance;
    - 110.7.b.13.C: identify and gather relevant information from a variety of sources;
    - 110.7.b.13.E: demonstrate understanding of information gathered;

- 110.7.b.13.H: use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Math

- 3rd Grade:
  - 111.5.b.3: Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:
    - 111.5.b.3.A: represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines;
    - 111.5.b.3.F: represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines;
  - 111.5.b.8: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
    - 111.5.b.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals;

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.14.b.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:

        - 112.5.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 4th Grade:
    - 112.6.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.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:
        - 112.6.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 5th Grade:
    - 112.7.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations

        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.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:
        - 112.7.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
    - 112.7.b.12: Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
        - 113.14.c.15.F: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

        - 113.15.c.20: Social studies skills. The student uses geographic tools to collect, analyze, and interpret data. The student is expected to:
            - 113.15.c.20.A: apply mapping elements, including grid systems, legends, symbols, scales, and compass roses, to create and interpret maps;
    - 5th Grade:
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.E: apply foundational language skills to engage in civil discourse about social studies topics, including those with multiple perspectives.

<u>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
    - 3.126.8.c.5: Data literacy, management, and representation--collect data. The student uses digital strategies to collect and identify data. The student is expected to:
        - 3.126.8.c.5.A: identify and collect numerical data such as the price of goods or temperature;
    - 3.126.8.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to analyze data in graphs to identify and discuss trends and inferences.
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

            - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
            - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
        - 4.126.9.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to transform and make inferences about data to answer a question.
- 5th Grade:
        - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
            - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;
        - 5.126.10.c.6: Data literacy, management, and representation--organize, manage, and analyze data. The student uses data to answer questions. The student is expected to use digital tools to analyze and transform data and make inferences to answer questions.

SIX KINDS DO IT ALL

<u>English Language Arts</u>

- 3rd Grade:
        - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
        - 110.5.b.6: 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:
            - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.7: 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:

- 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;
  - 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:

- 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

        - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
        - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.5.b.7: Force, Motion, and Energy: The student knows the nature of forces and the patterns of their interactions. The student is expected:
        - 112.5.b.7.A: demonstrate and describe forces acting on an object in contact or at a distance, including magnetism, gravity, and pushes and pulls
        - 112.5.b.7.B: plan and conduct a descriptive investigation to demonstrate and explain how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons
    - 112.5.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
        - 112.5.b.8.B: plan and conduct investigations that demonstrate how the speed of an object is related to its mechanical energy
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and

cameras, to observe, measure, test, and analyze information

- 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.6.b.7: Force, Motion, and Energy: The student knows the nature of forces and the patterns of their interactions. The student is expected to plan and conduct descriptive investigations to explore the patterns of forces such as gravity, friction, or magnetism in contact or at a distance on an object

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.7.b.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:
    - 112.7.b.2.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 112.7.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
- 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
- 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system

▪ 112.7.b.7: Force, Motion, and Energy: The student knows the nature of forces and the patterns of their interactions. The student is expected to:

- 112.7.b.7.A: investigate and explain how equal and unequal forces acting on an object cause patterns of motion and transfer of energy
- 112.7.b.7.B: design a simple experimental investigation that tests the effect of force on an object in a system such as a car on a ramp or a balloon rocket on a string

<u>Social Studies</u>

- 3rd Grade:
  - ▪ 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - ▪ 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - ▪ 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - ▪ 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

            - 113.15.c.21.C: express ideas orally based on research and experiences;
            - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
        - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.15.c.22.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.
    - 5th Grade:
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
        - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
            - 113.16.c.26.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>Technology Applications</u>

- 3rd Grade:
    - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
        - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:
    - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of

problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

- 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

SUN, TO MOO, TO YOU!

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
  - 110.6.b.7: 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:

- 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

    110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams,

flow charts or sequence maps, and input-output tables that show cause and effect

- 112.5.b.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:
    - 112.5.b.2.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.5.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
    - 112.5.b.8.A: identify everyday examples of energy, including light, sound, thermal, and mechanical

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and

cameras, to observe, measure, test, and analyze information
- 112.6.b.1.E: collect observations and measurements as evidence
- 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.E: investigate the flow of energy and cycling of matter 112.6.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
    - 112.6.b.8.A: investigate and identify the transfer of energy by objects in motion, waves in water, and sound

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.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:
    - 112.7.b.2.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems

- 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.7.b.5.E: investigate the flow of energy and cycling of

- 112.7.b.7: Force, Motion, and Energy: The student knows the nature of forces and the patterns of their interactions. The student is expected to:
  - 112.7.b.7.A: investigate and explain how equal and unequal forces acting on an object cause patterns of motion and transfer of energy
  - 112.7.b.7.B: design a simple experimental investigation that tests the effect of force on an object in a system such as a car on a ramp or a balloon rocket on a string
- 112.7.b.8: Force, Motion, and Energy: The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. The student is expected to:
  - 112.7.b.8.A: investigate and describe the transformation of energy in systems such as energy in a flashlight battery that changes from chemical energy to electrical energy to light energy

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect

relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
- 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

TERRARIUMS: A LOOK AT THE LIVING AND NONLIVING WORLD

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:

- 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:

        - 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.5.b.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:
        - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
        - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
        - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system

- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
- 112.5.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.5.b.13.B: explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.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:
        - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
        - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
        - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
        - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses, laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter

sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.2: Scientific and engineering practices. The student analyzes and interpreted 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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.B: identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems
    - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

- 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem
- 112.7.b.12.B: predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web
- 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

▪ 112.7.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to:

- 112.7.b.13.A: analyze the structures and functions of different species to identify how organisms survive in the same environment

<u>Social Studies</u>

- 3rd Grade:
  - ▪ 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - ▪ 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

TEST TUBE HYDROPONICS

<u>English Language Arts</u>

- 3rd Grade:
  - ▪ 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

- 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;

- 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.B: explain why the conservation of natural resources is important
    - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
        - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
        - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
          living organisms and environments, including common Texas fossils
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems

- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.A: explore and explain how structures and functions of plants such as waxy leaves and deep roots enable them to survive in their environment

5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:

- 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem

Social Studies

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

THE SOIL CHAIN

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

        - 110.6.b.6: 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:
            - 110.6.b.6.H: synthesize information to create new understanding;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.H: synthesize information to create new understanding;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect;
    - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
        - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products;
- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:

- 112.6.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect;

- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

THE ROTTEN TRUTH

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;

            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
        - 110.5.b.6: 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:
            - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.6: 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:
            - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.7.b.6: 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:
            - 110.7.b.6.G: evaluate details read to determine key ideas;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.E: collect observations and measurements as evidence

- 112.5.b.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:
    - 112.5.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
- 112.5.b.10: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:
    - 112.5.b.10.B: investigate and explain how soils such as sand and clay are formed by weathering of rock and by decomposition of plant and animal remains

- 4th Grade:
    - 112.6.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.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:
        - 112.6.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
- 5th Grade:
    - 112.7.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.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:

- 112.7.b.2.B: analyze data by identifying any significant features, patterns, or sources of error

Social Studies

- 3rd Grade:
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

Technology Applications

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;

4th Grade:

- 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
  - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
  - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;

- 5th Grade:

- 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

THE ULTIMATE EFFICIENT RECYCLER

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.F: make inferences and use evidence to support understanding;
        - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.5.b.7: 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:
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.6.b.6: 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:
    - 110.6.b.6.F: make inferences and use evidence to support understanding;
    - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
- 110.6.b.7: 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:
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.F: make inferences and use evidence to support understanding;
        - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.7.b.7: 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:
        110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:

- 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.5.b.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:
    - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.5.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.B: explain why the conservation of natural resources is important
    - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
    - 112.6.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life

- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
    - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.7.b.1.E: collect observations and measurements as evidence
        - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.7.b.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:
        - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.A: develop explanations and propose solutions supported by data and models

            - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.7.b.4.A: explain how scientific discoveries and innovative solutions to problems impact science and society
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
            - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
        - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.

- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
        - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect

relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

THINK IN PICTURES: LIKE DR. GRANDIN

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;
        - 110.5.b.6.H: synthesize information to create new understanding;
        - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.5.b.7: 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:
    - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.6.b.6: 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:
    - 110.6.b.6.G: evaluate details read to determine key ideas;
    - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.6.b.7: 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:
    - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.C: give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively;
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
  - 110.7.b.6: 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:
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
  - 110.7.b.7: 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:
    - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.13: Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present. The student is expected to:
    - 113.14.c.13.A: identify individuals who have discovered scientific breakthroughs or created or invented new technology such as Jonas Salk, Cyrus McCormick, Bill Gates, Louis Pasteur, and others;

- 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.15.B: create and interpret timelines;
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:

    113.14.c.16.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.

- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on knowledge and experiences;

- 113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.15.c.22.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.

- 5th Grade:
    - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
        - 113.16.c.22.A: identify the accomplishments of notable individuals in the fields of science and technology such as Benjamin Franklin, Eli Whitney, John Deere, Thomas Edison, Alexander Graham Bell, George Washington Carver, the Wright Brothers, and Neil Armstrong;
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
        - 113.15.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.16.c.26.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.

TEXAS FARM BUREAU®

Technology Applications

- 3rd Grade:
  - 3.126.8.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 3.126.8.c.1.A: decompose story problems into smaller, manageable subproblems and identify a solution to the problems;
    - 3.126.8.c.1.C: develop a plan collaboratively and document a plan that outlines specific steps taken to complete a project;
- 4th Grade:
  - 4.126.9.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 4.126.9.c.1.A: decompose story problems into smaller, manageable subproblems and discuss and document various solutions to the problems;
    - 4.126.9.c.1.C: communicate design plans and solutions using a variety of options;
- 5th Grade:
  - 5.126.10.c.1: Computational thinking--foundations. The student explores the core concepts of computational thinking, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:
    - 5.126.10.c.1.A: decompose a real-world problem into smaller, manageable subproblems using graphic organizers such as learning maps, concept maps, or other representations of data;

THREE SISTERS GARDEN

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;

- 110.5.b.6: 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:
    - 110.5.b.6.D: create mental images to deepen understanding;
    - 110.5.b.6.F: make inferences and use evidence to support understanding;
    - 110.5.b.6.G: evaluate details read to determine key ideas;
    - 110.5.b.6.H: synthesize information to create new understanding;
- 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;

- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.D: create mental images to deepen understanding;
        - 110.6.b.6.F: make inferences and use evidence to support understanding;
        - 110.6.b.6.G: evaluate details read to determine key ideas;
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:

- 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
- 110.7.b.6: 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:
    - 110.7.b.6.D: create mental images to deepen understanding;
    - 110.7.b.6.F: make inferences and use evidence to support understanding;
    - 110.7.b.6.G: evaluate details read to determine key ideas;
    - 110.7.b.6.H: synthesize information to create new understanding;
- 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
    - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.5.b.1.E: collect observations and measurements as evidence
    - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a

framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
  - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.5.b.11.B: explain why the conservation of natural resources is important
    - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
  - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem
- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.6.b.1.E: collect observations and measurements as evidence
    - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
  - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system

            - 112.6.b.5.E: investigate the flow of energy and cycling of matter through systems
        - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
            - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
        - 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.6.b.12.A: investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter
            - 112.6.b.12.B: describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers
    - 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
            - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.7.b.1.E: collect observations and measurements as evidence
            - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system

- 112.7.b.5.E: investigate the flow of energy and cycling of matter through systems
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources

Social Studies

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.C: analyze information by applying absolute and relative chronology through sequencing,

categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;

VERMICOMPOSTING

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.7: 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:
        - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.7: 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:
    - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.14.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.5.b.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:
        - 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats

- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.5.b.5.E: investigate the flow of energy and cycling of matter through systems
- 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.5.b.12.A: explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy
    - 112.5.b.12.B: identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem

- 4th Grade:
    - 112.6.b.1: Scientific and engineering practices. The student 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:
        - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
    - 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life
- 112.6.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - 112.6.b.12.C: identify and describe past environments based on fossil evidence, including common Texas fossils
- 112.6.b.13: Organisms and Environments: The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - 112.6.b.13.B: differentiate between inherited and acquired physical traits of organisms

- 5th Grade:

- 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
    - 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
    - 112.7.b.1.E: collect observations and measurements as evidence
    - 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions

- 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
- 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources.
- 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
  - 112.7.b.12.A: observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.

Social Studies

- 3rd Grade:

113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
- 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - 113.14.c.15.D: express ideas orally based on knowledge and experiences;

- 4th Grade:
  - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.15.c.21.C: express ideas orally based on research and experiences;
    - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
  - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

WAD-A-WATERSHED

TEXAS FARM BUREAU®

English Language Arts

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.6.b.6: 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:
    - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
  - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
  - 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

Science

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:

- 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.5.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.5.b.1.E: collect observations and measurements as evidence
- 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
- 112.5.b.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:
- 112.5.b.2.C: use mathematical concepts to compare patterns and relationships
- 112.5.b.2.D: evaluate a design or object using criteria

- 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.5.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.5.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems

            - 112.5.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
            - 112.5.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
        - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.5.b.11.B: explain why the conservation of natural resources is important
            - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
        - 112.5.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.5.b.12.C: describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
            - 112.6.b.1.E: collect observations and measurements as evidence
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
            - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
        - 112.6.b.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:
    - 112.6.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.6.b.2.D: evaluate a design or object using criteria
- 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.6.b.5.D: examine and model the parts of a system and their interdependence in the function of the system
    - 112.6.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
    - 112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:
    - 112.6.b.10.A: describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process
    - 112.6.b.10.B: model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice

- 5th Grade:
    - 112.7.b.1: Scientific and engineering practices. The student 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:

- 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
- 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.7.b.1.E: collect observations and measurements as evidence
- 112.7.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
- 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem

- 112.7.b.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:
    - 112.7.b.2.C: use mathematical concepts to compare patterns and relationships
    - 112.7.b.2.D: evaluate a design or object using criteria
- 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
    - 112.7.b.3.A: develop explanations and propose solutions supported by data and models
    - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
- 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.7.b.5.C: use scale, proportion, and quantity to describe, compare, or model different systems
    - 112.7.b.5.D: examine and model the parts of a system and their interdependence in the function of the system

            - 112.7.b.5.G: explain how factors or conditions impact stability and change in objects, organisms, and systems
        - 112.7.b.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to:
            - 112.7.b.10.A: explain how the Sun and the ocean interact in the water cycle and affect weather
            - 112.7.b.10.B: model and describe the processes that led to the formation of sedimentary rocks and fossil fuels
            - 112.7.b.10.C: model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes
        - 112.7.b.12: Organisms and Environments: The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
            - 112.7.b.12.C: describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
        - 113.14.c.16.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.
- 4th Grade:
    - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

- 113.15.c.19.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;

113.15.c.22: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:

- 113.15.c.22.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.

- 5th Grade:
  - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
  - 113.16.c.26: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.16.c.26.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.

WATER SUPPLY

<u>Science</u>

- 3rd Grade:
  - 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.5.b.6.B: describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and that liquids and gases take the shape of their container
    - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid

water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)

- 4th Grade:
  - 112.6.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.6.b.6.A: classify and describe matter using observable physical properties, including temperature, mass, magnetism, relative density (the ability to sink or float in water), and physical state (solid, liquid, gas);
- 5th Grade:
  - 112.7.b.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to:
    - 112.7.b.10.A: explain how the Sun and the ocean interact in the water cycle and affect weather

WHAT'S OUR SOIL WORTH?

<u>English Language Arts</u>

- 3rd Grade:
  - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
  - 110.5.b.6: 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:
    - 110.5.b.6.H: synthesize information to create new understanding;
  - 110.5.b.7: 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:
    - 110.5.b.7.F: respond using newly acquired vocabulary as appropriate;
- 4th Grade:
  - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
    - 110.6.b.7: 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:
        - 110.6.b.7.F: respond using newly acquired vocabulary as appropriate;
  - 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.6: 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:
        - 110.7.b.6.H: synthesize information to create new understanding;
    - 110.7.b.7: 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:
        - 110.7.b.7.F: respond using newly acquired vocabulary as appropriate;

<u>Math</u>

  - 3rd Grade:
    - 111.5.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
        - 111.5.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
    - 111.5.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies

and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:

- 111.5.b.4.G: use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;

- 4th Grade:
  - 111.6.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.6.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
  - 111.6.b.4: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.6.b.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.
- 5th Grade:
  - 111.7.b.1: Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
    - 111.7.b.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;
  - 111.7.b.3: Number and operations. The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:
    - 111.7.b.3.K: add and subtract positive rational numbers fluently;

<u>Science</u>

- 3rd Grade:
  - 112.5.b.1: Scientific and engineering practices. The student 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:

            - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
            - 112.5.b.11.B: explain why the conservation of natural resources is important
            - 112.5.b.11.C: identify ways to conserve natural resources through reducing, reusing, or recycling
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:
            - 112.6.b.10.B: model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice
        - 112.6.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to:
            - 112.6.b.11.A: identify and explain advantages and disadvantages of using Earth's renewable and

nonrenewable natural resources such as wind, water, sunlight, plants, animals, coal, oil, and natural gas
- 112.6.b.11.B: explain the critical role of energy resources and how conservation, disposal, and recycling of natural resources impact the environment and modern life

- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
  - 112.7.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
    - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
  - 112.7.b.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to:
    - 112.7.b.10.C: model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes
  - 112.7.b.11: Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources

<u>Social Studies</u>

- 3rd Grade:
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

            - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
    - 4th Grade:
        - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.15.c.21.C: express ideas orally based on research and experiences;
            - 113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
    - 5th Grade:
        - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
            - 113.16.c.25.C: express ideas orally based on research and experiences;
            - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;

WHEAT GERM DNA

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.C: speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.5.b.6: 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:
        - 110.5.b.6.G: evaluate details read to determine key ideas;

            - 110.5.b.6.H: synthesize information to create new understanding;
            - 110.5.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
        - 110.5.b.7: 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:
            - 110.5.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
        - 110.6.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
        - 110.6.b.6: 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:
            - 110.6.b.6.G: evaluate details read to determine key ideas;
            - 110.6.b.6.H: synthesize information to create new understanding;
            - 110.6.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
        - 110.6.b.7: 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:
            - 110.6.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.7.b.4: Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text.
    - 110.7.b.6: 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:
        - 110.7.b.6.G: evaluate details read to determine key ideas;
        - 110.7.b.6.H: synthesize information to create new understanding;
        - 110.7.b.6.I: monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.
    - 110.7.b.7: 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:
        - 110.7.b.7.E: interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards

- 112.5.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; wind vanes; rain gauges; graduated cylinders; beakers; digital scales; hot plates; meter sticks; magnets; notebooks; Sun, Earth, Moon system models; timing devices; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information

- 4th Grade:
  - 112.6.b.1: Scientific and engineering practices. The student 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:
    - 112.6.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
    - 112.6.b.1.D: use tools, including hand lenses; metric rulers; Celsius thermometers; calculators; laser pointers; mirrors; digital scales; balances; graduated cylinders; beakers; hot plates; meter sticks; magnets; notebooks; timing devices; sieves; materials for building circuits; materials to support observation of habitats of organisms such as terrariums, aquariums, and collecting nets; and materials to support digital data collection such as computers, tablets, and cameras, to observe, measure, test, and analyze information
- 5th Grade:
  - 112.7.b.1: Scientific and engineering practices. The student 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:
    - 112.7.b.1.C: demonstrate safe practices and the use of safety equipment during classroom and field investigations as outlined in Texas Education Agency-approved safety standards
      112.7.b.1.D: use tools, including calculators, microscopes, hand lenses, metric rulers, Celsius thermometers, prisms, concave and convex lenses,

laser pointers, mirrors, digital scales, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, notebooks, timing devices, materials for building circuits, materials to support observations of habitats or organisms such as terrariums and aquariums, and materials to support digital data collection such as computers, tablets, and cameras to observe, measure, test, and analyze information

Social Studies

- 3rd Grade:
  - 113.14.c.13: Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present. The student is expected to:
    - 113.14.c.13.A: identify individuals who have discovered scientific breakthroughs or created or invented new technology such as Jonas Salk, Cyrus McCormick, Bill Gates, Louis Pasteur, and others;
  - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - 113.14.c.14.C: interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting;
  - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
  - 113.14.c.16: Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to:
    - 113.14.c.16.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.
- 4th Grade:
  - 113.15.c.19: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a

variety of valid sources, including technology. The student is expected to:
        - 113.15.c.19.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;
- 5th Grade:
    - 113.16.c.22: Science, technology, and society. The student understands the impact of science and technology on society in the United States. The student is expected to:
        - 113.16.c.22.A: identify the accomplishments of notable individuals in the fields of science and technology such as Benjamin Franklin, Eli Whitney, John Deere, Thomas Edison, Alexander Graham Bell, George Washington Carver, the Wright Brothers, and Neil Armstrong;
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.15.c.23.C: analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.25.C: express ideas orally based on research and experiences;

WHIPPING BUTTER INTO SHAPE

<u>English Language Arts</u>

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:

            - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 4th Grade:
        - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 5th Grade:
        - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
            - 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

<u>Math</u>

- 3rd Grade:
    - 111.5.b.7: Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:
        - 111.5.b.7.E: determine liquid volume (capacity) or weight using appropriate units and tools.

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.5.b.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:
        - 112.5.b.2.B: analyze data by identifying any significant features, patterns, or sources of error

- 112.5.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
    - 112.5.b.6.C: predict, observe, and record changes in the state of matter caused by heating or cooling in a variety of substances such as ice becoming liquid water, condensation forming on the outside of a glass, or liquid water being heated to the point of becoming water vapor (gas)

- 4th Grade:
    - 112.6.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.6.b.1.E: collect observations and measurements as evidence
        - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
    - 112.6.b.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:
        - 112.6.b.2.B: analyze data by identifying any significant features, patterns, or sources of error
    - 112.6.b.6: Matter and energy. The student knows that matter has measurable physical properties that determine how matter is identified, classified, changed, and used. The student is expected to:
        - 112.6.b.6.A: classify and describe matter using observable physical properties, including temperature, mass, magnetism, relative density (the ability to sink or float in water), and physical state (solid, liquid, gas)

- 5th Grade:
    - 112.7.b.1: Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations

- 112.7.b.1.B: use scientific practices to plan and conduct descriptive investigations and use engineering practices to design solutions to problems
- 112.7.b.1.E: collect observations and measurements as evidence

- 112.7.b.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:
    - 112.7.b.2.B: analyze data by identifying any significant features, patterns, or sources of error

WHO GREW MY SOUP?

English Language Arts

- 3rd Grade:
    - 110.5.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.5.b.1.D: work collaboratively with others by following agreed-upon rules, norms, and protocols;
    - 110.5.b.6: 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:
        - 110.5.b.6.H: synthesize information to create new understanding;
- 4th Grade:
    - 110.6.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
        - 110.6.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.
    - 110.6.b.6: 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:
        - 110.6.b.6.H: synthesize information to create new understanding;
- 5th Grade:
    - 110.7.b.1: Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral

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

- 110.7.b.1.D: work collaboratively with others to develop a plan of shared responsibilities.

- 110.7.b.6: 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:
    - 110.7.b.6.H: synthesize information to create new understanding;

<u>Math</u>

- 3rd Grade:
    - 111.5.b.8: Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:
        - 111.5.b.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals;

<u>Science</u>

- 3rd Grade:
    - 112.5.b.1: Scientific and engineering practices. The student 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:
        - 112.5.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
        - 112.5.b.1.E: collect observations and measurements as evidence
        - 112.5.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect
        - 112.5.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.5.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.5.b.3.A: develop explanations and propose solutions supported by data and models

            - 112.5.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
            - 112.5.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
        - 112.5.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
            - 112.5.b.4.B: 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 to investigate STEM careers
        - 112.5.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
            - 112.5.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
        - 112.5.b.11: Earth and space. The student knows that there are recognizable processes that change Earth over time. The student is expected to:
            - 112.5.b.11.A: explore and explain how humans use natural resources such as in construction, in agriculture, in transportation, and to make products
    - 4th Grade:
        - 112.6.b.1: Scientific and engineering practices. The student 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:
            - 112.6.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations
            - 112.6.b.1.E: collect observations and measurements as evidence
            - 112.6.b.1.F: construct appropriate graphic organizers to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect

        - 112.6.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem
    - 112.6.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.6.b.3.A: develop explanations and propose solutions supported by data and models
        - 112.6.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats
        - 112.6.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion
    - 112.6.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.6.b.4.B: 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 to investigate STEM careers
    - 112.6.b.5: Recurring Themes and Concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.6.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions
    - 112.6.b.10: Earth and space. The student knows that there are processes on Earth that create patterns of change. The student is expected to:
        - 112.6.b.10.C: differentiate between weather and climate
- 5th Grade:
        - 112.7.b.1: Scientific and engineering practices. The student 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:
        - 112.7.b.1.A: ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

        - 112.7.b.1.E: collect observations and measurements as evidence;
        - 112.7.b.1.F: construct appropriate graphic organizers used to collect data, including tables, bar graphs, line graphs, tree maps, concept maps, Venn diagrams, flow charts or sequence maps, and input-output tables that show cause and effect;
        - 112.7.b.1.G: develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.
    - 112.7.b.3: Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
        - 112.7.b.3.A: develop explanations and propose solutions supported by data and models;
        - 112.7.b.3.B: communicate explanations and solutions individually and collaboratively in a variety of settings and formats;
        - 112.7.b.3.C: listen actively to others' explanations to identify relevant evidence and engage respectfully in scientific discussion;
    - 112.7.b.4: Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to:
        - 112.7.b.4.B: 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 to investigate STEM careers.
    - 112.7.b.5: Recurring themes and concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:
        - 112.7.b.5.A: identify and use patterns to explain scientific phenomena or to design solutions;

<u>Social Studies</u>

- 3rd Grade:
    - 113.14.c.14: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:

        - 113.14.c.14.D: interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps;
    - 113.14.c.15: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.14.c.15.D: express ideas orally based on knowledge and experiences;
- 4th Grade:
    - 113.15.c.21: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.15.c.21.C: express ideas orally based on research and experiences;

      113.15.c.21.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;
- 5th Grade:
    - 113.16.c.23: Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
        - 113.16.c.23.D: organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps;
    - 113.16.c.25: Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
        - 113.16.c.25.C: express ideas orally based on research and experiences;
    - 113.16.c.25.D: create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies;