

Understanding Horticulture

Unit: Horticulture Science

Problem Area: Exploring the Horticulture Industry

Lesson: Understanding Horticulture

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

- 1 Define horticulture and describe its relationship to science and technology.
- 2 Differentiate the three major segments of the horticulture industry.
- 3 Analyze activities included in the ornamental horticulture industry.

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

E-unit 030001: *Understanding Horticulture*. Danville, IL: CAERT, Inc.
www.mycart.com

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

- ✓ Writing surface
- ✓ Overhead projector
- ✓ Copies of sample test
- ✓ Visuals from accompanying masters
- ✓ Copies of student lab sheet
- ✓ Variety of horticultural magazines



- ✓ Biology textbook
- ✓ Examples of horticulture products

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

- ▶ botany
- ▶ floriculture
- ▶ foliage plants
- ▶ garden centers
- ▶ horticulture
- ▶ horticulture industry
- ▶ horticulture science
- ▶ horticulture technology
- ▶ landscape horticulture
- ▶ nursery
- ▶ olericulture
- ▶ ornamental horticulture
- ▶ pomology

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

Begin the lesson by having students look through available horticultural magazines. After giving them several minutes, ask what they think horticulture is and how they think it relates to their idea of agriculture. Expect a variety of responses. Follow up the responses with the correct definition and an explanation of the relationship. Continue with the lesson.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1: Define horticulture and describe its relationship to science and technology.

Anticipated Problem: What is horticulture and how does it relate to science and technology?

- I. **Horticulture** is the culture of plants for food, comfort, and beautification purposes. In Latin, the term horticulture means “garden culture.” However, advancements in

horticulture science and technology have helped the field of horticulture become more than just garden culture.

- A. There is a definite relationship between horticulture and science. The field of science that deals with the cultivation of horticultural plants is known as **horticulture science**. Botany is the major scientific area most closely related to horticulture. **Botany** is the study of plants and their processes.
- B. As in other areas of agriculture, technology has found its way into horticulture. **Horticulture technology** is the application of science to horticulture. Successfully raising horticultural plants takes more than just a daily watering. Time, patience, and an understanding of the scientific processes of plants are needed to grow beautiful plants and flowers.
- C. The **horticulture industry** is the combination of scientific, technological, and production activities that ensure the satisfaction of the consumer.

Begin the lesson with an interest approach. Have the students read portions of textbooks that pertain to key definitions. Lead a discussion during which terms are defined. Use VM-A as a visual aid during the discussion.

Objective 2: Differentiate the three major segments of the horticulture industry.

Anticipated Problem: What are the three major segments of the horticulture industry?

- II. The horticulture industry can be divided into three areas: ornamental horticulture, olericulture, and pomology. Each of these areas is unique and includes many career opportunities.
 - A. The growth and use of plants for their beauty is the area of horticulture known as **ornamental horticulture**. Ornamental horticulture involves the production and use of plants used both indoors and outdoors. Because of the use of green plants, the ornamental horticulture industry is often referred to as the “green industry.” Examples of crops within ornamental horticulture are poinsettias, red maple trees, carnations, forsythia shrubs, and petunias.
 - B. The area of horticulture that involves the production of vegetable food crops is olericulture. **Olericulture** includes the planting, harvesting, storing, processing, and marketing of vegetable crops. Sweet corn, tomatoes, and lettuce are examples of vegetable crops.
 - C. Another food crop production area of horticulture is pomology. **Pomology** is the planting, harvesting, storing, processing, and marketing of fruit and nut crops. Examples of fruit and nut crops include peaches, strawberries, and walnuts.

Use VM-B to highlight the definitions associated with this objective. Display examples of horticulture products. This could include flowering and/or foliage plants from the greenhouse, fruits, nuts, and vegetables. Have the class determine which areas of horticulture deal with these particular examples.

Continue the discussion by having the students develop a list of other items that would be included in each of the three areas of horticulture.

Objective 3: Analyze activities included in the ornamental horticulture industry.

Anticipated Problem: How do the segments of the ornamental horticulture industry differ?

- III. Ornamental horticulture, one of the three major areas of the horticulture industry, can itself be divided into two categories. These are floriculture and landscape horticulture. Both involve the use of flowering and foliage plants. **Foliage plants** are those used for their colorful greenery or leaves.
 - A. Floriculture is the area of horticulture associated with cut flowers, potted plants, and annual bedding plants. Producing, transporting, and using flowering and foliage plants is known as **floriculture**. Poinsettias, carnations, philodendrons, and petunias are names of common plants associated with floriculture.
 - B. The production and use of plants to beautify the outdoor environment is **landscape horticulture**. Landscape horticulture includes designing plans for landscapes, installing landscapes as specified in the plans, and maintaining the landscapes. Maples, oaks, forsythia, honeysuckle, English ivy, peony, and Kentucky bluegrass are common landscape plant materials.
 1.
A **nursery** is a place that specializes in starting plants and growing them until they are ready to be transplanted to landscapes. Nurseries produce ground-cover plants, herbaceous perennials, flowering shrubs, evergreens, deciduous shade trees, and ornamental trees for retail and wholesale sales. Other nurseries, sometimes called sod farms, grow grass that is moved to landscape projects.
 2.
Garden centers are retail outlets that sell plants grown in nurseries, along with garden supplies. Garden centers frequently have a greenhouse range and floral services.
 3.
Arboriculture is a segment of the horticulture industry that deals with the care of trees. Some technical skills required of an arborist include planting, pruning, fertilizing, and diagnosing and treating diseases and pest infestations.

Use VM–C to highlight the segments of the ornamental horticulture industry. Assign LS–A to strengthen student understanding of the material presented. Conduct a review of the material and administer a test to determine student mastery of the material presented in this lesson.

Review/Summary. Use the student learning objectives as the basis for review and summary. Have students explain the content associated with each objective. Use their

responses in determining which objectives and concepts need to be reviewed or taught from a different angle. The anticipated problems can be used as student review questions.

■ **Application.** Use the included visual masters and lab sheet to apply the information presented in the lesson.

■ **Evaluation.** Evaluation should be based on student comprehension of the learning objectives. This can occur during instruction, review, or later as students apply the information. The sample written test can also be used.

■ **Answers to Sample Test:**

Part One: Matching

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

Part Two: Multiple Choice

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

Part Three: Short Answer

olericulture, pomology

Understanding Horticulture

► Part One: Matching

Instructions: Match the term with the correct definition.

- | | |
|----------------------------|----------------------------|
| a. horticulture | f. horticulture science |
| b. olericulture | g. ornamental horticulture |
| c. landscape horticulture | h. floriculture |
| d. pomology | i. horticulture industry |
| e. horticulture technology | |

- _____ 1. The culture of plants for food, comfort, and beauty
- _____ 2. The field of science that deals with the cultivation of horticultural plants
- _____ 3. The production, transportation, and use of flowering or foliage plants
- _____ 4. The food crop production area of horticulture that deals with fruits and nuts
- _____ 5. Includes the planting, harvesting, storing, processing, and marketing of vegetable crops
- _____ 6. The combination of scientific, technological, and production activities designed to meet the needs of the horticulture consumer
- _____ 7. The application of science to horticulture
- _____ 8. The major area of horticulture that includes floriculture and landscape horticulture
- _____ 9. Includes designing landscape plans and the maintenance of landscapes



► Part Two: Multiple Choice

Instructions: Write the letter of the correct answer.

- ____ 1. What is the study of plants and their processes?
 - a. botany
 - b. horticulture
 - c. entomology
 - d. geology
- ____ 2. Where are plants grown and cared for before being placed in the landscape?
 - a. head house
 - b. cooler
 - c. nursery
 - d. infirmary
- ____ 3. What are foliage plants?
 - a. plants valued for their colorful flowers
 - b. plants used for their greenery or leaves
 - c. plants grown for their growth habits
 - d. plants with ornamental fruit
- ____ 4. What type of retail outlet sells plants grown in nurseries and garden supplies?
 - a. florist
 - b. landscape contractor
 - c. garden center
 - d. arborist
- ____ 5. What branch of horticulture deals with the care of trees?
 - a. pomology
 - b. olericulture
 - c. botany
 - d. arboriculture

► Part Three: Short Answer

Instructions: Complete the following.

List the two areas of horticulture related to food crop production.

HORTICULTURE

- ◆ Horticulture is the culture of plants for food, comfort, and beautification purposes.
- ◆ Horticulture science is the field of science that deals with the cultivation of horticultural plants.
- ◆ Botany is the study of plants and their processes.
- ◆ Horticulture technology is the application of science to horticulture.
- ◆ Science + Technology + Production = The Horticulture Industry



THREE AREAS OF THE HORTICULTURE INDUSTRY

1. Ornamental horticulture is the growth and use of plants for their beauty.
2. Olericulture is the planting, harvesting, storing, processing, and marketing of vegetable crops.
3. Pomology is the planting, harvesting, storing, processing, and marketing of fruit and nut crops.



ORNAMENTAL HORTICULTURE

- ◆ Floriculture—producing, transporting, and using flowering and foliage plants
- ◆ Landscape horticulture—the production and use of plants to beautify the environment
- ◆ Nursery—a place where plants, shrubs, and ornamental trees are grown until they are ready to be transplanted to landscape areas
- ◆ Garden center—a retail outlet that sell plants grown in nurseries, along with garden supplies
- ◆ Arboriculture—deals with the care of trees



Exploring the Horticulture Industry

Instructions

1. Select one of the areas of horticulture discussed in class today: floriculture, landscape horticulture, pomology, or olericulture. Using textbooks, magazines, and other resources, research your chosen area more completely.
2. When done with your research, answer the following questions:
 - a. Which area of horticulture did you choose and why?
 - b. Is this area of horticulture practiced in our community?
 - c. How does this area of horticulture affect our community? How could it affect a larger community?
 - d. How have science and technology affected this area of horticulture?

