

Unit C: Classification of Agricultural Crops

Lesson 2: Identifying Plant Types and Uses

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

1. Explain the importance of plants.
2. Explain the taxonomic classification of plants.
3. List characteristics that determine the classification of plants.
4. Describe how plants are named.
5. Explain reasons for using the scientific names of plants.

Recommended Teaching Time: 2 hours

Recommended Resources: The following resources may be useful in teaching this lesson:

- A PowerPoint has also been developed with use of this lesson plan
- <http://www.afghan-web.com/fauna/>

List of Equipment, Tools, Supplies, and Facilities:

Writing surface
PowerPoint Projector
PowerPoint Slides
Transparency Master
Examples of plants for interest approach

Terms: The following terms are presented in this lesson (shown in bold italics and on PowerPoint Slides 2 and 3):

- Agronomy
- Cereal grain
- Crown
- Fiber crops
- Field crops
- Floriculture
- Food crop horticulture
- Forest crops
- Forestry
- Grain crops
- Horticultural crops
- Interiorscaping
- Landscape horticulture
- Oil crops
- Olericulture
- Ornamental horticulture
- Plant science
- Pomology
- Sucrose
- Sugar crops
- Taxol
- Tree farms
- Trunk

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.

Set a variety of plants in front of the class. Include samples of field crops, horticultural crops, and forest crops. Ask the class to consider why these crops are grown. What purposes are they used for by humans and other animals? Lead into a discussion of the various plants and their potential uses. Use the discussion to move on to the student learning objectives.

Summary of Content and Teaching Strategies

Objective 1: Describe plant science and its three major areas.

(PowerPoint Slide 4)

I. **Plant Science** is the study of the structure, functions, growth, and protection of plants. It is generally classified into three broad areas.

(PowerPoint Slide 5)

A. **Field crops** include plants grown in large fields and used for oil, fiber, grain, and similar products. They are often grown for their seed, such as maize and wheat. **Agronomy** is the specialized area of plant science that deals with field crops. (Note: see objective 2 for detailed information on field crops.)

(PowerPoint Slide 6)

B. **Horticultural crops** are grown for food, comfort, and beauty. In some cases, horticulture overlaps with field crops. However, in most cases, horticultural crops are not grown on vast areas of land. (Note: objective 3 will provide more detailed information on horticultural crops.)

(PowerPoint Slide 7)

C. **Forest crops** include the production of trees. The science of forestry is concerned with the growing of trees and the production of wood, food, and medicinal products. Some forest crops are grown on **tree farms** or cultured forests. Careful thought and planning goes into the production of forest crops on tree farms. (Note: see objective 4 for detailed information on forest crops.)

*****Have students get into groups of 3 or 4 after you finish going over Objective 1. Have them try to come up with as many crops as they can from each area covered. When finished have the students write them on the board. As an incentive, the group with the most crops could get a prize of your choosing.**

Objective 2: Identify common field crops and their uses.

(PowerPoint Slide 8)

II. Field crops are grown in large fields and used for grain, sugar and oil, and fiber products.

(PowerPoint Slide 9)

A. **Grain crops** include plants grown for their edible seeds, but do not include horticultural crops. Grain crops provide many important foods including the cereal grains. **Cereal grain** is the seed of grass type plants grown for food and animal feed. Grain and cereal crops grown in Afghanistan include rice, wheat, maize, barley, rye, and millet

(PowerPoint Slide 10)

B. Sugar and oil crops are produced for two important commodities: sweeteners and vegetable oil.

(PowerPoint Slide 11)

1. **Sugar crops** are used as a source of sucrose. **Sucrose** is commonly used as table sugar or as a sweetener in foods and beverages. It is a carbohydrate that provides energy for the human body. The major sugar crops are sugar cane and sugar beets.

(PowerPoint Slide 12)

2. **Oil crops** are plants grown for the vegetable oil contained in their seeds and fruit. The seeds of about 40 crops are used to make oil. maize, cotton, and castor oil plant are the most common oil crops. Other oil seeds include sunflowers, safflower, and peanuts. In some areas of the world soybeans are grown and can be used for their oil.

(PowerPoint Slide 13)

C. **Fiber crops** are grown for the fiber produced in their fruit, leaves, or stems. Fibers are tiny, threadlike structures used in making cloth and paper. Cotton is the major crop grown for fiber.

(PowerPoint Slide 14)

Flax is also grown for fiber. It is the subject of considerable research because of its potential in making paper.

**** Go back to the crops the students wrote on the board. Go through the field crops and have the students try to group them using the information they just learned in Objective 2.**

Objective 3: Define horticultural crops and describe their uses.

(PowerPoint Slide 15)

III. Horticultural crops are grown for food, comfort, and beauty. The two major areas of horticulture involve ornamental and food crop production.

(PowerPoint Slide 16)

- A. **Ornamental horticulture** is growing and using plants for their beauty. It includes floriculture and landscape horticulture.

(PowerPoint Slide 17)

1. **Floriculture** is the production and use of plants for their flowers and foliage. Roses is an example of a floriculture crop.

(PowerPoint Slide 18)

2. **Landscape horticulture** is growing and using plants to make the outdoor environment more appealing. It includes shrubs, lawns, and flowering plants. **Interiorscaping** is using plants indoors to create an attractive environment. Offices and malls often use plants to increase the appeal of their surroundings.

(PowerPoint Slide 19)

- B. **Food crop horticulture** is growing plants for food. It is often divided into the following two areas:

(PowerPoint Slide 20)

1. **Olericulture** is the science of producing vegetable crops like tomatoes, potatoes, garden pea, turnips, asparagus, brussels sprouts, and eggplants

(PowerPoint Slide 21)

2. **Pomology** is the science of producing fruits and nuts. It includes growing, harvesting, and marketing the crop. Common pomology crops include plums, bananas, pears, apricots, peaches, mulberries, dates, almonds, walnuts, and figs

**** Go back to the crops the students wrote on the board. Go through the horticultural crops and have the students try to group them using the information they just learned in Objective 3.**

Objective 4: Describe forestry and forest products.

(PowerPoint Slide 22)

IV. **Forestry** is the art and science of managing forests to yield maximum forest products and services. It is the managing of forest lands to meet human needs. Many people believe trees are grown only for their wood products, in fact trees are grown for several uses:

(PowerPoint Slide 23)

- A. The **crown** of the tree is the upper portion of the tree. The crown produces such items as fruits and nuts, decorations, and oils.

(PowerPoint Slide 24)

B. The ***trunk*** is the main stem of the tree. It is used in producing lumber and other wood products. The tree's bark is also used in producing oils, dyes, and drugs.

(PowerPoint Slide 25)

- C. Tree stumps are used in making veneer wood products. They are also used in producing turpentine, pine oil, and resin.
- D. Tree roots are used in the production of tea, oil, and turpentine.

**** TM: C2-1 or PowerPoint Slide 26 can be used to illustrate the uses of forest products.**

As you did for the other objectives, go back to the crops the students wrote on the board. Go through the forestry crops and have the students try to group them using the information they just learned in Objective 4.

Review/Summary: Concentrate your review and summary on the lesson's student learning objectives. Call on students to summarize the content. Questions on PowerPoint Slide 27 can also be used to review.

Application: Student will be able to identify plant from area and group them

Evaluation: Evaluation should focus on student achievement of the lesson's objectives. The self-check and evaluating sections at the ends of the chapters in the recommended resources will be helpful. A sample written test is also attached.

Answers to Sample Test:

Part One: Matching

1=e, 2=b, 3=g, 4=d, 5=f, 6=a, 7=h, 8=c

Part Two: Completion

1. crown
2. olericulture
3. Grain crops
4. Sugar cane and sugar beets

Part Three: Short Answer

1. Use TM: C2–4D to score
2. Field Crops—Used for oil, fiber and grain, Horticultural Crops—Grown for comfort, beauty, and food, and Forest Crops—includes wood, food, and medicinal products
3. Food Crop Horticulture is growing plants for food and Ornamental Horticulture is growing plants for their beauty

Sample Test

Name _____

Test

Unit C Lesson 2: Identifying Plants

Part One: Matching

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

- a. trunk
- b. tree farms
- c. pomology

- d. fiber crops
- e. plant science
- f. sucrose

- g. floriculture
- h. cereal grain

- _____ 1. The study of the structure, functions, growth, and protection of plants.
- _____ 2. Cultured forests.
- _____ 3. The production and use of plants for their flowers and foliage.
- _____ 4. Grown for the tiny threadlike structures used in clothing and paper.
- _____ 5. Commonly used as table sugar and a sweetener in foods and beverages.
- _____ 6. The main stem of a tree.
- _____ 7. The seed of grass type plants that are grown for human and animal consumption.
- _____ 8. The science of producing fruits and vegetables.

Part Two: Completion

Instructions. Provide the word(s) to complete the following statements.

- 1. The _____ is the upper portion of the tree.
- 2. The science of producing vegetable crops is _____.
- 3. _____ include plants grown for their edible seeds, not including horticultural crops.
- 4. _____ and _____ are the two main sugar crops.

Part Three: Short Answer

Instructions. Use complete sentences to answer the following questions.

1. What parts of trees are used and what products are derived from them?

a.

b.

c.

d.

2. List the three major plant science crops and provide examples of each.

3. What is the difference between ornamental horticulture and food crop horticulture?

USES OF FOREST PRODUCTS

