Arkansas CTE

Introduction to Horticulture: Grades 10, 11, 12

Adopted 2007

Introduction to Horticultural Science

1.1 Define terminology

1. Prepare a list of terms with definitions 1.1.1

1.2 List the major areas of the horticulture industry; nursery/landscape, floriculture, pomology, olericulture, ornamental horticulture

1. Identify two species of plants in each of these broad areas 1.2.1

1.3 Identify careers in the horticulture industry

1. Determine education requirements, working conditions, and salary for a career in the horticultural industry 1.3.1

1.4 Discuss FFA activities available to students in horticulture

1. Demonstrate knowledge by participating in Career Development Events (CDE) 1.4.1
2. Relate the role of supervised experience to advancements in the FFA 1.4.2
3. Keep records of FFA and supervised experience activities 1.4.3

Safety in Horticulture

2.1 Define terminology

1. Prepare a list of terms with definitions 2.1.1

2.2 Discuss the meaning and importance of safety and safe work with horticulture

1. Relate examples of safety hazards in horticulture, including equipment used in crop production and the inputs applied to plants such as pesticides and fertilizers 2.2.1
2. Name examples of accidents that have occurred locally in horticulture 2.2.2

2.3 Identify hazards in horticulture

1. Survey hazardous situations in local horticulture facilities and prescribe the appropriate safety measures to be taken and propose ways of eliminating or reducing the risk of these hazards 2.3.1
2. Develop a list of practices to reduce risk when working with plants 2.3.2

2.4 Describe the importance of personal safety in horticulture

1. Identify and properly use appropriate Personal Protective Equipment (PPE) with horticulture 2.4.1
2. Calculate the cost of PPE for an individual involved with horticulture 2.4.2
3. Work together with others to promote safety in horticulture 2.4.3
4. Take a test on horticulture safety before beginning work with plants 2.4.4

Classifying and Naming Plants

3.1 Define terminology

1. Prepare a list of terms with definitions 3.1.1

3.2 Differentiate between herbaceous and woody plants

1. Discuss the advantages of using perennials in a landscape 3.2.1
2. Give examples of five herbaceous and five woody plants 3.2.2

3.3 Explain differences between monocots and dicots

1. Identify characteristic leaf, stem, root, and floral structures of monocot and plants 3.3.1

3.4 Differentiate between deciduous and evergreen

1. Give examples of five deciduous and five evergreen plants that grow in the area 3.4.1

3.5 Discuss binomial nomenclature; genus, species, variety, cultivar

1. Determine the common and scientific names of five plants that grow in the local area or school greenhouse 3.5.1

Plant Science

4.1 Define terminology

1. Prepare a list of terms with definitions 4.1.1

4.2 List the four basic parts of a plant; roots, stems, leaves, reproductive parts

1. Draw a simple plant and label the four major parts 4.2.1

4.3 Describe the function of roots

1. Prepare a short report on the functions of roots 4.3.1

4.4 Discuss the function of leaves

1. Prepare a short report on the functions of leaves 4.4.1

4.5 Explain the function of stems

1. Prepare a short report on the functions of stems 4.5.1

4.6 Describe the function of flowers and fruit

1. Prepare a short report on the functions of flowers and fruits 4.6.1

4.7 Explain the photosynthesis process

1. Diagram the chemical equation for photosynthesis 4.7.1

4.8 Explain the cellular respiration

1. Diagram the chemical equation for cellular respiration 4.8.1

4.9 List the reproductive parts of a flower

1. Draw a complete flower and label the major parts 4.9.1

4.10 Examine pollination and fertilization

1. Illustrate the processes of pollination and fertilization from the release of pollen to double fertilization of the egg 4.10.1

Plant Growth

5.1 Define terminology

1. Prepare a list of terms with definitions 5.1.1

5.2 List the three basic mineral soil particles; sand, silt, clay

1. Relate the qualities of sand, silt, and clay 5.2.1

5.3 Discuss media types; mineral soil, soilless media

1. Distinguish between mineral soil and soilless media 5.3.1

5.4 List the three primary elements of a complete fertilizer; nitrogen, phosphorus, and potassium

1. Analyze the label from a bag of complete fertilizer to determine its contents 5.4.1

5.5 Discuss soil pH

1. Conduct media pH tests 5.5.1

5.6 Identify components of soilless media; peat moss, perlite, vermiculite

1. Select soilless media based on its components 5.6.1

5.7 List the environmental factors that affect plant growth; light, temperature, water, air

1. Explain the influence light, temperature, water, and air have on plant growth 5.7.1

5.8 Describe the effects of plant hormones

1. Conduct simple experiments to demonstrate the effects of plant hormones 5.8.1

5.9 Explain the importance of growth regulators

1. Apply plant growth regulators to plants for a desired response 5.9.1

Plant Propagation

6.1 Define terminology

1. Prepare a list of terms with definitions 6.1.1

6.2 Compare and contrast sexual propagation and asexual propagation

1. Propagate plants using sexual propagation methods 6.2.1
2. Propagate plants using asexual propagation 6.2.2

Pest Management

7.1 Define terminology

1. Prepare a list of terms with definitions 7.1.1

7.2 Read and interpret chemical labels

1. Explain the meaning of the different parts of a pesticide label 7.2.1

7.3 Identify and interpret the four signal words on chemical labels; danger, warning, caution, keep out of reach of children

1. Convey the meaning of the four signal words used on chemical labels 7.3.1

7.4 Identify Personal Protective Equipment (PPE) needed to apply pesticides; respirator, goggles, rubber gloves, rubber boots, long sleeved shirt, overalls/apron

1. Demonstrate the proper use of Personal Protective Equipment (PPE) 7.4.1

7.5 Discuss the benefits of integrated pest management

1. Explain the advantages associated with integrated pest management 7.5.1

Container-grown Plants

8.1 Define terminology

1. Prepare a list of terms with definitions 8.1.1

8.2 Identify the importance of interiorscaping

1. Visit malls, restaurants, hotels, or other locations with a large number of plants to observe the impact of plants on the interior landscape 8.2.1

8.3 Compare and contrast container-grown plants and field-grown plants

1. Discuss water and fertilizer requirements for container-grown and field-grown shrubs and trees 8.3.1

8.4 Explain the advantages and disadvantages of plastic, ceramic, terra cotta, and glass pots

1. Select pots based on the attributes of the different materials used to make the pot `8.4.1`

Using Plants in the Landscape

9.1 Define terminology

1. Prepare a list of terms with definitions `9.1.1`

9.2 Discuss the major types of plants used in the landscape; annual flowers, biennial flowers, perennial flowers, ground covers, ornamental trees, shade trees, shrubs, vines

1. Classify landscape plants according to their function in the landscape `9.2.1`

9.3 Explain hardiness and heat tolerance

1. Choose plants for the landscape based on their hardiness and heat tolerance `9.3.1`

9.4 Discuss sun exposure as related to plants; full sun, partial shade, shade

1. Choose plants for the landscape based on their tolerance to sun or shade `9.4.1`

9.5 Discuss deciduous vs. evergreen as used in a landscape

1. Evaluate the use of deciduous and evergreen plants in a landscape `9.5.1`