

FORESTRY

Diameter Tape and Cruising Stick

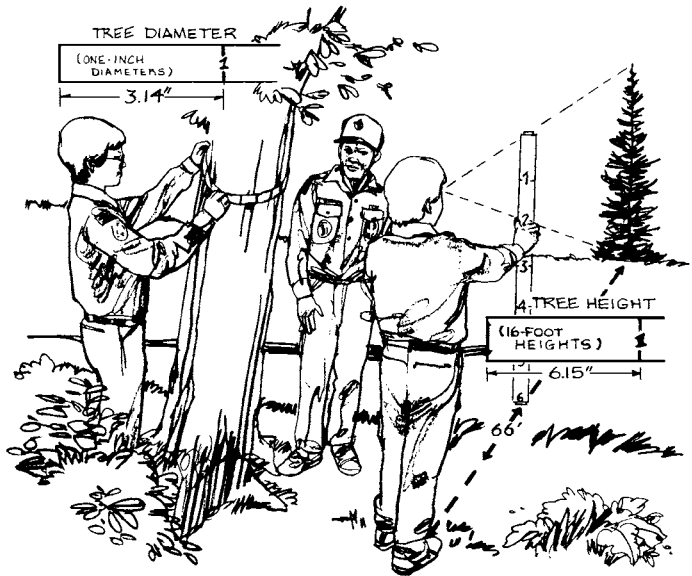
Foresters use cruising sticks to measure a tree's diameter and height. These facts are essential to figure the amount of wood in a tree. To measure a tree's diameter:

1. Cut a strip of flexible paper about $\frac{1}{2}$ inch wide and 45 inches long.
2. Begin at one end of the paper strip and make ink marks 3.14 inches apart. Number these marks consecutively starting with "1" on the left end of the tape (3.14 inches on your tape is equal to 1 inch of tree diameter).
3. To measure the tree's diameter, wrap tape around the tree at chest height, 4 $\frac{1}{2}$ feet above the ground. The diameter of the tree in inches will be at the mark nearest where the tape overlaps the zero end.

To measure a tree's height:

1. Glue a strip of hard paper or cardboard on one side of a yardstick.
2. Begin at one end and make marks 6.15 inches apart with black ink.
3. Label the first mark "1," second mark "2," and so on.

4. To measure the tree, stand 66 feet from tree (keeping the stick perpendicular) and note the place on the stick where the line of sight crosses it. The nearest figure is the number of 16-foot lengths in the tree. If the figure is two, as in the illustration, then there are two 16-foot lengths. The tree is 32 feet high, or two times 16 feet.



A prominent government official once said that we couldn't afford to gain the vastness of space and lose the earth in the process. The implications of this statement point to the ever-increasing importance of preserving the earth's natural resources in the space age.

Satellites, jet planes, and nuclear energy all assume a greater importance each day. But the human energy that produces and operates these machines is still dependent upon the soil of the earth for food. The machines themselves can be produced only with the help of vast supplies of clean water—water that comes in part from well-managed forest watersheds.

Every Scout should know the importance of all natural resources and of the interdependence of forest, range, soil, water, and wildlife.

SCOUTING OUTCOMES

This month's patrol and troop activities should give your Scouts

- An appreciation for the wonders of nature and possibly a growing feeling of closeness to God
- A greater understanding of how pollution affects the natural world and how Scouts can help to stop it

- A strengthened resolve to do their "duty to country" through good conservation practices
- Increased self-confidence

ADVANCEMENT OPPORTUNITIES

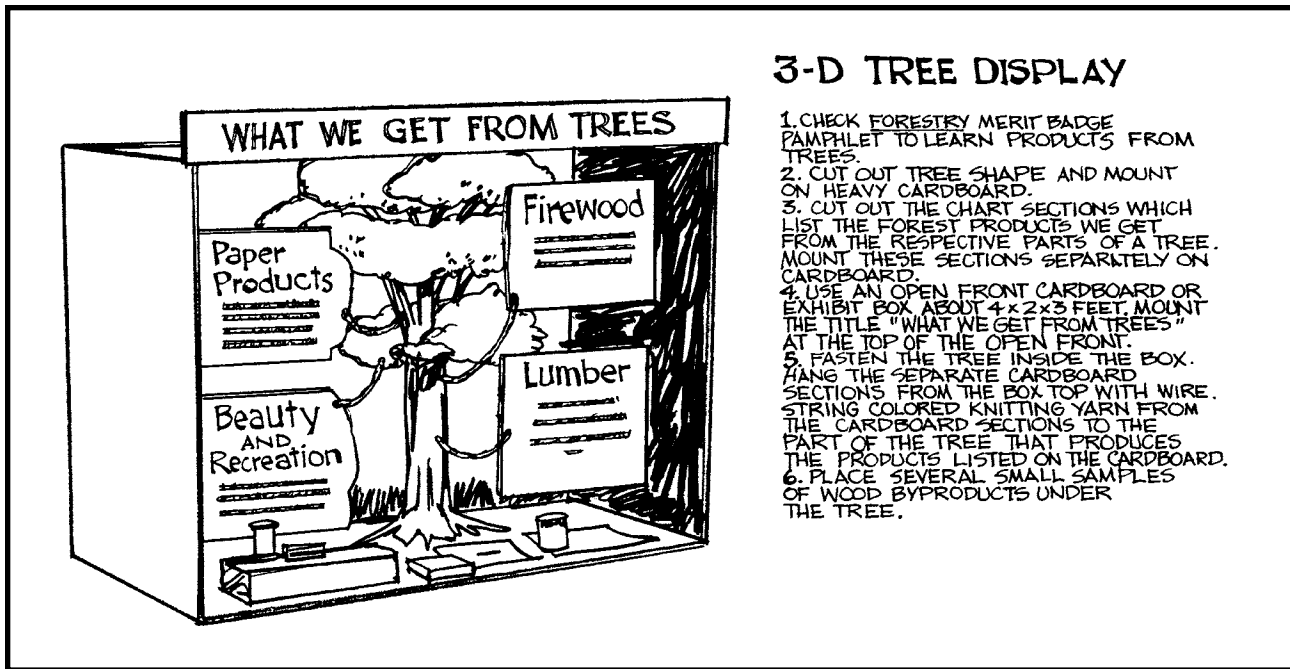
By month's end, all Scouts should meet many of their basic nature and camping requirements through First Class rank. Depending on troop meeting and campout activities, they may also complete all or part of the following rank requirements:

Tenderfoot

- Outdoor—cooking, camping, hiking, nature
- Citizenship—flag ceremonies
- Patrol/troop participation—patrol identification
- Personal development—Scout Oath and Law

Second Class

- Outdoor—cooking, camping, hiking, nature
- Citizenship—flag ceremonies
- Patrol/troop participation
- Personal development—Scout Oath and Law



3-D TREE DISPLAY

1. CHECK FORESTRY MERIT BADGE PAMPHLET TO LEARN PRODUCTS FROM TREES.
2. CUT OUT TREE SHAPE AND MOUNT ON HEAVY CARDBOARD.
3. CUT OUT THE CHART SECTIONS WHICH LIST THE FOREST PRODUCTS WE GET FROM THE RESPECTIVE PARTS OF A TREE. MOUNT THESE SECTIONS SEPARATELY ON CARDBOARD.
4. USE AN OPEN FRONT CARDBOARD OR EXHIBIT BOX ABOUT 4 X 2 X 3 FEET. MOUNT THE TITLE "WHAT WE GET FROM TREES" AT THE TOP OF THE OPEN FRONT.
5. FASTEN THE TREE INSIDE THE BOX. HANG THE SEPARATE CARDBOARD SECTIONS FROM THE BOX TOP WITH WIRE. STRING COLORED KNITTING YARN FROM THE CARDBOARD SECTIONS TO THE PART OF THE TREE THAT PRODUCES THE PRODUCTS LISTED ON THE CARDBOARD.
6. PLACE SEVERAL SMALL SAMPLES OF WOOD BYPRODUCTS UNDER THE TREE.

First Class

- Outdoor—cooking, camping, nature, hiking
- Citizenship—flag ceremonies
- Patrol/troop participation
- Personal development—Scout Oath and Law

Merit Badges. Older Scouts can concentrate on the Nature, Camping, and Forestry merit badges this month; they should be able to complete many of the requirements. Depending on activities during the campout, they may also complete requirements in Cooking, Hiking, Pioneering, Mammal Study, Geology, Fish and Wildlife Management, Insect Study, and Wilderness Survival.

PARENT/GUARDIAN PARTICIPATION

The patrol leaders' council may involve parents in the program feature this month by

- Asking qualified people to assist with instruction in environmental skills
- Inviting parents on the campout
- Asking parents to provide transportation to the campout

PATROL LEADERS' COUNCIL

The patrol leaders' council should meet during the early part of the previous month to plan troop activities for this program feature. If you don't complete all items on the following agenda, continue planning at patrol leaders' council meetings after each troop meeting.

- Decide on the campsite for the troop campout. If permissions will be needed, assign someone to secure them.
- Plan the special activities for the campout. See the ideas in these pages. If special gear or tools will be needed, assign someone to obtain them; seek help from the troop committee, if necessary.
- Review the Leave No Trace principles found in the *Boy Scout Handbook*.
- Plan details of troop meetings for the month. Assign patrol demonstrations, covering skills that will be needed for the campout activities.

FEATURE EVENT

Leave No Trace Outing

On this outing, renew your commitment to low-impact camping. Use methods that will not have a lasting impact on the environment. Make sure all Scouts, regardless of age, rank, or outdoor experience, know and practice these methods.

Activities for Campout and Back Home

LUMBER VALUE. Choose an area of forest land and count the number of trees. Find out from a local resource agency or forest industry representative how to make a rough estimate of the number of board feet yielded per tree, and the number that could be obtained from 100 acres (or 100 hectares). Check with a lumberyard to determine the retail price of lumber per 1,000 board feet. Contact a timber company and ask the cost



of converting trees to 1,000 board feet of lumber and transporting it to the lumberyard. Subtract this amount from the retail price quoted by the lumberyard. What might this 100 acres (or 100 hectares) of forest be worth in dollars for lumber? Note: This figure will not take into account marketable by-products, such as particle board or pressed wood logs.

What might the value of this forestland and its lumber be other than as measured in dollars; for example, as a source of inspiration and solitude?

WATERSHED VALUE. Discuss the concept of a watershed and the ways in which a forest affects the amount of water available in an area.

From the local water company, find out the dollar value of 1,000 gallons of water (or 1,000 cubic meters). What is the dollar value for the amount of water that fell on the sample plot?

From the U.S. Weather Service or your local soil conservation service, find out what percent of rainfall they estimate goes into sources (aquifers, streams, etc.) available for human consumption. How would this compare with the same amount of rainfall on a plot of the same size in open prairie, for example?

Calculate approximately what the forest is worth as a watershed. Attempt to calculate what the forest is worth as a watershed to living things other than people.

WILDLIFE VALUE. Find out what types of wildlife inhabit this forestland. How many animals and birds? Are there any deer, turkey, quail, or other species that are hunted by humans?

Determine how much money local hunters spend on licenses, guns, ammunition, equipment, lodging, travel, and guides. Include any forms of nonconsuming uses related to wildlife (photography and bird-watching, for instance) that generate economic income in this area. What is the total wildlife value (as measured in dollars) of this land?

Describe the wildlife value of this land other than in dollars; for example, as a gene pool for future generations.

RECREATIONAL VALUE. Determine what forms of recreation take place in the forest. Find out what camping or parking charges are levied per day. How many people use this forest for camping or other recreation, and how much money do they spend in the area? What is the total recreational value measured in dollars? What recreational values in the forest are not easily measured in dollars?

FORAGE VALUE. Determine whether cattle or sheep could use this land for grazing. How many animals could it support? How much are the animals worth on today's market? What are the total forage values, economic and otherwise?

The forest's intangible values for wildlife, meteorological influences, and natural beauty are hard to calculate but are nonetheless real and worthy of consideration.

If the community wanted to clear this forest in order to build homes, provide farm sites, or put in a highway, how would the proposal influence the land value? Decide which uses make the land more valuable and to whom.

Specify how you are measuring value. Find another way to measure value. Does your answer change?

Decide whether the various values determined for the forest could be applied to other areas of the same size but of different forest types. Specify what variables might make a difference in the economic (or the intangible) values of the area, and from whose viewpoint.

ENVIRONMENTAL VALUE. Trees also help "clean" the atmosphere by absorbing carbon dioxide for photosynthesis. That means less carbon dioxide enters the atmosphere to contribute to global warming.