



# GEORGIA MIDDLE SCHOOL

Instructional Resources  
CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

## AGRICULTURE

**COURSE:** 02.013 Exploring Agriculture Education

**UNIT 3:** Agriscience Innovations

### INTRODUCTION

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**Annotation:**

This unit includes lessons on how science is related to agriculture. This unit will also cover topics about technology in agriculture and how agriculture provides items needs for human survival. Students will learn the risks that are associated with agriculture today and how those risks have affected the history of agriculture.

**Grade(s):**

<input type="checkbox"/>	6 <sup>th</sup>
<input checked="" type="checkbox"/>	7 <sup>th</sup>
<input type="checkbox"/>	8 <sup>th</sup>

**Time:**

Five 50 minute class periods

**Author:**

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**Additional Author(s):**

**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. 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.

## FOCUS STANDARDS

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### **GPS Focus Standards:**

**MSAGED7-4**– Express an understanding of the area of agriscience.

- a) Explain how science is related to agriculture.
- b) Explain how technology is used in agriculture.
- c) Explain the three basic human needs and sources.

### **GPS Academic Standards:**

**S7CS2** – Students will use standard safety practices for all classroom laboratory and field investigations.

**S7CS5** – Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

**M7P1** – Students will solve problems (using appropriate technology).

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

## UNDERSTANDING & GOALS

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### **Enduring Understandings:**

Agriculture has played a huge role in the modern miracles that most Americans are accustomed to today. Through advancements in technology and agriscience, agriculture has greatly improved the standard of living in American homes today.

### **Essential Questions:**

- How is agriscience in the world around us?
- How are agriculture and science related?
- How has technology changed the way we get our food, clothing, and shelter?
- What are some examples of new technology being used in agriculture?
- How does the new technology advancements cause risks for farmers?

### Knowledge from this Unit:

- Identify ways agriscience is used in the world today
- Describe how technology is used in agriculture today
- Identify how agriculture and science are related
- Explain the associated risks with technology in agriculture

### Skills from this Unit:

- Clear understanding of how agriscience is in the world around us
- Prepare a collage labeling how technology has changed the way we live

## 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(s) Title:

### Assessment(s) Description/Directions:

PowerPoint – **Better Living Through Technology and Research** – PowerPoint covers how agriscience in all around us in the world today – show and discuss PowerPoint with the class.

PowerPoint – **How does agriculture provide basic survival needs?** – PowerPoint covers how agriculture provides humans with their basic survival needs. Also has instructions for the collage project – show and discuss PowerPoint with the class – instruct students on starting their collage

PowerPoint – **Technology in Agriculture** – PowerPoint covers how technology has changed in agriculture throughout history – show and discuss PowerPoint with the class.

Instruction and Work Sheet – **Bet the Farm** – Fun game to help students understand the risks associated with farming today and new technology

Worksheet – **Timeline of Ag and Food Technology** – worksheet to go along with the website indicated on the worksheet– Allows students to use the computers to help the answers the questions on the history of technology in agriculture

### **Attachments for Assessment(s):**

**Better Living Through Technology and Research**

**How Does Agriculture Provide Basic Survival Needs?**

**Technology in Agriculture**

**Bet the Farm**

**Timeline of Ag and Food Technology**

## LESSON PLANS

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### **Lesson Plan(s):**

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

**MSAGED7-4-** Express an understanding of the area of agriscience.

- a) Explain how science is related to agriculture.
- b) Explain how technology is used in agriculture.
- c) Explain the three basic human needs and sources.

### **2. Review Essential Questions.**

How is agriscience in the world around us?

How are agriculture and science related?

How has technology changed the way we get our food, clothing, and shelter?

What are some examples of new technology being used in agriculture?

How does the new technology advancements cause risks for farmers?

### **3. Identify and review the unit vocabulary.**

Agriscience  
Agribusiness  
Technology  
Agricultural Engineering  
Biotechnology

Organic Food  
Biochemistry  
Agriculture Economics  
Yield  
Productivity

#### 4. Assessment Activity.

#### Attachments for Learning Experiences:

PowerPoint – Better Living Through Research and Technology  
PowerPoint – How does agriculture provide basic survival needs?  
PowerPoint – Technology in Agriculture  
Worksheet & Instruction Sheet – Bet the Farm  
Worksheet – Timeline of Agriculture & Food Technology

#### • LESSON 1: Better Living Through Research and Technology

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MSAGED 7-4 – 1 Day Discussion

1. Ask students if they think agriculture is a science?
2. Ask students if they can think of products they use every day that come from agriculture?
3. Discuss with the student how they think these products came about?
4. Show and lead students through the Better Living through Research and Technology PowerPoint making a major emphasize on how agriscience has played a major role in the products we use today.

#### • LESSON 2: How does agriculture provide basic survival needs?

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MSAGED 7-4 – 1 Day Discussion

1. Ask students what are some basic needs humans must have to survive. Write their answers on the board.
2. Ask students how they think they get these items.
3. Show and lead students through the How does agriculture provide basic survival needs? PowerPoint. Discuss how the way humans obtain these survival needs has changed over time.
4. Show the student assignment slide giving instructions on the collage.
5. Instruct students on the instructions for the collage.

#### • LESSON 3: Technology in Agriculture

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#### MSAGED 7-4 – 1 Day Discussion

1. Instruct students to get out a piece of paper.
2. Show and lead students through the student activity at the beginning of the **Technology in Agriculture** PowerPoint.
3. Give the students 7-10 minutes to complete the activity, monitor their progress to look over their impression of today's technology in agriculture
4. Discuss the drawing the students came up with.
5. Discuss how technology has changed over the past 100 years. Show the remaining PowerPoint slides to the class. Discuss advancements in technology in agriculture.
6. Have students change their current day drawing to reflect what they have learned in class.

#### • **LESSON 4: Bet the Farm**

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##### MSAGED 7-4 – 1 Day Student Activity

1. Read over the teacher instructions before the students come into the class.
2. Pass out the student worksheets, **Bet the Farm**
3. Discuss with the students how farmers take great risks when they use new technology in agriculture
4. Read the rules of the game to the students
5. Follow the instruction sheet to get the students through the remaining steps of the game.

#### • **LESSON 5: Timeline of Agriculture and Food Technology**

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##### Student Activity

1. Review with the students some of the advancements in technology that have affected agriculture.
2. Pass out the student worksheet, **Timeline of Agriculture and Food Technology**.
3. Lead students to the correct website to complete the worksheet
4. Monitor students as they use the internet to complete the answers on their student worksheet

#### **Notes & Reflections:**



## **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://en.wikipedia.org/wiki/Timeline\\_of\\_agriculture\\_and\\_food\\_technology](http://en.wikipedia.org/wiki/Timeline_of_agriculture_and_food_technology)

### Attachment(s):

### Materials & Equipment:

- Computer
- Internet
- Projector & Screen
- construction paper
- Markers, Crayons, or Colored Pencils
- Dice
- Glue
- Scissors
- Magazines

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

<input checked="" type="checkbox"/>	Slide Show Software
<input type="checkbox"/>	Interactive Whiteboard
<input type="checkbox"/>	Student Response System
<input type="checkbox"/>	Web Design Software
<input type="checkbox"/>	Animation Software
<input type="checkbox"/>	Email

<input type="checkbox"/>	Graphing Software
<input type="checkbox"/>	Calculator
<input type="checkbox"/>	Desktop Publishing
<input type="checkbox"/>	Blog
<input type="checkbox"/>	Wiki
<input checked="" type="checkbox"/>	Website

<input type="checkbox"/>	Audio File(s)
<input type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Video
<input type="checkbox"/>	Electronic Game or Puzzle Maker