

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:

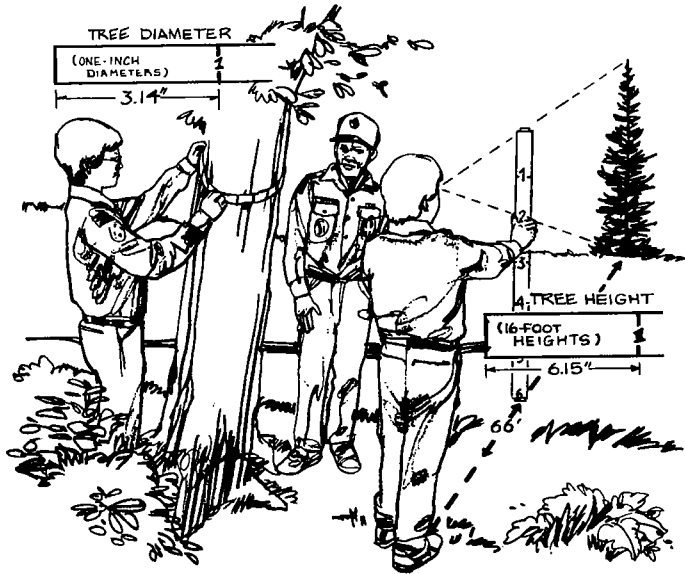
1. Cut a strip of flexible paper about $\frac{1}{2}$ inch wide and 45 inches long.
2. Begin at one end of the paper strip and make ink marks 3.14 inches apart. Number these marks consecutively starting with "1" on the left end of the tape (3.14 inches on your tape is equal to 1 inch of tree diameter).
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 it; hold one arm out horizontally and the stick perpendicular to the ground at arm's reach, about 25 inches from your eyes, as shown. Slide the stick up or down until the top of the stick lines up with the treetop. Without moving your head, sight to the bottom of the

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

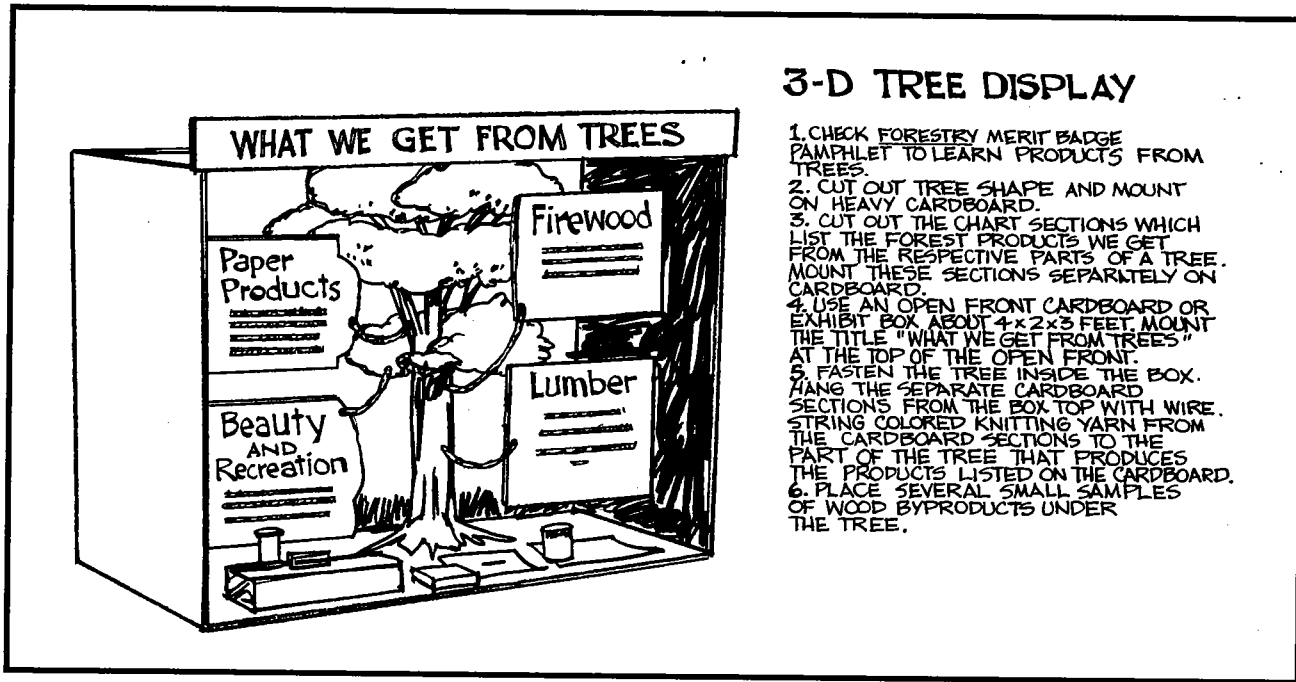
By month's end, all Scouts should meet many of their basic nature and camping requirements through First Class rank. Depending on troop meeting and campout activities, they may also complete all or part of the following rank requirements:

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.

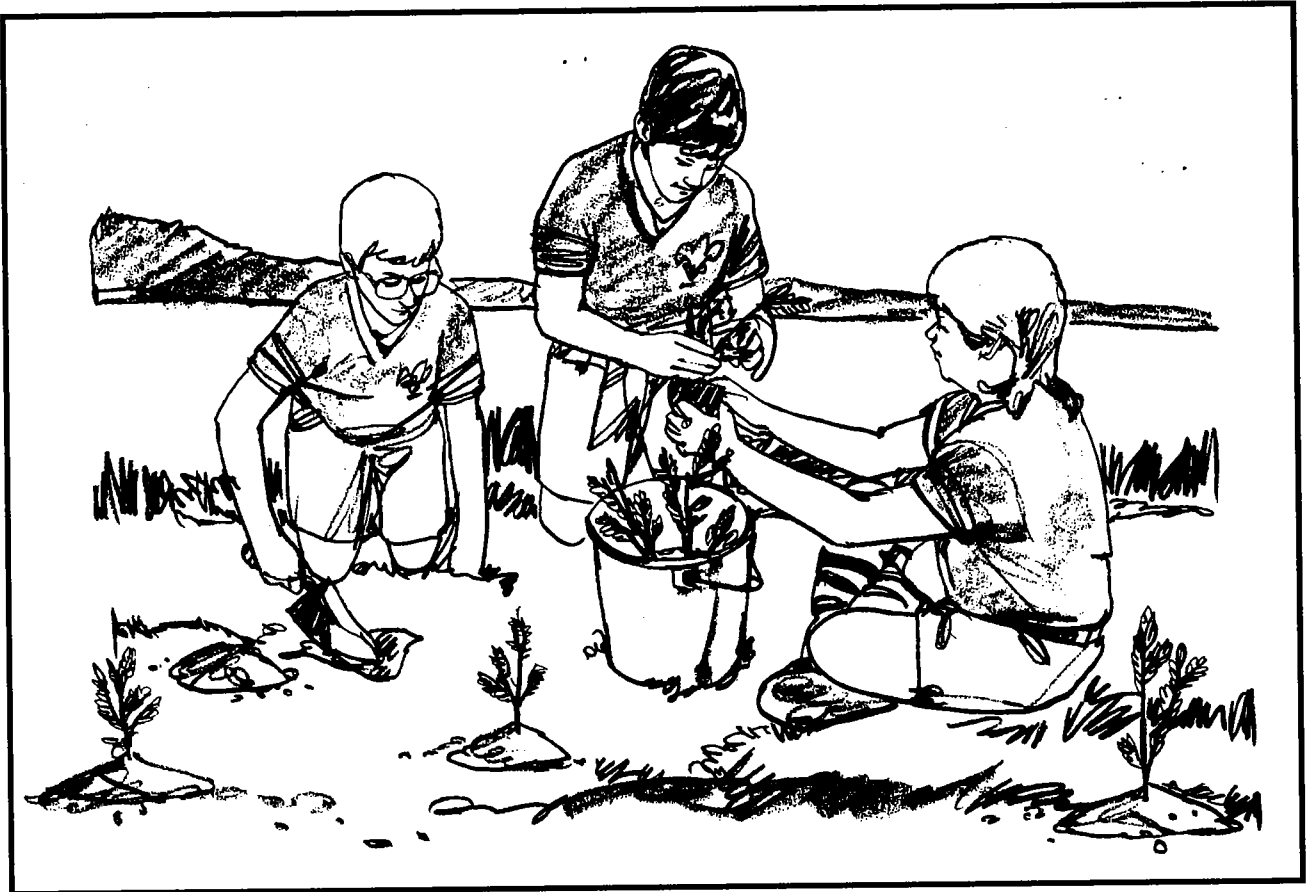
FEATURE EVENT

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.

FORESTRY

TROOP MEETING PLAN

Date _____ Week 1

ACTIVITY	DESCRIPTION	RUN BY	TIME
Preopening _____ minutes	Play Poison. Have the troop form a circle, but with Scouts of various patrols alternating. Mark a circle on the ground, 5 to 6 feet in diameter. All Scouts join hands and move rapidly around the circle, while each Scout tries to force the opponent next to him on either side to step into the circle. Any Scout stepping into the circle is "poisoned" and drops out of game. The game is continued until only one Scout is left. His patrol wins.		
Opening Ceremony _____ minutes	<ul style="list-style-type: none"> • Assemble the troop. • Hold a uniform inspection. • Repeat the Scout Oath. • Present colors. • Recite the words to the national anthem. 		
Skills Instruction _____ minutes	<ul style="list-style-type: none"> • New Scouts work on nature requirements to identify 10 kinds of wildlife and local poisonous plants. Play Nature Kim's Game. (See the Games section of the <i>Troop Program Resources</i>.) • Experienced Scouts plan to do a conservation project. Get advice from a state or federal conservation service. • Older Scouts work on the Venture program, or take an inventory of troop camping gear and make repairs. 		
Patrol Meetings _____ minutes	Discuss plans for the campout this month and make sure everyone knows what his assignments are and what to bring. New Scouts need to know what support they will provide for the outing. Patrols plan activities to work on advancement. Plan the menu for the campout.		
Interpatrol Activity _____ minutes	Play Three-Legged Football. (See the Games section of the <i>Troop Program Resources</i> .)		
Closing _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> • Form the troop into patrols, call patrol leaders forward to lead patrol yells. • Repeat the Scout Law. • Scoutmaster's Minute. • Retire colors. 	SM	
After the Meeting	Patrol leaders' council reviews the next meeting and plans for the Leave No Trace outing. Begin work on next month's program feature.		

*Troop Program Resources for Scout Troops and Varsity Teams, Supply No. 33588

FORESTRY

TROOP MEETING PLAN

Date _____ Week 2

ACTIVITY	DESCRIPTION	RUN BY	TIME
Preopening _____ minutes			
Opening Ceremony _____ minutes			
Skills Instruction _____ minutes	<ul style="list-style-type: none"> • New Scouts plan a 5-mile hike. This could be a nature hike. They work on basic hiking safety procedures. • Experienced Scouts plan a field trip to a natural area, such as a park, forest, lake area, etc. Plan to determine the number of species of trees and plants and look for evidence of insect or disease damage. If you do this in the winter, identify trees by bark and twigs. • Older Scouts work on the Venture program, or assist the troop guide in teaching hiking techniques. 		
Patrol Meetings _____ minutes	Review assignments for the campout. First-time campers continue working on troop procedures for hiking and camping. All other patrols continue to work on activities for advancement on the outing.		
Interpatrol Activity _____ minutes	Do Nature Scavenger Hunt. (See the Games section of the <i>Troop Program Resources</i> .)		
Closing _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> • Scoutmaster's Minute. • Retire colors. 	SM	
After the Meeting	Patrol leaders' council reviews the next meeting and plans for the troop outing. Continue work on next month's program feature.		

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TROOP MEETING PLAN

Date _____ Week 3

ACTIVITY	DESCRIPTION	RUN BY	TIME
Preopening _____ minutes			
Opening Ceremony _____ minutes			
Skills Instruction _____ minutes	<ul style="list-style-type: none"> • Nature Ramble: Patrols are sent out within a specified distance from the meeting place to look for conservation work that could be used in their rank advancement. Collect items for the interpatrol activity. If there is a body of water, such as a creek or pond, take a jar and fill it with water to study things that would live at the edge of the water, such as crayfish, frogs, turtles, etc. • Older Scouts work on the Venture program or participate in Nature Ramble. 		
Patrol Meetings _____ minutes	Finalize menus for the troop campout and make sure everyone knows what he will need to bring. Review clothing and equipment needs and collect any necessary fees. Review plans for any conservation projects that your patrol has been planning.		
Interpatrol Activity _____ minutes	Do Nature Memory Hunt. (See the Games section of the <i>Troop Program Resources</i> .)		
Closing _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> • Scoutmaster's Minute. • Retire colors. 	SM	
After the Meeting	Patrol leaders' council reviews the next meeting and plans for the outing. Continue work on next month's program feature.		

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FORESTRY

TROOP MEETING PLAN

Date _____ Week 4

ACTIVITY	DESCRIPTION	RUN BY	TIME
Preopening _____ minutes			
Opening Ceremony _____ minutes			
Skills Instruction _____ minutes	<ul style="list-style-type: none"> • New Scouts review troop camping procedures and their involvement in the troop campout (<i>Boy Scout Handbook</i>). • Experienced Scouts finalize plans for a nature hike or conservation project. If it will be held during the troop outing this month, make sure they do their share of duties with the troop. • Older Scouts work on the Venture program or plan a 1K orienteering course for the campout. 		
Patrol Meetings _____ minutes	Review plans and assignments for the campout. Make sure everyone knows travel plans and equipment needs. Go over the patrol duty roster. Make sure that you have any special equipment you will need for the nature projects you will be doing.		
Interpatrol Activity _____ minutes	(Select a game from the Games section of the <i>Troop Program Resources</i> .)		
Closing _____ minutes Total 90 minutes of meeting	<ul style="list-style-type: none"> • Scoutmaster's Minute—Conduct a reflection on the experiences of the month. • Retire colors. 	SM	
After the Meeting	Patrol leaders' council reviews the next meeting and checks last-minute details for the Leave No Trace campout. Finalize work on next month's program feature.		

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FORESTRY

TROOP OUTDOOR PROGRAM PLAN

Date _____

TIME	ACTIVITY	RUN BY
Friday evening	Load gear at meeting location, leave for campsite. Plan only a light meal enroute.	SPL
	Arrive at campsite, off-load equipment and set up patrol sites. Stow gear and set up camp.	SPL/PL
Saturday 6:30 A.M.	Cooks and assistants up. Prepare breakfast. (Cooks should be working on First and Second Class requirements.)	Cooks, assistants
7:00 A.M.	Everyone else up. Take care of personal hygiene, air tents, hang out sleeping bags.	
7:30 A.M.	Breakfast	
8:00 A.M.	Clean up.	Cooks
	Patrols put up the gear for morning activities, clean up patrol site.	
8:30-11:30 A.M.	Set up nature trail, start conservation project, or do basic Scouting skills activities.	SPL
11:30 A.M.	Sack lunch	
Noon	Continue conservation/nature activities.	
4:30 P.M.	Start dinner preparation.	Cooks
5:30 P.M.	Dinner	SPL
6:00 P.M.	Clean up.	Cooks
8:00 P.M.	Troop campfire	
9:00 P.M.	Cracker barrel	
10:00 P.M.	Lights out	
Sunday 6:30 A.M.	Cooks and assistants up. Prepare breakfast. (Cooks should be working on First and Second Class requirements.)	Cooks, assistants
7:00 A.M.	Everyone else up. Take care of personal hygiene, air tents, hang out sleeping bags.	
7:30 A.M.	Breakfast	
8:00 A.M.	Clean up.	Cooks
	Patrols put up the gear for morning activities, clean up patrol site.	
8:30 A.M.	Worship service	

TIME	ACTIVITY	RUN BY
9:00-11:00 A.M.	Patrol games—Use four games from the Games section of <i>Troop Program Resources</i> . *	
11:00 A.M.	Break camp.	
Special equipment needed	Troop camping equipment, cameras, pens, tools for conservation project	

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