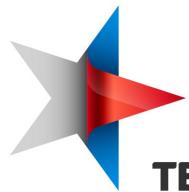


Cotton

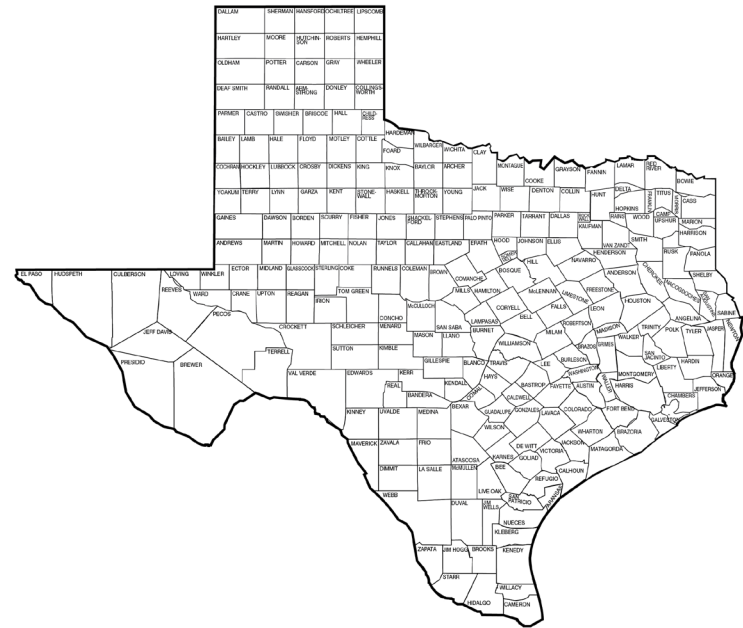


**TEXAS
FARM
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Cotton Planting

Cotton Planting

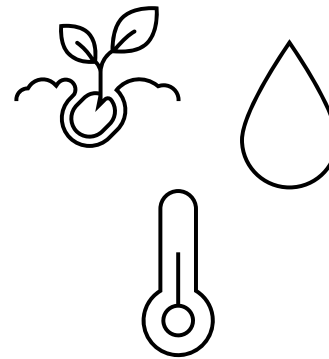
- Cotton is a drought resistant crop
- So, where is it grown in Texas?



Cotton Planting

- When is cotton planted in Texas?
 - Planting time varies depending on the location.
 - [Overview of the Cotton Producing Regions of Texas](#)
 - Take time to read and analyze this document

- Planting requires a good awareness of the environmental conditions:
 - Temperature
 - Freezing conditions
 - Soil temperature
 - Moisture/Precipitation
 - Soil viability
 - Length of growing season



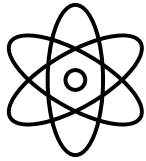
Cotton Planting

Soil Testing

Farmers test the soil before planting to determine soil viability and nutrient needs



Cotton Planting



Activity 1: What does the soil tell us?

- Divide students into groups
- Students will research how/where to send soil for testing
- Students should consider contacting the local Texas A&M Extension office to learn about the process
- Students will speak with a cotton farmer to learn more about why soil testing is important from his/her perspective

Research Should Answer:

What does soil testing reveal about the soil?

What components are ideal for the soil to include when growing cotton?

- Conduct soil testing around the school (or school garden) OR coordinate with a local farmer to test his or her soil
- The soil sample or samples should be submitted for testing and analyzed when results are received
- Make conclusions and record a summary of conclusions on the “Soil Testing Conclusions and Summary” document

Cotton Growing Cycle

Cotton Growing Cycle

Stages of Growth

1. Germination and Emergence

2. Seedling Establishment

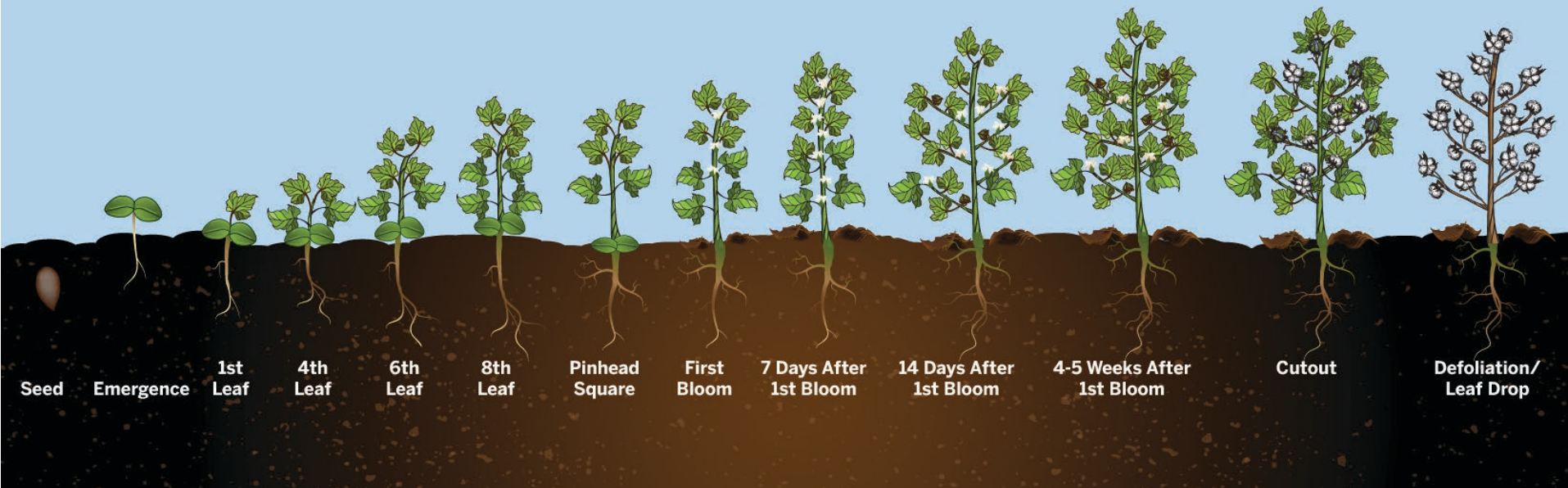
3. Leaf Area and Canopy Development

4. Flowering and Boll Development

5. Maturation (Open Boll)

Cotton Growing Cycle

STAGES OF COTTON PLANT GROWTH



Cotton Growing Cycle

Weed Growth & Management

- Weeds are the most common issue present throughout the growing cycle; however, pests can also be present at different growing stages
- Weeds compete for the nutrients in the soil that the cotton plants need
- Study the [Weed and Brush Management in Texas](#) document to learn about the following management techniques

Weed Management Techniques
Preventative
Cultural (I.e. prescribed fire)
Mechanical (I.e. mowing or shredding)
Biological (I.e. grazing livestock)
Chemical (I.e. Herbicide)

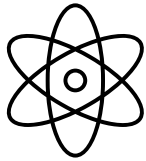
Cotton Growing Cycle

Weed Identification

- Utilizing the [Weed Management in Texas Cotton](#) document, study the most common weeds found in Texas cotton fields
- Dichotomous Key Identification
 - Practice using a dichotomous key to determine weed identity
 - <https://prezi.com/ha-sf9j0ehkn/classified-crop-case-files/>
- Analyze weed samples using digital microscopes (if available)

Cotton Growing Cycle

Weed Control



Activity 2: Sample Chemical Program

- Divide students into groups
- Speak to two farmers about their responsible chemical program and how technology such as drones and other imaging identify issues in their fields
 - Determine: How does technology help and what limitations does such technology have?

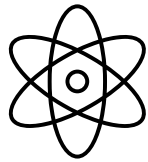
Consider:

Based on your conversations and knowledge gained from other research, what should your first step be when developing a chemical program to control weeds?

- Create a sample chemical program based on the following information. You should display your sample program in a PowerPoint or other creative outlet.

Cotton Growing Cycle

Weed Control



Activity 2: Sample Chemical Program

Program Parameters:

Mr. Smith farms cotton in Central Texas. After checking his fields, Mr. Smith noticed a weed issue in one of his fields. The issue is not present throughout the entire field; rather, the issue only seems to be present in three locations around the perimeter. To date, Mr. Smith has not utilized a consistent chemical program. It is June. What might the problematic weed be? Based on this information and what you learned through research, develop a plan to help Mr. Smith combat the weed problem from now until harvest. Your plan should also include a chemical program that Mr. Smith could follow during the next growing season (start to finish).

Cotton Harvesting

Cotton Harvesting

- A cotton field is harvest ready when the leaves have been defoliated
- How does defoliation occur?
 - Naturally (a freeze)
 - Chemical harvest aid
- Harvest aid is sprayed on the plant to help it defoliate at a more rapid pace
 - The use of chemical harvest aid is region specific



Cotton Harvesting

Cotton Stalk Destruction

- Cotton stalk destruction is necessary in some regions due to the boll weevil
 - The boll weevil is a major pest that feeds on the flowers and cotton buds
- Cotton Stalk Destruction occurs:
 - 1. Naturally (freeze)
 - 2. Mechanically (plowing/tilling)
 - 3. Chemically (herbicide)
- Read more about cotton stalk destruction: [Cotton Stalk Destruction with Herbicides](#)



Cotton Harvesting

Cotton Stalk Destruction Zones

- The government regulates cotton stalk destruction and specifies that by which stalks must be destroyed
 - [Texas Department of Agriculture Cotton Stalk Destruction Zones](#)
 - Some counties are not in a zone due to the colder climate where it freezes; therefore, stalk destruction isn't required because the freeze prevents regrowth

Cotton Harvesting

There are two different cotton harvesters used to harvest cotton out of the field

Cotton Harvest Techniques:

1. Cotton Stripper
2. Cotton Picker

See page four of the [Crop Profile for Cotton in Texas Document](#) for details about the specifics of each technique.

The most significant difference between the two machines is the header on each. Look closely at the next two photos.

Cotton Harvesting

Cotton Picker

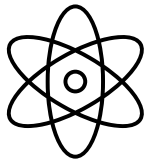


Cotton Harvesting

Cotton Stripper



Cotton Harvesting



Activity 3: Cotton Harvest

- Divide students into groups
- Assign each group a Texas county
- Each group should identify the cotton stalk destruction zone that the county is in (if the county is in a zone)
 - If the county is not in a zone, why not?

Research the harvest details for that county:

1. Harvest date

2. Use of a harvest aid or no harvest aid

3. Harvest technique

4. Average yield for that area

*What factors contribute to yield?

5. Other details interesting and pertinent to growing cotton in that area

- Create a creative 3-minute educational video that could be used in a public setting to teach about cotton production in the area that they research

Cotton Ginning

Cotton Ginning



Test Your Knowledge

[Join the Nearpod Quiz](#)

Utilize the access code from your teacher

Cotton Ginning

Test Your Knowledge

Quiz Yourself!

1. Who invented the cotton gin?
2. What year was the cotton gin invented?
3. Where (city and state) is the largest cotton gin in the United States located?
4. What is the fiber called that is left on the seed once the majority of lint is removed during the ginning process?
5. True or False: The cotton gin cleans the cotton AND separates the link from the seed.
6. True or False: Cotton seed is used to feed cattle.
7. Which of the following foods contains cotton seed oil?
 - A. Peanut Butter
 - B. Milano Cookies
 - C. Cream of Mushroom Soup
 - D. All of the Above

Cotton Ginning

Adobe Walls Gin



Cotton Ginning

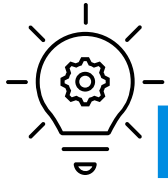
The Ginning Process

- [Read to learn more about the ginning process](#)
- Watch the following “Cotton Ginning Process” video



Cotton Ginning

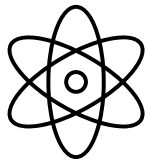
The Ginning Process



Think Critically!

What careers do you see, not see (i.e., those who might work behind the scenes or not directly in the gin), and think of when you watched the video that play a role in getting cotton from the field to the store?

Cotton Harvesting



Activity 4: Careers

- Divide students into groups
- Each group should pick a different career from the “Career Cluster” handout and research it
- After researching each group should give a presentation to the class as if they work for the human resource department of a company hiring for this position
 - Students should role play and present why this job is one someone should consider

***The following information must be provided, but students are encouraged to be creative and provide all the information about the role and the company that might be of interest to a qualified candidate.**

1. Career

2. Education Requirements

3. Salary/Pay

4. Location

5. What is an employer looking for (i.e., expectations) in a person who fulfills this role?

Cotton Ginning

How does the farmer get paid?

- Overview
 - Farmers must wait on the cotton to be ginned and graded before being paid
 - The farmer's pay is dependent on the grade of the cotton – each bale of cotton is graded in a USDA laboratory. The better the cotton grades, the more the farmer is paid
- [This](#) document provides more information a how the farmer is paid

Dollar Breakdown

The Farmer's Share

Where does the money go when we purchase food?

Misconception:

When food prices increase in the grocery store, the farmer gets paid more.

Truth:

Farmers do not necessarily get paid more when food prices increase in the grocery store

For example, if fuels prices go up and cause an increase in food prices, farmers and ranchers do not benefit from the food price increase. How do you know about specific brands of food? The brands behind your favorite syrup, cereal, or ice cream use advertising to promote and garner interest from consumers, retailers, and purchasers in the restaurant industry

The Farmer's Share



Test Your Knowledge

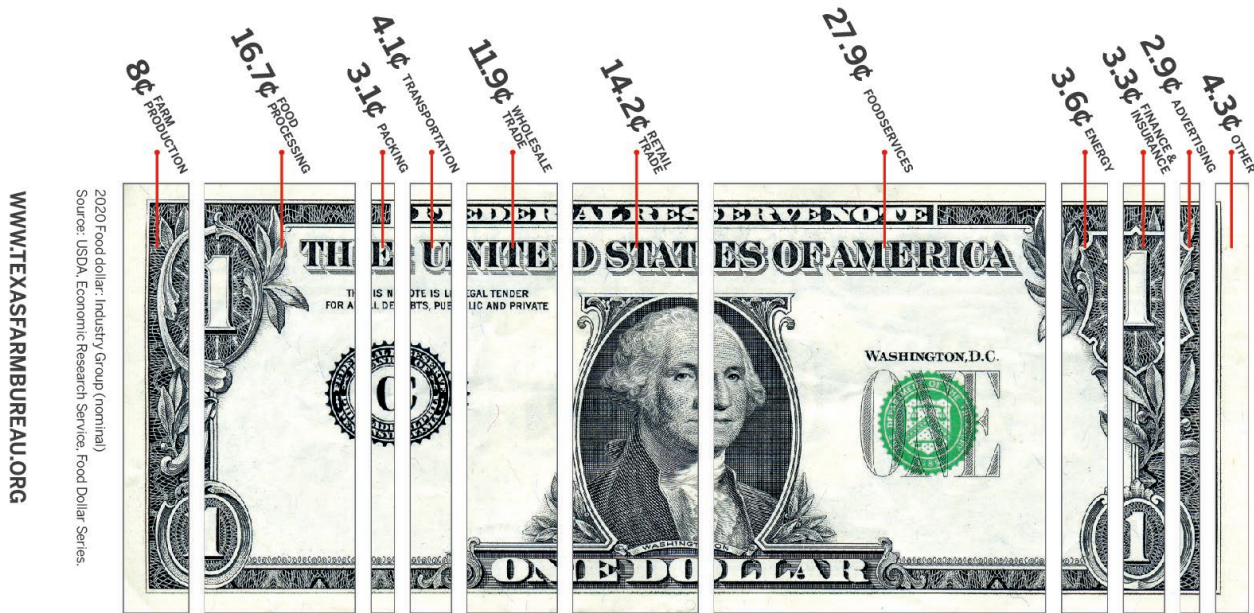
[Join the Nearpod Quiz](#)

the access code from your teacher

The Farmer's Share

Where does the money go when we purchase food?

What is the breakdown of the food dollar?



WWW.TEXASFARBUREAU.ORG

2020 Food dollar - Industry Group (nominal)
Source: USDA, Economic Research Service, Food Dollar Series.

Farmers and ranchers receive 8 cents of your food dollar after accounting for operational expenses.

