Arkansas CTE

# Forestry: Grades 10, 11, 12

Adopted 2008

## Overview of Forestry

### 1.1 Define terms

1. Match terms with definitions 1.1.1

### 1.2 Discuss career opportunities relating to forestry

1. Research a career in forestry to determine educational requirements, working conditions, and salary 1.2.1

### 1.3 Identify FFA activities that support an interest in forestry

1. Explore FFA, CDEs, and Proficiency award areas 1.3.1

### 1.4 Discuss the development of state and federal agencies dealing with forestry

1. Invite a guest speaker to address the class on state and federal agencies 1.4.1

### 1.5 Discuss environmental issues concerning forestry

1. Debate selected environmental issues, using the class as a mock public forum 1.5.1

### 1.6 Identify beneficial aspects of forestry

1. Write a report on the benefits from forests 1.6.1

## Safety in Forestry

### 2.1 Define terms

1. Match terms to their definitions 2.1.1

### 2.2 Discuss the meaning and importance of safety and safe work with forestry

1. Relate examples of safety hazards associated with forestry 2.2.1
2. Have students name examples of accidents that have occurred locally in forestry work 2.2.2

### 2.3 Identify hazards in forestry

1. Survey hazardous situations in local forestry 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 forestry 2.3.2

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### Describe the importance of personal safety in forestry

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

**2.5 Demonstrate safe use of a chainsaw**

1. Pass a written test on the safe use of a chainsaw 2.5.1
2. Demonstrate safe procedures for starting, operating, and storing a chainsaw. 2.5.2

**How Trees Grow**

**3.1 Define terms**

1. Match terms with definitions 3.1.1

**3.2 Discuss the parts of a tree and their functions**

1. Draw a tree and label the major parts 3.2.1
2. Prepare a short report on the functions of roots, stem, leaves, flowers, and fruit 3.2.2

**3.3 Differentiate between xylem and phloem**

1. Label a cross section of a tree trunk 3.3.1
2. Determine the age of a tree by counting the annual growth rings. 3.3.2

**3.4 Summarize the process of photosynthesis**

1. Write the photosynthesis equation/formula 3.4.1

**3.5 Summarize the methods by which trees reproduce**

1. Label the parts of a complete flower 3.5.1
2. Propagate trees asexually 3.5.2

**3.6 Describe processes by which trees enlarge in size**

1. Locate regions of growth on a tree and explain growth processes 3.6.1

**Dendrology – The Identification of Trees**

**4.1 Define terms**

1. Match terms to their definitions 4.1.1

**4.2 Distinguish between the characteristics of angiosperms and gymnosperms**

1. Collect cones and fruit of various trees for comparison 4.2.1

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**Describe the most important characteristics to use in identifying trees**

1. Collect leaves for branching and other identifying characteristics 4.3.1

### 4.4 Identify local trees

1. Collect leaves and twigs from 25 species of trees found in the local area, labeling them with both common and scientific names 4.4.1
2. Identify trees in the local area 4.4.2

### 4.5 Identify features of leaves that can be used for identification purposes

1. Label the parts of a leaf 4.5.1

## Measuring Land and Forest Products

### 5.1 Define terms

1. Match terms to their definitions 5.1.1

### 5.2 Identify equipment used in surveying land

1. Identify equipment from catalog photos 5.2.1
2. Locate an existing boundary using a compass 5.2.2

### 5.3 Summarize methods of measuring horizontal distance

1. Practice measuring areas of land around the school 5.3.1
2. Practice pacing as a method of determining distance 5.3.2

### 5.4 Summarize the processes for obtaining diameter and merchantable height of trees

1. Demonstrate the ability to measure diameter at DBH, using a Biltmore stick 5.4.1
2. Demonstrate the ability to determine merchantable tree height, using a Biltmore stick 5.4.2

### 5.5 Compare methods of determining volume for pulpwood and saw-log timber

1. Estimate volumes for pulpwood and saw-log timber 5.5.1

### 5.6 Describe methods of cruising timber

1. Complete a cruise report for a given stand of timber 5.6.1

### 5.7 Describe how age and growth rate of trees can be determined using an increment borer

1. Determine age and growth rate of trees in the local area 5.7.1

### 5.8 Identify common topographic map symbols

1. Using a topographic map, identify the symbols on the map 5.8.1

### 5.9 Describe the process of legal land description

1. Determine the legal description of a plot of land on a topographic map from a copy of a deed 5.9.1

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### 5.10 Apply GPS technology to forest management

1. Use GPS to locate points of interest 5.10.1

**Silvicultural Practices**

**6.1 Define terms**

1. Match terms to their definitions 6.1.1

**6.2 Explain the purpose of intermediate cuttings**

1. Visit a forest stand before and after intermediate cutting 6.2.1

**6.3 List situations in which thinning would be prescribed**

1. Mark trees to be cut in a plot 6.3.1

**6.4 Describe situations in which sanitation cuttings would be used**

1. Visit local forest areas in need of sanitation cuttings 6.4.1

**6.5 Describe situations in which salvage cuttings would be used**

1. Assess a forest area for salvage cutting 6.5.1

**6.6 Describe conditions or agents affecting forest health**

1. Visit local forest areas, and determine types of cuttings needed 6.6.1
2. Locate websites that showcase tree disorders 6.6.2

**Reforestation Methods**

**7.1 Define terms**

1. Match terms to their definitions 7.1.1

**7.2 Discuss methods of artificial reforestation**

1. Plant tree seedlings and/or seeds 7.2.1

**7.3 Identify sources of seedlings in your area (state nursery run by forest commission, soil and water conservation district, commercial nurseries)**

1. Price seedlings with various suppliers 7.3.1

**7.4 Describe protection measures for young plantings of seedlings**

1. Protect newly planted seedlings 7.4.1

**7.5 Describe the process of natural reforestation**

1. Visit a forest and show how the natural process of reforestation is taking place 7.5.1

**Harvesting and Marketing Forest Products**

**8.1 Define terms**

1. Match terms to their definitions 8.1.1

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**Describe the principal uses of timber**

1. Obtain examples of tree products 8.2.1

### 8.3 Discuss the role of pulpwood in the forest industry

1. Visit a pulpwood mill to observe how the trees are processed `8.3.1`

### 8.4 Identify timber markets

1. Research the Internet to identify timber markets `8.4.1`
2. Invite a timber industry person to speak to the class on timber markets `8.4.2`

### 8.5 Describe the range of technology used in logging operations

1. List the advantages and disadvantages for the different technologies used in logging operations `8.5.1`

### 8.6 Compare the processes used for manufacturing lumber to those used for pulpwood

1. Prepare a report that compares the processes used for manufacturing lumber to those used for pulpwood `8.6.1`