

## Lesson A1–1

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# Determining the Nature of the Agriculture/Horticulture Industry

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**Unit A.** Agricultural Literacy

**Problem Area I.** Identifying Careers in Agriculture/Horticulture

**Lesson I.** Determining the Nature of the Agriculture/Horticulture Industry

### **New Mexico Content Standard:**

**Pathway Strand:** Plant Systems

**Standard: I:** Apply principles of anatomy and physiology to produce and manage plants in both a domesticated and natural environment.

**Benchmark: I-A:** Analyze and evaluate nutritional requirements and environmental conditions to develop and implement a fertilization plan.

**Performance Standard:** 1. Describe nutrient sources. 2. Determine plant nutrient requirements for optimum growth. 3. Identify function of plant nutrients in plants. 4. Determine the environmental factors that influence and optimize plant growth. 5. Apply nutrients to plants for economic growth. 6. Describe nutrient application methods and appropriate practices.

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

1. Describe the modern agriculture/horticulture industry.
2. Trace major developments in the history of the agriculture/horticulture industry.
3. List important benefits of agriculture in the United States.

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

Morgan, Elizabeth M., et al. *AgriScience Explorations*, Second Edition. Danville, Illinois: Interstate Publishers, Inc., 2000. (Textbook, Chapter 1)

Schroeder, Charles B., et al. *Introduction to Horticulture*, Third Edition. Danville, Illinois: Interstate Publishers, Inc., 2000. (Textbook and Activity Manual, Chapters 1 and 2) This is especially relevant for horticulture programs.

**Other Resources.** The following resources will be useful to students and teachers:

Drache, Hiram M. *History of U.S. Agriculture and Its Relevance to Today*. Danville, Illinois: Interstate Publishers, Inc., 1996. (Textbook, Units I–V)

*Farm & Food Facts*, 1997–98. Bloomington, Illinois: Illinois Farm Bureau.

## List of Equipment, Tools, Supplies, and Facilities

Writing surface

Overhead projector

Transparencies from attached masters

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

Agribusiness

Agricultural policy

Agriculture

Agriculture industry

Cultivation

Floriculture

General Agreement on Tarriffs and Trade (GATT)

Homestead Act

Horticulture

Inputs

Interiorscaping

Landscape horticulture

Morrill Act

North American Free Trade Act (NAFTA)

Olericulture

Ornamental horticulture

Pomology

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

*Have students develop a list of agriculture/horticulture products made in your state. Have them consider plant and animal products. How are these products used in supplying other products and services? Students should list some of the other products and the number of jobs that are created. Provide them with a summary of how agriculture/horticulture products produced in your state are used as inputs in creating different products and jobs.*

## Summary of Content and Teaching Strategies

**Objective 1:** Describe the modern agriculture/horticulture industry.

**Anticipated Problem:** How can the modern agriculture/horticulture industry be described?

- I. **Agriculture industry** is all of the activities needed to supply food, clothing, and shelter to people for their use. The agriculture industry includes both activities not carried out on farms and those that do occur on farms.
  - A. **Agriculture** is the growing of crops and raising of animals to meet the needs of people. However, it is not limited to just farming. It also includes areas like soil conservation, controlling pests, and machinery usage.
  - B. **Agribusiness** is all of the nonfarm work in the agriculture industry. Ten times more people are employed in agribusiness than in farming. There are two main areas in agribusiness.
    1. Supplies and services include **inputs**, which are items used in growing crops or raising animals. Supplies and services also include some items used with lawns, flowers, trees, and related areas.
    2. Marketing and processing involves the activities that transform agriculture products into forms people want.
  - C. **Horticulture** is the culture of plants for food, comfort, and beauty. It is one area of agriculture. Horticulture is divided into three important areas.
    1. **Ornamental horticulture** is the growing of plants for their beauty. This area includes floriculture, landscape horticulture, and interiorscaping.
      - a. **Floriculture** is the production, transportation, and use of foliage plants.
      - b. **Landscape horticulture** is the production and use of plants to make the outdoor environment more appealing.
      - c. **Interiorscaping** is the use of foliage plants to create pleasing and comfortable areas inside buildings.
    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.

Provide students with copies of the suggested references. Have them read the *Agriculture Is an Industry* section in Chapter 1 of *AgriScience Explorations*. Display TM: A1–1A to illustrate the number of jobs provided by the agriculture industry. Use class discussion to review lesson content. Follow with a summary written on the classroom writing surface.

**Objective 2:** Trace major developments in the history of the agriculture/horticulture industry.

**Anticipated Problem:** What developments helped shape the modern agriculture/horticulture industry?

- II. The modern agriculture industry developed over a long period of time. It was shaped by important groups of people and policies.
  - A. Native Americans—these include Indians, Hawaiians, and Eskimos—met their daily needs by hunting and gathering. Since hunting and gathering was difficult, Indians learned to care for plants that provided food. Caring for plants that become food is known as **cultivation**.
  - B. Colonists were mostly people who traveled to this country from Europe. They brought seeds, plants, and animals from their homelands. The foundation for raising livestock in the southeastern United States can be traced back to a shipment of animals to Jamestown in 1611.
  - C. **Agricultural policy** are government laws that deal with agriculture. Several important policies have shaped the modern agriculture industry.
    1. In 1825, the U.S. Congress established a committee on agriculture.
    2. The U.S. Patent Office began agricultural research in 1852.
    3. Under the leadership of President Abraham Lincoln, three major acts were passed in 1862.
      - a. The agency which later became the United States Department of Agriculture was established.
      - b. The **Homestead Act** allowed citizens to acquire land for virtually nothing. It encouraged settlement of the West.
      - c. The **Morrill Act** established a system of land-grant schools to teach agriculture and related areas.
    4. Twentieth Century Policies—Examples of important policies created during the 1900’s dealt with trade between the United States and other countries.
      - a. The **General Agreement on Tariffs and Trade (GATT)** was originally passed in 1947 and renewed in 1994. Its general purpose was to reduce trade restrictions among nations.

- b. The **North American Free Trade Act (NAFTA)** was passed in the early 1990's. Its intention was to open trade between the United States, Mexico, and Canada. It had a major impact on horticulture products.

*Provide students with copies of the suggested reference. Have them read the History Helps Understanding section in Chapter 1 of AgriScience Explorations during supervised study. Display TM: A1-1B to reinforce important agricultural laws. Follow with class discussion. Summarize lesson content on the classroom writing surface.*

**Objective 3:** List important benefits of agriculture in the United States.

**Anticipated Problem:** What benefits does the agriculture industry provide to the United States?

- III. The agriculture industry provides many benefits to the citizens of the United States. Five important benefits that result from agriculture industry are:
  - A. The basic human needs for food, clothing, and shelter are met. People who have their basic needs met are happier and feel better about their country and themselves.
  - B. A good agriculture industry leads to a strong and stable country.
  - C. Jobs are created by the agriculture industry. About 21 million people are employed in the agriculture industry. This is 20% of the entire American workforce.
  - D. The agriculture industry provides the United States with products to trade with other countries. This allows our country to keep our foreign trade in balance.
  - E. The agriculture industry supports other industries. Agricultural products and services are used in making non-agricultural products. This creates jobs in other sectors of the economy.

*Provide students with copies of the suggested reference. Have students read the Benefits of Agriculture Section in Chapter 1 of AgriScience Explorations during supervised study. Display TM: A1-1C to illustrate the wide variety of non-food items made from agricultural products that meet the needs of people. Have students use the Internet to obtain information on the total number of workers employed in the agriculture industry.*

**Review/Summary.** Use the student learning objectives as the basis for review and summary. Have students explain the content associated with each lesson. Use their responses in determining which objectives and concepts need to be retaught. Questions at the end of Chapter 1 in *AgriScience Explorations* will be useful in reviewing content.

**Application.** Have students complete activities as appropriate in the “Exploring” section at the end of Chapter 1 in *AgriScience Explorations*. The lesson content provides students with a broad foundation on which other agriculture/horticulture is 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 self-check section at the end of each chapter in the suggested references will be helpful. Also, a sample written test is attached.

## **Answers to Sample Test:**

### **Part One: Matching**

1=f, 2=c, 3=b, 4=d, 5=a, 6=e

### **Part Two: Fill in the Blank**

1=General Agreement on Tariffs and Trade

2=Abraham Lincoln

3=interiorscaping

4=pomology

5=Jamestown

### **Part Three: Short Answer**

1. Student answers can include any of the following:
  - basic human needs are met
  - strong and stable country
  - job opportunities in agriculture
  - products for foreign trade
  - support of non-agricultural industries
2.
  - a. United States
  - b. Canada
  - c. Mexico
3.
  - a. Floriculture—the production, transportation, and use of foliage plants.
  - b. Landscape horticulture—the production and use of plants to make the outdoor environment more appealing.
  - c. Interiorscaping—the use of foliage plants to create comfortable and pleasing areas inside of buildings.

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# Test

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## Lesson A1-1: Determining the Nature of the Agriculture/Horticulture Industry

### Part One: Matching

*Instructions.* Match the term with the correct response. Write the letter of the term next to the definition.

- |                         |            |                        |
|-------------------------|------------|------------------------|
| a. Morrill Act          | c. inputs  | e. agricultural policy |
| b. agriculture industry | d. farming | f. Homestead Act       |

- \_\_\_\_\_ 1. The legislation that allowed settlers to acquire land in previously unsettled parts of the country.
- \_\_\_\_\_ 2. Items used in growing crops and raising animals.
- \_\_\_\_\_ 3. All of the activities needed to supply food, clothing, and shelter.
- \_\_\_\_\_ 4. Involves the use of land and other resources to grow crops and animals.
- \_\_\_\_\_ 5. The legislation that established a system of land-grant schools to teach about agriculture.
- \_\_\_\_\_ 6. Government laws that deal with agriculture.

### Part Two: Fill in the Blank

*Instructions.* Complete the following statements.

1. The \_\_\_\_\_ was originally passed in 1947 to reduce trade restrictions among nations.
2. Under the leadership of \_\_\_\_\_, three major agricultural acts were passed in 1862.
3. The use of foliage plants to create pleasing areas inside buildings is known as \_\_\_\_\_.
4. The area of horticulture that is concerned with growing, harvesting, storing, processing, and marketing fruits and nuts is \_\_\_\_\_.
5. The foundation for raising livestock in the southeastern United States can be traced back to the shipment of animals to \_\_\_\_\_.

**Part Three: Short Answer**

*Instructions.* Use the space provided to answer the following questions.

1. List and explain three benefits that the agriculture industry brings to citizens.
  - a.
  
  
  
  
  
  
  
  
  
  
  - b.
  
  
  
  
  
  
  
  
  
  
  - c.
  
2. What three countries were involved in the North American Free Trade Act (NAFTA) which was passed in the early 1990's?
  - a.
  
  
  
  
  
  
  
  
  
  
  - b.
  
  
  
  
  
  
  
  
  
  
  - c.
  
3. List and briefly explain the three main areas of ornamental horticulture.
  - a.
  
  
  
  
  
  
  
  
  
  
  - b.
  
  
  
  
  
  
  
  
  
  
  - c.

# **Agriculture Industry— The Nation's Largest Employer**

**Total Agriculture Industry Employment  
= 21 million people**

**Total Employment in Farming  
= 1.9 million people**

**Total Non-Farming employment  
= 19 million people**

**Percent of U.S. Workers Employed in  
the Agriculture Industry = 20%**

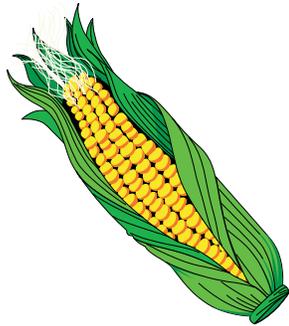
## **Important Agricultural Laws Passed in 1862 Under the Leadership of Abraham Lincoln**

- **Predecessor of United States Department of Agriculture was established.**
- **Homestead Act: Allowed citizens to acquire land (80 or 160 acres) for a total investment of \$18. It provided a reason for citizens to move west and settle new lands.**
- **Morrill Act: Established a system of land-grant schools to teach agriculture. It greatly enhanced future advancements in agriculture.**

# Agriculture Is More Than Food

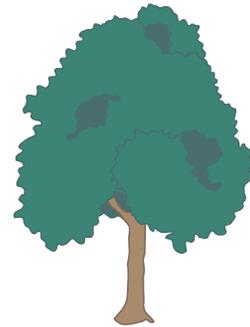
## CORN

Plastic  
Cooking Oil  
Cattle Feed  
Diapers  
Sweetener  
Road Deicer  
Packing Materials



## TREES

Turpentine  
Paper  
Solvents  
Oils  
Medicines



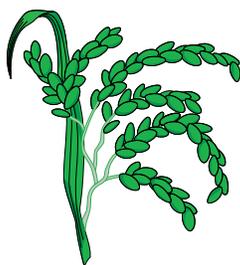
## SOYBEANS

Cooking Oil  
Cattle Feed  
Printer's Ink  
Paint



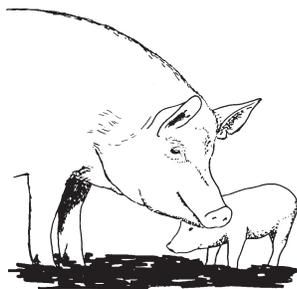
## BEEF

Shoes  
Leather  
Coating for Films



## RICE

Cattle Feed



## PORK

Footballs  
Shoes



## COTTON

Adhesive Bandages  
Cooking Oil  
Paint  
Paper