



Nature of the Agriculture/Horticulture Industry

Unit: Agriculture and Society

Problem Area: Recognizing the Role of Agriculture in Society

Lesson: Nature of the Agriculture/Horticulture Industry

- **Student Learning Objectives.** Instruction in this lesson should result in students achieving the following objectives:

- 1 **Define agriculture and explain agriculture industry.**
- 2 **Describe the various components of the agriculture industry.**

- **List of Resources.** The following resources may be useful in teaching this lesson:

E-unit: *The Nature of the Agriculture/Horticulture Industry*. Danville, IL:
CAERT, Inc. www.mycart.com

- **List of Equipment, Tools, Supplies, and Facilities**

- ✓ Writing surface
- ✓ Overhead projector
- ✓ Copies of sample test
- ✓ Copies of student lab sheet

■ **Terms.** The following terms are presented in this lesson (shown in bold italics):

- ▶ agribusiness
- ▶ agricultural chemistry
- ▶ agricultural engineering
- ▶ agriculture
- ▶ agriculture industry
- ▶ aquaculture
- ▶ farming
- ▶ floriculture
- ▶ food science
- ▶ forestry
- ▶ horticulture
- ▶ inputs
- ▶ intensive farming
- ▶ landscape horticulture
- ▶ natural resources
- ▶ nutrient management
- ▶ olericulture
- ▶ organic farming
- ▶ ornamental horticulture
- ▶ pomology
- ▶ soil conservation
- ▶ stewardship
- ▶ subsistence farming

■ **Interest Approach.** Use an interest approach that will prepare students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

Have the students create their own definition of agriculture. Ask for volunteers to share their definitions with the rest of the class. Compile the best parts of each definition to build a definition that the entire class can accept.

Have students conduct a survey throughout the school. Have them ask three individuals what is the first thing they think of when agriculture is mentioned. Chances are that most people think of farming. Use the survey results as a basis for a discussion on how far-reaching agriculture is. Use the discussion as a starting point in helping the class understand that agriculture is far more than farming.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1: Define agriculture and explain agriculture industry.

Anticipated Problem: What is agriculture?

- I. **Agriculture** is the science of growing crops and raising animals to meet the food, fiber, fuel, and other needs of humans. It includes many areas, such as soil conservation, pest management, and mechanics.
 - A. The **agriculture industry** comprises all the activities needed to provide people with food, clothing, and shelter. It includes farm and nonfarm operations.
 1. **Farming** is the use of land and other resources to grow crops and raise animals. Methods of farming are diverse. **Subsistence farming**, common in many parts of the world, is farming on a small area of land, producing enough for the needs of the family. In contrast to subsistence farming, **intensive farming**, or industrial agriculture, conducted on a commercial scale, involves large areas and/or large numbers of animals. Intensive farming also involves large quantities of farm inputs, such as pesticides and fertilizers, and a high level of mechanization. An intensive farming operation generally aims to maximize financial gain from grain, produce, or livestock through the sheer size of the business.
 2. **Agribusiness** is all the nonfarm work in the agriculture industry. Roughly 10 times the number of people who work in farming are employed in agribusiness. The two main areas of agribusiness are supplies and services and marketing and processing.
 - a. The supplies and services area includes **inputs**, which are items used in growing crops or raising animals. It also includes some items used with lawns, flowers, trees, etc.
 - b. The marketing and processing area involves the activities that transform agricultural products into forms people want.

Begin the lesson with an interest approach. Present the learning objectives and introduce new terms. Assign readings from appropriate resources related to this objective. Lead the class in a discussion of the importance of the agriculture industry and major terms.

Objective 2: Describe the various components of the agriculture industry.

Anticipated Problem: What are the various components of the agriculture industry?

- II. Agriculture has become more diverse over the years. The industry that once focused mainly on the production of food for humans and feed for animals has grown to be very complex. There are many areas of specialization in the agriculture field.
- A. Chemicals have revolutionized agriculture. **Agricultural chemistry** is an area of agriculture that includes chemical fertilizers, chemical pesticides, soil analysis, analysis of agricultural products, and determination of the nutritional needs of plants and animals.
 - B. Agricultural engineering and mechanics have greatly increased farm efficiency and productivity. **Agricultural engineering** is the design of agricultural machinery, equipment, and structures. Tractors and other farm equipment; equipment used in processing, handling, and storage of agricultural products; and instruments, such as GPS equipment, have advanced agricultural practices.
 - C. **Aquaculture** is the cultivation of fish and other aquatic organisms. It includes the production of plants, such as watercress and water chestnuts.
 - D. **Food science** is a discipline within agriculture that deals with technical aspects of food from harvest to consumption. Some areas of food science are food chemistry, food engineering, food microbiology, food packaging, food preservation, and food processing. The packing, processing, and marketing of agricultural products have become more advanced. Food preservation methods, including quick-freezing and dehydration, have increased the markets for farm products.
 - E. **Forestry** is the art, science, and practice of studying and managing forests. Some aspects of forestry include producing timber as a raw material for wood products and using forests as wildlife habitat, for recreation, and to maintain the quality of natural water.
 - F. **Horticulture** is the cultivation of garden plants. Three main areas of horticulture are ornamental horticulture, olericulture, and pomology.
 - 1. **Ornamental horticulture** is the art and science of growing plants for their beauty. Ornamental horticulture consists of two main areas, floriculture and landscape horticulture.
 - a. **Floriculture** is the production, transportation, and use of cut flowers and foliage and of greenhouse crops.
 - b. **Landscape horticulture** is the production and use of plants to make the outdoor environment more appealing.
 - 2. **Olericulture** is the growing, harvesting, storing, processing, and marketing of vegetables.
 - 3. **Pomology** is the growing, harvesting, storing, processing, and marketing of fruits and nuts.

- G. Organic farming is on the rise to meet consumer demands. **Organic farming** is a production system that avoids the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives.
- H. **Natural resources** are all the things found in nature, including living organisms, minerals, soil, water, and air. Natural resources are closely tied to the environment. Natural resources may be subdivided into eight groups. They are wildlife, atmosphere, soil, water, minerals, fossil fuels, sunlight, and people.
- I. Soil conservation and nutrient management techniques have expanded, resulting in less damage to the environment. **Soil conservation** consists of management practices that protect the soil. **Nutrient management** pertains to the amount, form, placement, and timing of applications of nutrients for plants. Both these practices are associated with stewardship. **Stewardship** is the responsibility to manage natural resources in ways that ensure their sustainability for current and future generations.

Have the students read appropriate materials pertaining to the breadth of agriculture. Use the Internet as a tool to obtain supplemental information. Show a PowerPoint presentation and discuss the content of this objective.

- **Review/Summary.** Use the student learning objectives as the basis for reviewing and summarizing the lesson. Have students explain the content associated with each objective. Use their responses in determining which objectives and concepts need to be retaught.
- **Application.** Use the included lab sheet to apply the information presented in the lesson. The lesson content provides students with a broad foundation on which other agriculture/horticulture areas are based. Students can apply the information in preparing FFA speeches and reports.
- **Evaluation.** Evaluation should focus on student achievement of the lesson objectives. Various techniques can be used, such as student performance on the application activities. The sample written test can also be used.

■ **Answers to Sample Test:**

Part One: Matching

1. j
2. i
3. g
4. b
5. f
6. c
7. a
8. e

9. d
10. h

Part Two: Multiple Choice

1. a
2. b
3. b
4. d
5. d

Part Three: Short Answer

- Floriculture is the production, transportation, and use of cut flowers and foliage and of greenhouse crops.
- Landscape horticulture is the production and use of plants to make the outdoor environment more appealing.

Nature of the Agriculture/Horticulture Industry

► **Part One: Matching**

Instructions: Match the term with the correct definition.

- | | |
|-----------------------------|------------------------|
| a. stewardship | f. horticulture |
| b. agribusiness | g. agriculture |
| c. organic farming | h. subsistence farming |
| d. farming | i. inputs |
| e. agricultural engineering | j. olericulture |

- ____ 1. The growing, harvesting, storing, processing, and marketing of vegetables
- ____ 2. Items used in growing crops or raising animals
- ____ 3. The science of growing crops and raising animals to meet the food, fiber, fuel, and other needs of humans
- ____ 4. All the nonfarm work in the agriculture industry
- ____ 5. The cultivation of garden plants
- ____ 6. A production system that avoids the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives
- ____ 7. The responsibility to manage natural resources in ways that ensure their sustainability for current and future generations
- ____ 8. The design of agricultural machinery, equipment, and structures
- ____ 9. The use of land and other resources to grow crops and raise animals
- ____ 10. Farming on a small area of land, producing enough for the needs of the family

► Part Two: Multiple Choice

Instructions: Write the letter of the correct answer.

- ____ 1. What is conducted on a commercial scale and involves large areas and/or large numbers of animals, large quantities of farm inputs, and a high level of mechanization?
 - a. intensive farming
 - b. market gardening
 - c. slash-and-burn farming
 - d. subsistence farming

- ____ 2. ____ involve the activities that transform agricultural products into forms people want.
 - a. Germination and development
 - b. Marketing and processing
 - c. Production and harvest
 - d. Supplies and services

- ____ 3. What is the art, science, and practice of studying and managing forests?
 - a. floriculture
 - b. forestry
 - c. horticulture
 - d. nursery management

- ____ 4. What area of horticulture is concerned with the growing, harvesting, storing, processing, and marketing of fruits and nuts?
 - a. floriculture
 - b. landscape horticulture
 - c. olericulture
 - d. pomology

- ____ 5. What consists of management practices that protect the soil?
 - a. agricultural chemistry
 - b. natural resources
 - c. nutrient management
 - d. soil conservation

► Part Three: Short Answer

Instructions: Complete the following.

Name and briefly explain the two main areas of ornamental horticulture.

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Instructions: Fill in the blanks for the following statements.

1. _____ is the science of growing crops and raising animals to meet the food, fiber, fuel, and other needs of humans.
2. The _____ comprises all the activities needed to provide people with food, clothing, and shelter. It includes farm and nonfarm operations.
3. _____ is the use of land and other resources to grow crops and raise animals.
4. _____, common in many parts of the world, is farming on a small area of land, producing enough for the needs of the family.
5. _____ is conducted on a commercial scale and involves large areas and/or large numbers of animals, large quantities of farm inputs, and a high level of mechanization.
6. _____ is all the nonfarm work in the agriculture industry.
7. One main area of agribusiness is _____, which includes items used in growing crops or raising animals.
8. A second main area of agribusiness is _____, which involves the activities that transform agricultural products into forms people want.
9. _____ is an area of agriculture that includes chemical fertilizers, chemical pesticides, soil analysis, analysis of agricultural products, and determination of the nutritional needs of plants and animals.
10. _____ involves the design of agricultural machinery, equipment, and structures.
11. _____ is the cultivation of fish and other aquatic organisms.

12. _____ is a discipline within agriculture that deals with technical aspects of food from harvest to consumption.
13. _____ is the art, science, and practice of studying and managing forests.
14. _____ is the cultivation of garden plants.
15. _____ is the art and science of growing plants for their beauty.
16. _____ is the production, transportation, and use of cut flowers and foliage and of greenhouse crops.
17. _____ is the production and use of plants to make the outdoor environment more appealing.
18. _____ is the growing, harvesting, storing, processing, and marketing of vegetables.
19. _____ is the growing, harvesting, storing, processing, and marketing of fruits and nuts.
20. _____ is a production system that avoids the use of synthetically compounded fertilizers, pesticides, growth regulators, and livestock feed additives.
21. _____ are all the things found in nature, including living organisms, minerals, soil, water, and air.
22. _____ consists of management practices that protect the soil.
23. _____ pertains to the amount, form, placement, and timing of applications of nutrients for plants.
24. _____ is the responsibility to manage natural resources in ways that ensure their sustainability for current and future generations.