

TEACHING KATE

TEACHING KIDS ABOUT THE ENVIRONMENT

TREE INVENTORY

Grade Level: 6-8

Time Required: 5 class periods of 50 minutes each

SC Science Standards

This lesson plan was correlated with only the grade level specified unless otherwise noted.

Grade 6:

I. A. 1. c. 1

I. A. 1. d. 1

I. A. 2. g, h

I. A. 7 a, b

*lesson could be

easily altered to meet

II. C. 1. f

Grade 7:

I. A. 1. c. 1

I. A. 1. d. 1

I. A. 2. g, h

I. A. 7 a, b

Grade 8:

I. A. 1. c. 1

I. A. 1. d. 1

I. A. 2. h

I. A. 7 a, b

Purpose

Students will inventory an area for the tree populations. They will be able to distinguish between hardwoods and softwoods. They will learn how to use the chain, the form of measurement used by foresters to measure an area. The students will determine the length of and learn how to measure using their pace. They will learn to draw a map of an area which includes man made structures and trees.

Skills

Calculating, classifying, comparing, contrasting, small group interaction, interpreting, measuring, predicting, observing.

Concepts

Identification of different types of trees, measuring using chains and paces, map drawing.

Materials Needed

Paper Pencils
Worksheet Tree Identification Book
Rope/String 66 Feet Long Red and Green Crayon
Colored Pencils/Markers

Definition of Terms

<u>Chain</u>	A unit of measure used by foresters and surveyors which equals 66 feet. Eighty chains equal one mile. Ten square chains equals one acre.
<u>Forest</u>	A plant community in which the dominant vegetation is trees and woody plants.
<u>Hardwood</u>	A term describing broadleaf, usually deciduous, trees such as oaks, maples, ashes, and elms. The term does not refer to the hardness of the wood. Some hardwoods (such as live oak and American holly) are evergreen.
<u>Softwood</u>	A tree belonging to the order Coniferales which is usually evergreen, cone bearing and having needles or scale-like leaves such as pines, spruces, firs and cedars. These are often called conifers. Bald cypress is a deciduous conifer. The term does not refer to the softness of the wood.
<u>Tree Population</u>	The number of trees in a specified area.

Before the Session

Select a study area. Inventory all trees taller than 5 feet. Make a map identifying all the marked trees and fixed structures. Make copies of worksheet “Inventory Map.” Select several (4 or 5) pacers.

Background Information

Before experts decide what needs to be planted or eliminated from an area they need to know what is on the site. One way of establishing this baseline information is to take an inventory. In conducting an inventory of this type all trees in the study area are identified. A description is then made as to softwood or hardwood, general health and condition, size or age and specific location. After the objectives of the landowner are determined, inventory decisions can be made as to trees which might be added or eliminated to improve the horticultural appearance of the site.

Foresters use the chain as a measurement tool. To help students understand this measurement they should learn either how to pace or use a length of rope to measure.

Sample Calculation for Determining Pace and Steps per Chain:

Student pace for 10 steps = 20 feet.

$20 \text{ feet} / 10 \text{ steps} = 2 \text{ feet/step}$

How many steps to a chain?

$66 \text{ feet} / 2 \text{ feet/step} = 33 \text{ steps}$

Suggested Lesson Plan

1. Discuss with students the importance of knowing what trees are in an area.
2. Have students predict how many and what kinds of trees will be found in the study area. Be sure to explain that they will only count trees at least 5 feet tall.
3. Pass out "Inventory Map" worksheet. Tell students to write their predictions on the inventory sheet.
4. Explain that students are to use the "Inventory Map" worksheet to draw their maps. First put fixed structures on the map. This will include school buildings, parking lots, sidewalks, etc.
5. Next check on student measurements. Using a length of rope or heavy string 66 feet long the boundaries can be measured by chain. If you want to use pacers follow these directions:
 - a. Pick 4 or 5 students to be pacers or if time allows all students should determine their pace.

- b. Have each student walk 10 normal steps. Measure from heel before first step to the toe of the last step. Make sure student starts at a marked spot with the heel on that spot.
 - c. Have student or class calculate how many paces will equal one chain (66 feet) for each pacer.
6. Measure boundaries by using a length of rope (66 feet) or by using pacers.
 7. Calculate measurements and draw and label these on the “Inventory Map” worksheet.
 8. Explain to students they are to count only trees that are at least 5 feet tall. Also explain the symbols in the legend. Sick trees are obviously broken or damaged trees.
 9. Actually go outside and count the trees. Mark the trees and label the trees on the “Inventory Map.”
 10. Place students in groups of 3 or 4. Have them discuss results and compare maps. If there is a discrepancy have them return to the area to check it out.
 11. Have each group of students draw a large map from the “Inventory Map” worksheet.

Application

Modification of the plant community to provide enhanced diversity and therefore improved habitat for certain wildlife species.

Resources Available

Kessler, G. 1994. Department of Extension Forest Resources, Clemson University, Clemson, S. C. 29634. Extension Service.

The Audubon Society Field Guide to North American Trees, Eastern Region. 1993. Alfred Knopf, Inc. New York, N. Y.

Winslow, D. 1994. S. C. Department of Natural Resources, Columbia, S. C.

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TREE INVENTORY

WORK SHEET — INVENTORY MAP

Name:

Date:

Legend

(H) = Hardwood
(S) = Softwood
Green = Healthy
Red = Sick