

# **INTRODUCTION TO WORLD AGRICULTURE SCIENCE**

## **Curriculum Content Framework**

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# Curriculum Content Framework

## INTRODUCTION TO WORLD AGRICULTURAL SCIENCE

**Grade Levels:** 7, 8  
**Course Code:** 391025

**Prerequisites:** None

**Course Description:** This is a foundation course for agriculture courses. Basic agriculture concepts are introduced, and students explore careers in the agriculture industry. Students will also be introduced to the FFA, leadership, and Supervised Agricultural Experiences.

### Table of Contents

	Page
Unit 1: Agriculture in Our Lives .....	1
Unit 2: The National FFA Organization .....	3
Unit 3: Animals in Agriculture .....	5
Unit 4: Plants in Agriculture .....	6
Unit 5: Natural Resources.....	7

# Unit 1: Agriculture in Our Lives

## 20 Hours

Terminology: Agribusiness, Agricultural mechanics, Agriculture, Agriscience, Animal science, Biology, Export, Forestry, Horticulture, Import, Technology

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
1.1 Define terms		Foundation	Reading	Applies/Understands technical words that pertain to subject (1.3.6)
1.2 Identify ways in which agriculture affects us every day	1.2.1 List 100 agricultural products	Foundation	Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]
		Interpersonal	Teamwork	Contributes to group with ideas, suggestions, and effort [2.6.2]
1.3 Explain the importance of agriculture to the economy of the United States	1.3.1 Use a math problem to describe the importance of agriculture to the economy	Foundation	Arithmetic/ Mathematics	Applies addition, subtraction, multiplication, and division to real-world situations [1.1.1]
			Reading	Draws conclusions from what is read [1.3.12]
		Thinking	Reasoning	Uses logic to draw conclusions from available information [4.5.6]
1.4 Discuss ways agriculture has changed during the past 100 years		Foundation	Arithmetic/ Mathematics	Uses quantitative data to construct logical explanations for real-world situations [1.1.39]
			Listening	Listens for content [1.2.3]
		Thinking	Seeing Things in the Mind's Eye	Imagines the flow of work activities from narrative

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
				descriptions [4.6.1]
1.5 Identify careers in agriscience, production agriculture, agribusiness, agricultural mechanics, horticulture, forestry, and animal science	1.5.1 Invite speakers from each area to talk to the class about their profession	Foundation  Personal Management	Listening  Arithmetic/ Mathematics  Career Awareness, Development, & Mobility	Listens for content [1.2.3]  Uses quantitative data to construct logical explanations for real-world situations [1.1.39]  Explores career opportunities [3.1.6]  Identifies education and training needed to achieve goals [3.1.8]

## Unit 2: The National FFA Organization 20 Hours

Terminology: American Star Farmer, CDE, SAE, Smith-Hughes Act

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
2.1 Define terms		Foundation	Reading	Applies/Understands technical words that pertain to subject
2.2 List the official FFA colors		Foundation	Reading	Comprehends written information for main ideas [1.3.7]
2.3 Recite the FFA motto		Foundation	Speaking	Applies/Uses technical terms as appropriate to audience [1.5.2]
		Personal Management	Responsibility	Sets high standards for self in completion of a task [3.4.9]
2.4 Illustrate major events in the history of the FFA	2.4.1 Construct a timeline illustrating major events in the history of FFA using the Official FFA Manual Chronological History	Foundation	Reading	Comprehends written information and applies it to a task [1.3.8]
			Writing	Composes and creates a document—letters, manuals, reports, proposals, graphs, flow charts, etc. [1.6.8]
		Thinking	Seeing Things in the Mind's Eye	Imagines the flow of work activities from narrative descriptions [4.6.1]

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
2.5 Explain the purpose of SAEs		Foundation	Arithmetic/ Mathematics	Applies addition, subtraction, multiplication, and division to real-world situations [1.1.1]
			Writing	Organizes information in an appropriate format [1.6.10]
		Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]

## Unit 3: Animals in Agriculture

### 20 Hours

Terminology: Barrow, Beef, Boar, Bull, Calf, Cow, Ewe, Gilt, Heifer, Hen, Lamb, Livestock, Mutton, Pork, Poultry, Ram, Sow, Steer, Wether

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
3.1 Define terms		Foundation	Reading	Applies/Understands technical words that pertain to subject [1.3.6]
3.2 List products obtained from animals		Foundation	Reading	Adjusts reading strategy to purpose and type of reading (skimming and scanning) [1.3.1]
		Personal Management	Responsibility	Exerts a high level of effort and perseverance toward goal attainment [3.4.4]
3.3 Match cuts of meat to the animals from which they are derived		Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
		Thinking	Reasoning	Extracts rules or principles from written information [4.5.4]

## Unit 4: Plants in Agriculture 20 Hours

Terminology: Flower, Leaf, Photosynthesis, Respiration, Root, Stem, Transpiration

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
4.1 Define terms		Foundation	Reading	Applies/Understands technical words that pertain to subject [1.3.6]
4.2 Discuss ways plants affect our lives	4.2.1 Take students on a tour of the campus to identify different types of plants	Foundation	Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
		Thinking	Reasoning	Sees relationship between two or more ideas, objects, or situations [4.5.5]
4.3 Label the four major parts of a plant, and discuss their functions		Foundation	Reading	Identifies relevant details, facts, and specifications [1.3.16]
		Personal Management	Responsibility	Exhibits enthusiasm in approaching and completing a task [3.4.3]
4.4 Identify requirements for plant growth		Foundation	Speaking	Asks questions to obtain information [1.5.4]
		Thinking	Seeing Things in the Mind's Eye	Organizes and processes images –symbols, pictures, graphs, objects, etc. [4.6.2]

## Unit 5: Natural Resources

### 10 Hours

Terminology: Clay, Conservation, Habitat, Predators, Prey, Sand, Silt, Soil, Texture

<b>CAREER AND TECHNICAL SKILLS</b> What the Student Should Be Able to Do		<b>ACADEMIC AND WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
5.1 Define terms		Foundation	Reading	Applies/Understands technical words that pertain to subject [1.3.6]
5.2 Explain why conservation of natural resources is important	5.2.1 Discuss strategies for conserving natural resources	Foundation	Science	Analyzes environmental issues (ecology, pollution, waste management) [1.4.2]
		Personal Management	Integrity/Honesty/Work Ethic	Describes/Explains significance of integrity, honesty, and work ethics [3.2.4]
5.3 Identify the major components of soil	5.3.1 Determine the texture of soil samples	Foundation	Arithmetic/Mathematics	Calculates percentages, rations, proportions, decimals, and common fractions [1.1.10]
			Science	Acquires and processes scientific data [1.4.1]
		Thinking	Knowing how to Learn	Processes new information as related to workplace [4.3.5]
5.4 Identify major species of wildlife in Arkansas	5.4.1 Use the Arkansas Game and Fish Regulations Guide as a reference	Foundation	Reading	Determines what information is needed [1.3.10]
		Thinking	Reasoning	Uses logic to draw conclusions from available information [4.5.6]

# Glossary

## Unit 1: Agriculture in Our Lives

1. Agribusiness—businesses involved in the field of agriculture
2. Agricultural mechanics—relating to the design, operation, and maintenance of mechanical equipment in agriculture
3. Agriculture—the science of production of food, fiber, and related supplies, services, mechanics, products, processing, and marketing
4. Agriscience—application of scientific principles and new technologies to agriculture
5. Animal science—the science of animal growth, care, and management
6. Biology—the field of study dealing with living organisms
7. Export—products sold and transported to other countries
8. Forestry—the science of growing trees
9. Horticulture—the science of growing fruits, flowers, vegetables, or ornamental plants
10. Import—products brought into a country from another country
11. Technology—advancements in science to improve the standard of living

## **Unit 2: The National FFA Organization**

1. American Star Farmer—highest FFA award achieved at the national level
2. CDE—Career Development Event that allows for knowledge and skill development through competition in agribusiness and agriscience
3. SAE—supervised agriculture experience program; projects supervised by a teacher that help students gain knowledge and skills in agriculture
4. Smith-Hughes Act—a federal law passed in 1917 creating vocational education in public schools

## Unit 3: Animals in Agriculture

1. Barrow—a male swine castrated at an early age
2. Beef—the meat obtained from cattle
3. Boar—a male swine that has not been castrated
4. Bull—a male bovine that has not been castrated
5. Calf—a member of the bovine species under one year of age
6. Cow—a female bovine that has produced one or more calves
7. Ewe—a female sheep
8. Gilt—a female swine that has not produced a litter of piglets
9. Heifer—a female bovine that has not produced a calf
10. Hen—a female fowl
11. Lamb—any sheep under 12 months of age
12. Livestock—animals used for production agriculture
13. Mutton—sheep over one year of age, castrated while a lamb; also meat of sheep
14. Pork—meat from pigs
15. Poultry—domestic fowl that are raised for meat, eggs, and/or feathers
16. Ram—a male sheep that has not been castrated
17. Sow—a female swine that has produced a litter of piglets
18. Steer—a male bovine that has been castrated at an early age
19. Wether—a castrated male sheep

## Unit 4: Plants in Agriculture

1. Flower—the reproductive part of the plant
2. Leaf—the part of a plant that manufactures food through photosynthesis
3. Photosynthesis—the process of changing light energy into chemical energy; input of carbon dioxide and water in the presence of sunlight to produce glucose, water, and oxygen
4. Respiration—a process that breaks down sugars to produce energy
5. Root—a vegetative part of a plant that grows underground and is used as an anchor and for absorption of water, nutrients, and gases
6. Stem—a vegetative part of a plant that supports leaves, buds, and other organs
7. Transpiration—the loss of water vapor from a plant

## Unit 5: Natural Resources

1. Clay—a microscopic soil particle that has the highest moisture retention
2. Conservation—the wise use of natural resources
3. Habitat—components that make up an animal's living environment
4. Predators—animals that feed on smaller or weaker animals
5. Prey—an animal eaten by another animal
6. Sand—the largest soil particle with the highest drainage potential and lowest nutrient retention
7. Silt—an intermediate soil particle with medium drainage and nutrient retention
8. Soil—the mineral and organic surface of the Earth; capable of supporting upland plants
9. Texture—the ratio of sand, silt, and clay in a given soil