

Lesson A1–1

Understanding Horticulture

Unit A. Horticultural Science

Problem Area I. Exploring the Horticulture Industry

Lesson I. Understanding Horticulture

New Mexico Content Standard:

Pathway Strand: Plant Systems

Standard: III: Apply fundamentals of production and harvesting to produce plants.

Benchmark: III-A: Apply fundamentals of plant management to develop a production plan.

Performance Standard: 1. Identify and select seeds and plants. 2. Manipulate and evaluate environmental conditions (e.g., irrigation, mulch, shading) to foster plant germination, growth and development. 3. Evaluate and demonstrate planting practices (e.g., population rate, germination/seed vigor, inoculation, seed and plant treatments). 4. Evaluate and demonstrate transplanting practices.

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. Identify the three major segments of the horticulture industry.
3. Identify and define activities included in the ornamental horticulture industry.

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

Recommended Resources. One of the following resources should be selected to accompany the lesson:

Schroeder, Charles B., et al. *Introduction to Horticulture*, Third Edition. Danville, Illinois: Interstate Publishers, Inc., 2000.

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

Lee, Jasper S. and Diana L. Turner. *AgriScience*, Third Edition. Danville, Illinois: Interstate Publishers, Inc., 2003.

Reiley, H. Edward and Carroll L. Shry, Jr. *Introductory Horticulture*, Sixth Edition. Albany, New York: Delmar Publishers, 2002.

List of Equipment, Tools, Supplies, and Facilities

Writing surface
Overhead projector
Transparencies from attached 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
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 involves more than just a beautiful landscape or a bouquet of flowers. **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 is needed to grow beautiful plants and flowers.
 - C. The **horticulture industry** is the combination of scientific, technological, and production activities that insure the satisfaction of the consumer.

At this point, show the class a biology textbook used by the school’s science department. Point out that it includes a definition of botany. Ask students to think of other sciences that may relate to horticulture. To help students further master this objective, reinforce classroom discussion with text readings. TM: A1–1A highlights the definitions given.

Objective 2: Identify 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. 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 flowering and foliage plants used both indoors and out.
 - B. The area of horticulture that involves the production of vegetable food crops is **olericulture**. **Olericulture** includes the planting, harvesting, storing, processing, and mar-

keting 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.

Have examples of horticulture products on display. This could include flowering and/or foliage plants from the greenhouse, fruits, nuts, or vegetables. Review with the class which areas of horticulture deal with these particular examples. To help students further master this objective, reinforce classroom discussion with text readings. TM: A1–1B highlights the definitions given.

Objective 3: Identify and define 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**.
- B. Before plants are placed in the landscape they are grown and cared for in a nursery. A **nursery** is a place which specializes in starting plants, shrubs, and ornamental trees which can later be transplanted to landscape areas. The production and use of plants to beautify the environment is **landscape horticulture**. Landscape horticulture also includes designing landscaping plans and landscape maintenance.

Pictures of flower shops and landscapes and live examples of cut flowers, flowering or bedding plants, and foliage plants would help students better understand the divisions of ornamental horticulture. To help students further master this objective, reinforce classroom discussion with text readings. TM: A1–1C highlights the definitions given.

Review/Summary. Summarize the lesson by reviewing the students learning objectives. The anticipated problems can be used as student review questions. Chapter reviews from the books listed on the resource list may also be useful.

Application. The following student activity can be used to apply the student learning objectives:

LS: A1–1A—Exploring the Horticulture Industry

Evaluation. Evaluation should be based on student comprehension of the learning objectives. This can be determined using the attached sample written test.

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: Completion

1. garden culture
2. botany
3. nursery
4. foliage plants

Part Three: Short Answer

1. olericulture, pomology

Test

Lesson A1–1: Understanding Horticulture

Part One: Matching

Instructions. Match the term with the correct response. Write the letter of the term by the definition.

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

- _____ 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 fruit 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 which includes floriculture and landscape horticulture.
- _____ 9. Includes designing landscape plans and the maintenance of landscapes.

Part Two: Completion

Instructions. Provide the word or words to complete the following statements.

1. In Latin, horticulture means _____.
2. _____ is the study of plants and their processes.
3. Plants are grown and cared for in a _____ before being placed in the landscape.
4. _____ are plants used for their greenery or leaves.

Part Three: Short Answer

Instructions. Provide information to answer the following question.

1. 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—The field of science that deals with the cultivation of horticultural plants.

Botany—The study of plants and their processes.

Horticulture technology—The application of science to horticulture.

**Science + Technology + Production =
THE HORTICULTURE INDUSTRY**

THREE AREAS OF THE HORTICULTURE INDUSTRY

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

ORNAMENTAL HORTICULTURE

Floriculture—Producing, transporting, and using flowering and foliage plants. Includes the use of cut flowers, potted plants, and annual bedding plants.

Landscape horticulture—The production and use of plants to beautify the environment.

Nursery—A place where plants, shrubs, and ornamental trees are started for transplanting to landscape areas.

