



# GEORGIA MIDDLE SCHOOL

Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

## AGRICULTURE

**COURSE:** Exploring Agriculture Education

**UNIT 1:** Agriculture Across America

### INTRODUCTION

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**Annotation:**

This unit includes lessons that cover major events in agricultural history. Lessons explore the benefits of agriculture to every citizen and to the economies of Georgia and the United States.

**Special Note:** Lesson 4 requires the use of the board games Farm-Opoly, which is available for \$24.95 at <http://www.lateforthesky.com> under the Specialty section, and Life on the Farm, which can be purchased for \$21.50 from [www.enasco.com](http://www.enasco.com).

**Grade(s):**

X	6 <sup>th</sup>
	7 <sup>th</sup>
	8 <sup>th</sup>

**Time:**

Ten 50 minute class periods

**Author:**

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**Students with Disabilities:**

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided appropriately. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation. Many students (both with and without disabilities) who struggle with reading may benefit from the use of text reading software or other technological aids to provide access to printed materials. Many of these are available at little or no cost on the internet.

## FOCUS STANDARDS

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### GPS Focus Standards:

- MSAGED6-1**      **Students will demonstrate the importance of agriculture in daily life.**  
a) Describe and explain the impact of agriculture on daily life.  
b) Describe and demonstrate safe operation of agricultural lab equipment.  
c) Identify the sources of different types of food and fiber.
- MSAGED6-2**      **Students will express an understanding of the history of American agriculture.**  
a) Specify and explain the role of agriculture in the formation of the US.  
b) Specify and explain the changes in agriculture over the last 200 years.  
c) Analyze the impact of technological advancement in agriculture.
- MSAGED6-3**      **Students will state the importance of Georgia agriculture.**  
a) Summarize the importance of agriculture to Georgia's economy.  
b) Identify the top ten agricultural commodities and economic value.

### GPS Academic Standards:

- S6CS2**      **Students will use standard safety practices for all classroom laboratory and field investigations.**
- S6CS8**      **Students will investigate the characteristics of scientific knowledge and how it is achieved.**
- M6D1**      **Students will pose questions, collect data, represent and analyze the data, and interpret results.**
- M6N1**      **Students will understand the meaning of the four arithmetic operations as related to positive rational numbers and will use these concepts to solve problems.**

### National / Local Standards / Industry / ISTE:

## UNDERSTANDING & GOALS

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### Enduring Understandings:

- Food and fiber are basic human needs supplied by the agricultural industry. From farm to the table, agriculture makes life possible and contributes to the economy. A good understanding of agriculture production and agricultural history is important to the continued success of agriculture and society.

### Essential Questions:

- What items and products does the word "agriculture" encompass?
- How do agricultural byproducts affect your daily life?
- How is math used on the farm?
- Where does your food come from?
- Why do America and Canada have such an affordable food supply?
- Where are agricultural industries located throughout the country?
- How do we work safely in an agricultural education lab?
- How has agriculture changed throughout history?
- Is Georgia an agriculture state?

### Knowledge from this Unit:

Students will:

- Identify major historical developments in agriculture history.
- Identify Georgia's top 10 Crops.
- Locate food production areas across the United States.
- List benefits of agriculture in daily life, in Georgia, and in the United States.

### Skills from this Unit:

## ASSESSMENTS

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### Assessment Method Type:

- ☐ Pre-test
- ☐ Objective assessment - multiple-choice, true- false, etc.
  - ☐ Quizzes/Tests
  - ☐ Unit test
- ☒ Group project
- ☒ Individual project
- ☐ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
  - ☐ Self-check rubrics
  - ☐ Self-check during writing/planning process
  - ☐ Journal reflections on concepts, personal experiences and impact on one's life
  - ☐ Reflect on evaluations of work from teachers, business partners, and competition judges
  - ☐ Academic prompts
  - ☐ Practice quizzes/tests
- ☐ Subjective assessment/Informal observations
  - ☐ Essay tests
  - ☐ Observe students working with partners
  - ☐ Observe students role playing
- ☐ Peer-assessment
  - ☐ Peer editing and commentary of products/projects/presentations using rubrics
  - ☐ Peer editing and/or critiquing
- ☐ Dialogue and Discussion
  - ☐ Student/teacher conferences
  - ☐ Partner and small group discussions
  - ☐ Whole group discussions
  - ☐ Interaction with/feedback from community members/speakers and business partners
- ☐ Constructed Responses
  - ☐ Chart good reading/writing/listening/speaking habits
  - ☐ Application of skills to real-life situations/scenarios
- ☐ Post-test

### Assessment Attachments and/or Directions:

Ag from A to Z Rubric  
Timeline of the Land

## LESSON PLANS

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## • INTRODUCTION

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1. Identify the Standards. Standards should be posted in the classroom for each lesson.

**MSAGED6-1**      **Students will demonstrate the importance of agriculture in daily life.**  
a) Describe and explain the impact of agriculture on daily life.  
b) Describe and demonstrate safe operation of agricultural lab equipment.  
c) Identify the sources of different types of food and fiber.

**MSAGED6-2**      **Students will express an understanding of the history of American agriculture.**  
a) Specify and explain the role of agriculture in the formation of the US.  
b) Specify and explain the changes in agriculture over the last 200 years.  
c) Analyze the impact of technological advancement in agriculture.

**MSAGED6-3**      **Students will state the importance of Georgia agriculture.**  
a) Summarize the importance of agriculture to Georgia's economy.  
b) Identify the top ten agricultural commodities and economic value.

**S6CS2**              **Students will use standard safety practices for all classroom laboratory and field investigations.**

**S6CS8**              **Students will investigate the characteristics of scientific knowledge and how it is achieved.**

**M6D1**              **Students will pose questions, collect data, represent and analyze the data, and interpret results.**

**M6N1**              **Students will understand the meaning of the four arithmetic operations as related to positive rational numbers and will use these concepts to solve problems.**

1. Review Essential Question(s). Post Essential Questions in the classroom.

- How do we work safely in an agricultural education lab?

3. Identify and review the unit vocabulary. Terms may be posted on word wall.

Accident	Fiber	Personal Protective Equipment
Agriculture	Forestry	Safe
Byproduct	Harvester	Safety
Farm	Invention	Safety glasses
Farming	Material Safety Data Sheet	

## • LESSON 1: How Much Do You Know About Georgia Agriculture?

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1. Review Essential Questions. Post Essential Questions in the classroom.

- Is Georgia an agriculture state?

2. Class Starter
  - Pre-test students to see how much they know about Georgia agriculture using the **Georgia Ag Trivia Quiz Game**.
    - See attached supplementary files.
  - If time permits, play the **Georgia State Symbols Quiz Game** as well.
    - See attached supplementary files.
3. A Look at Georgia Agriculture
  - Have students complete the **A Look at Georgia Agriculture** handout either as individuals or split into groups.
    - See attached supplementary files.

## • **LESSON 2: Agriculture from A to Z**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - What items and products does the word "agriculture" encompass?
2. Agriculture is All Over the Alphabet
  - Have each student take out a piece of paper and label each line with one letter of the alphabet, from A all the way to Z.
  - Students will then list one item associated with agriculture for each letter. Tell the students they are to only list nouns. The first student to finish his agricultural alphabet gets a prize.
    - **Examples:**
      - A = Apple, B = Blueberry, C = Cotton
3. Alphabet Posters
  - Divide students into groups of two to three. Tell students this project may take several days to complete. Teachers may choose to make the project in- or out-of-class.
  - Instruct each group to collaborate and choose the best items from their agricultural alphabets to put on a poster. Each letter must still be represented.
  - Have students research some interesting agricultural facts about each item. It needs to be a fact the student did not already know, and students are allowed to use brand names in their facts.
    - **Examples:**
      - P = Poultry. Georgia is the leading poultry producer in the world.
      - C = Corn. Corn byproducts can be found in many everyday products, including sodas and toothpastes.
  - On poster board or large sheets of paper, have each group graphically organize the alphabet, making sure to leave room for pictures and writing next to each letter.
  - Instruct students to put pictures and their agriculture facts next to each letter on their poster.
  - Each group can present their poster to the class. The posters can also be posted in the hallway.
  - Grade the posters using the **Ag From A to Z Poster** rubric. The rubric may need to be modified depending on the qualifications you want the students to meet and the time frame you have.
    - See attached supplementary files.

## • **LESSON 3: Where did it come from?**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - How do agricultural byproducts affect your daily life?

## 2. Animal Byproducts Matching and Discussion

- Print out several sets of the **Byproducts Cards**, one for each group of students. Pre-cut the cards and place them in envelopes. The cards can be laminated to extend their use.
  - See attached supplementary files.
- Split students into groups, and give each group an envelope with a set of the cards.
- Have each group try to match the item cards with the corresponding animal byproduct card.
- Once each group has matched their cards together, go over the answers with the students.
  - Ask students, "Do you use any of these items on a daily basis?"
  - Did you know animals could be used to make things other than food?
  - Did any of the matched pairs surprise you? Which ones, and why?
- **Special Note:** If your classroom has a SmartBoard, the **Byproducts from Cattle and Pigs** and **Byproducts Answers to Cards** activity can be used.
  - See attached supplementary files.

## 3. Where do byproducts come from?

- Have each student research a livestock animal or crop. Instruct students to list as many products and byproducts created from the animal as they can. The topic can either be chosen or assigned by the teacher.
- Instruct students to creatively organize their research on a poster that can be presented to the class.

## 4. History of Byproducts

- Assign groups of students to research one of the products used in the matching and discussion activity.
- **Example: The Tennis Racket**
  - Tennis rackets were first used in 1874. During this time they were strung using the outer skin of sheep intestines, known as serosa.
  - After WWII, a shortage of sheep gut caused manufacturers to look for alternative ways to string their rackets. Pig and horse gut strings did not work well, so strings made from cow gut were eventually adopted as a substitute for sheep gut.
  - Because cow gut is longer than sheep gut, less animals were needed to make a set of strings for a racket. This also meant less strings were required for each racket, leading to faster stringing times and longer use of the string.

## • LESSON 4: Math on the Farm

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### 1. Review Essential Questions. Post Essential Questions in the classroom.

- How is math used on the farm?

2. Lead a discussion about how math can be used on a farm.
  - What are some ways you use math outside of the classroom?
    - **Examples:**
      - Finding the correct change to buy something at the store
      - Making a budget of your allowance
      - Parents paying taxes
  - How can math help farmers keep records of their livestock and crops?
    - **Examples:**
      - Knowing how many head of livestock they have
      - Creating a farm budget
      - Keep track of prices they can sell their produce for
  - If you owned a farm, what are some things you would budget for?
    - **Examples:**
      - Feed, hay and bedding for livestock
      - Fertilizer and seeds
      - Machinery and repair costs
3. Farm-Opoly Game
  - Have students split into groups to play the board game Farm-Opoly.
  - Instruct students to purchase at least four properties in the given time frame, and have them record a fact about the farm they bought on the **Farmopoly** worksheet.
    - See attached supplementary files.
4. Life on the Farm Game
  - Break students into groups to play the Life on the Farm board game.
  - Have students use their record-keeping skills to keep track of their money and cows using the **Life on the Farm Worksheet**.
    - See attached supplementary files.
  - After the game is over, have students complete the questions on the **Life on the Farm Board Game** handout.
    - See attached supplementary files.

## • **LESSON 5: Where Food Comes From**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - Where does your food come from?
2. Favorite Foods
  - Lead a discussion about students' favorite foods.
    - What are some of your favorite foods?
    - What are some of the ingredients in these foods?
    - What animal or plant did the ingredients and food come from?

### 3. Farm Web Activity

- Have students go to [http://www.mda.state.md.us/mdfarmtoschool/pdf/f2s\\_farmweb.pdf](http://www.mda.state.md.us/mdfarmtoschool/pdf/f2s_farmweb.pdf) and view a sample **Farm Web**.
  - See attached supplementary files.
- Split students into small groups to make their own farm web on poster board.
  - Instruct students to begin the center of their web with a graphic or photograph of a farm. The next branches of the web should be crops and livestock produced at the farm. Each of these branches must then branch out to a product or byproduct created from it.
- **Note:** If your classroom has a SmartBoard, the optional **Farm Web** activity for SmartBoards can be used as well.

## • LESSON 6: Food Prices Around the World

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - Why do America and Canada have such an affordable food supply?
2. Have students complete the **Food Prices Around the World** worksheet.
  - See attached supplementary files
3. Lead a discussion on the cost of food in different countries.
  - Ask students, "How much do you think you spend on food each week?"
  - What foods do you think are expensive?
  - What foods do you think are inexpensive?
  - If you lived in a country other than the U.S. or Canada, how much of your income would you be willing to spend on food each week? Why?
  - Why do you think people choose to farm and grow their own food instead of purchasing food from a grocery store or market?

## • LESSON 7: Agriculture Then and Now

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - How has agriculture changed over time?
2. Timeline of the Land
  - Have students create a timeline using the dates on the **Timeline of the Land-new** worksheet. They can use the template on the **Timeline of the Land** sheet, or create their own.
    - See attached supplementary files
  - After students have completed their timeline, have them answer the **Timeline of the Land Questions**.
    - See attached supplementary files
3. Let students match up new technology with traditional agricultural practices using the **Then and Now** handout.
  - See attached supplementary files



4. Lead a discussion about agriculture then and now.
  - How many of you had family members who farmed?
  - What are some of the technology changes that have occurred during your lifetime?
  - Which agricultural event surprised you the most?
  - Why do you think agriculture has changed so much?

### • **LESSON 8: Agriculture Scavenger Hunt**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - What items and products does the word “agriculture” encompass?
2. Agriculture in the House
  - Have students go to <http://www.farmbureaukids.com/kidscorner/hunt.html>.
  - Give students the **Webscavenger – Agriculture Scavenger Hunt** worksheet. Instruct students to do the online scavenger hunt and answer the corresponding questions on the worksheet.
    - See attached supplementary files.
3. Lead a discussion about what students learned during the scavenger hunt.
  - What fact surprised you the most?
  - What facts did you know already?
  - Which of these products do you use most?
  - Could you go a day without using an agriculture product?

### • **LESSON 9: Where in the U.S.?**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - Where are the different agriculture industries located in the United States?
2. Incorporate Geography
  - Give each student a copy of either the **Where in the US does your food come from?** or the **Where in the US does your food come from? v2** worksheets.
    - See attached supplementary files
  - Make sure students have colored markers, pencils, pens or crayons to do the worksheet.

### • **LESSON 10: Where's Agriculture?**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - What items and products does the word “agriculture” encompass?
2. Where's Agriculture Activity
  - Either have students go to <http://www.gov.mb.ca/agriculture/wheresagr/> or use the **Where's Agriculture** brochure to find which agricultural products are used to make everyday objects.
    - See attached supplementary files
  - Instruct students to complete the **Where's Agriculture-Worksheet** during the activity.
    - See attached supplementary files
  - After students have completed the activity, discuss the answers to the worksheet with the class.

## • **LESSON 11: The Last Crop**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - How has agriculture changed over time?
2. Lead a discussion about farmland today.
  - Ask students, "What do you think is happening to the amount of farmland?"
    - **Examples:**
      - The amount of farmland is shrinking
  - Why do you think there is less farmland now?
    - **Examples:**
      - Farmland is being used for subdivisions and roads
      - Cities are expanding into farm areas
      - Good farmland is desirable for homes, offices, and roads
  - What are some of the major crops produced on farmland today?
  - Where is most of America's farmland?
3. The Last Crop Activity
  - Provide students with **The Last Crop** handout and have them complete it.
    - See attached supplementary files
  - Lead a discussion about the answers to the handout.
    - Ask students, "What surprised you about the use of land?"
    - Which part of the city do you think people would be willing to do without?
    - Do you think the city is encroaching into farmland in our community?

## • **LESSON 12: Georgia's Agriculture Facts -- How Does Georgia Rank?**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - Is Georgia an agriculture state?
2. Have students review the **Georgia Ag Fact Sheet** document, and discuss it with the class.
  - See attached supplementary files
3. Have students complete the **Georgia Agriculture Facts** worksheet.
  - See attached supplementary files

## • **LESSON 13: Georgia's Top Ten**

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1. Review Essential Questions. Post Essential Questions in the classroom.
  - Is Georgia an agriculture state?
2. Present the **Mind Reader Quiz - Georgia's Top Ten Products** by projecting it for class use.
  - See attached supplementary files
  - Have students complete the math required and review the top ten agricultural products.
3. SmartBoard Activity
  - If your classroom has a SmartBoard, complete the **Georgia's Top Ten** activity.
    - See attached supplementary files

### **Attachments for Learning Experiences:**

Quiz Game Georgia Ag Trivia PowerPoint  
State Symbols Game Quiz Show  
A Look at Georgia Agriculture  
Ag from A to Z Poster  
Byproducts Cards  
Byproducts from Cattle and Pigs—Optional SmartBoard Activity  
Byproducts Answers to Cards—Optional SmartBoard Activity  
Farmopoly  
Life on the Farm Worksheet  
Life on the Farm Board Game  
Farm Web  
Farm Web—Optional SmartBoard Activity  
Food Prices Around the World  
Timeline of the Land-new  
Timeline of the Land  
Timeline of the Land Questions  
Then and Now  
Webscavenger-Agriculture Scavenger Hunt  
Where in the US Does Your Food Come From?  
Where in the US Does Your Food Come From? v2  
Where's Agriculture?  
Where's Agriculture Worksheet  
The Last Crop  
Georgia Ag Fact Sheet  
Georgia Agricultural Facts  
Mind Reader Quiz - Georgia's Top Ten Products  
Georgia's Top Ten—Optional SmartBoard Activity

### **Notes & Reflections:**

Use any of the assignments for assessment purposes. Or, let students write a paragraph answering one of the essential questions.

## **CULMINATING PERFORMANCE TASK**

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**Culminating Unit Performance Task Title:**

**Culminating Unit Performance Task Description/Directions/Differentiated Instruction:**

**Attachments for Culminating Performance Task:**

## UNIT RESOURCES

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### Web Resources:

[http://www.mda.state.md.us/mdfarmtoschool/pdf/f2s\\_farmweb.pdf](http://www.mda.state.md.us/mdfarmtoschool/pdf/f2s_farmweb.pdf)  
[http://food\\_fiber.okstate.edu/timelin1.pdf](http://food_fiber.okstate.edu/timelin1.pdf)  
<http://aqweb.okstate.edu/fourh/aitc/lessons/intermed/timeline.pdf>  
<http://www.farmbureaukids.com/kidscorner/hunt.html>  
<http://forces.si.edu/main/pdf/2-5-AgricultureInYourLife.pdf>  
<http://stuffaboutstates.com/index.html>  
<http://www.gov.mb.ca/agriculture/wheresagr/>

### Attachment(s):

### Materials & Equipment:

### What 21st Century Technology was used in this unit:

<input checked="" type="checkbox"/>	Slide Show Software	<input type="checkbox"/>	Graphing Software	<input type="checkbox"/>	Audio File(s)
<input checked="" type="checkbox"/>	Interactive Whiteboard	<input type="checkbox"/>	Calculator	<input type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Student Response System	<input type="checkbox"/>	Desktop Publishing	<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Web Design Software	<input type="checkbox"/>	Blog	<input type="checkbox"/>	Video
<input type="checkbox"/>	Animation Software	<input type="checkbox"/>	Wiki	<input type="checkbox"/>	Electronic Game or Puzzle Maker
<input type="checkbox"/>	Email	<input checked="" type="checkbox"/>	Website		