

Webelos Forester Activity Badge

Outdoor Group

Foresters know how to care for and grow trees. Foresters can identify trees and what sort of wood they make. They also know what important things trees need in order to be healthy and grow. Webelos Scouts will learn about the forests where they should be spending more time.

IDEAS FOR DEN ACTIVITIES

- -Go for a hike and focus on the trees that are native to your area.
- -Learn to identify and measure (height and diameter of) trees.
- -Collect leaves and identify the trees they come from.
- -Find a tree stump or section and count the rings. What can they tell you?
- -Learn the Outdoor Code.
- -Plant seedlings.
- -Plan a day hike to look at leaves.
- -Visit a forest ranger or invite one to visit your den.

MEASURING TREES!

Foresters need to know how big trees are in order to determine how much wood they have. Two instruments are needed for these measurements. These instruments are called diameter tape and a cruising stick. Making these could be a den activity before going to the field. Diameter tape can be made by using a piece of ribbon that has marks every 3.14 inches and numbered consecutively. When wrapped around a tree (done at 4 1/2 feet above the ground) it will tell the diameter of the tree. A regular tape measure will work, divide by 3.14. The cruising stick is marked every 6.15 inches. Standing 66 feet away from the base of the tree, hold the stick 25 inches from your face and align the end of the stick with the bottom of the tree and see where the top of the tree falls on the cruising stick. Each 6.15 inch mark equals 16 feet. If the tree falls half way between the first and second mark, then the tree is about 24 feet tall.

TREE RINGS

Trees grow not only in height each year, but also in girth, and you can actually count the years that have passed by counting the rings on the stump of a tree. The rings also offer clues to the conditions that affected the tree during its lifetime. Wide rings show years of strong growth; narrow rings suggest that the tree was subjected to adverse condition, such as drought, a hard winter, insect damage, fire, and even competition for sunlight and nutrients from neighboring trees.



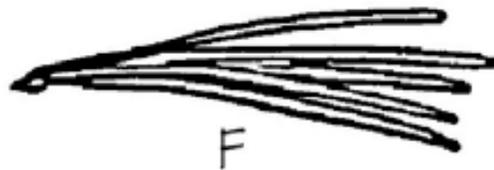
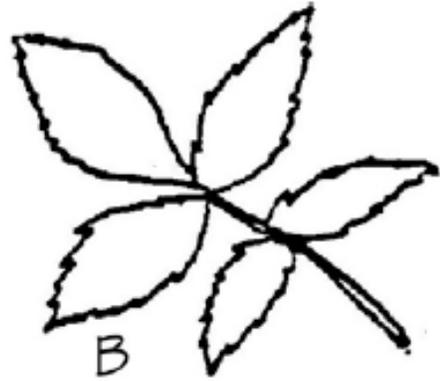
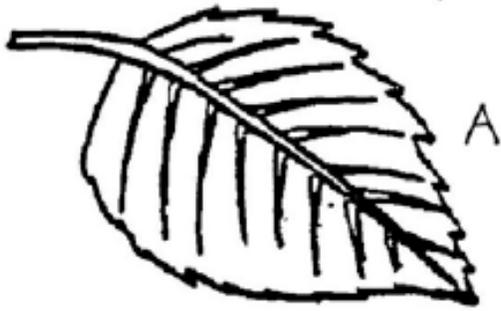
IDENTIFY SOME TREES WITHOUT LEAVES

Trees have very distinctive silhouettes (with and without their leaves). Many guide books include tiny silhouettes to help you identify the trees. Trees come in all shapes and sizes, just like people! The bark also differs considerably from tree to tree, and from young to old. Again, like people the bark of young trees is smooth and even; older trees have rough and wrinkly looking bark.

Buds offer many clues, too. Before trees even lose their leaves in autumn, they are preparing for the new leaves that will clothe them the following spring. Each bud is protected by scaled covering, or fuzzy hairs. There is much variation from tree to tree.

A LEAF QUIZ

Can You Identify These Leaves?



Using the drawings, match the leaves with the name of the tree...

1. White Oak _____
2. Maple _____
3. Elm _____

4. Sassafras _____
5. Hickory _____
6. Pine _____

Answers to "A Leaf Quiz" on previous page: 1.E 2.D 3.A 4.C 5.B 6.F

TREE KEYS?

A Tree key is what many people, even botanists (people who study plants), use to help them figure out what kind of tree it is that they might not know.

Some keys are interactive and found online at the following links:

<http://www.dnr.state.wi.us/org/caer/ce/eeek/veg/treekey/index.htm>

<http://www.extension.iastate.edu/Pages/tree/key.html>

<http://www.arborday.org/trees/treeID.cfm>

<http://www.uwsp.edu/cnr/leaf/Treekey/tkframe.htm>

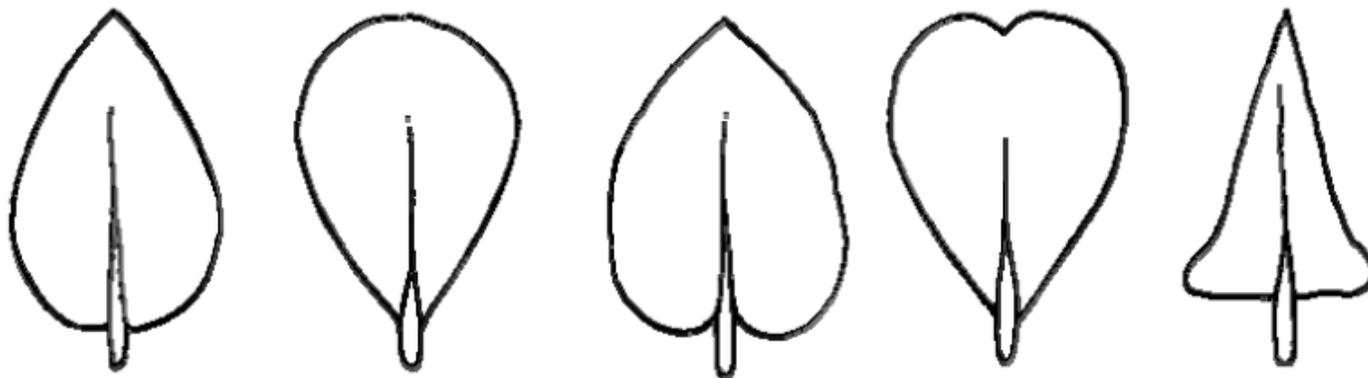
<http://www.cas.vanderbilt.edu/bioimages/tree-key/simple-leaf-trees.htm>

<http://www.oplin.org/tree/leaf/byleaf.html>

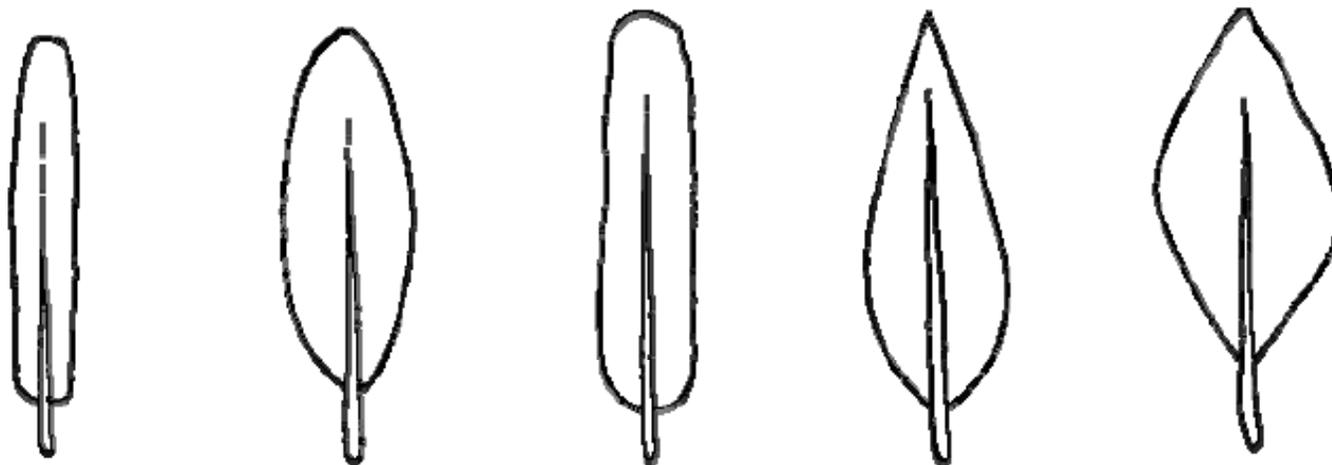
<http://www.fw.vt.edu/dendro/Forsite/Idtree.htm>

However, to use them, you sometimes need to know how to describe a leaf...

Some Leaf Shapes... do you know any leaves with these shapes?



Left to right: Ovate, Obovate, Cordate, Obcordate, Hastate



Left to Right: Linear, Elliptical, Oblong, Lanceolate, Rhomboid

Some leaves are really a group of leaflets. These are called compound leaves.

Left to Right, Pinnate, Palmate, Trifoliate, Bipinnate

A leaf margin is what the outside edge of the leaf looks like. Here are some examples of leaf margins:

Left to Right: Serrate, Dentate, Crenulate, Toothed, Lobed

More on the Forester Activity Badge

The Forester Activity Badge is part of the Outdoor group. The Webelos Scouts will learn how to identify the trees around them, how trees grow, and how to prevent forest fires.

At one time, both the east and west coasts of the United States formed a continuous changing, forest of trees ranging from pines to palm. Then, in a period of 350 years these forests came down and in their place rose eroded hillsides, flooded plains, and dead animals. The small areas, of forested land left are in danger of being destroyed by the advent of asphalt, pollution and people. The purpose of the Forester badge is to teach the boys to respect one of the few things that serve people while they live and after they die...trees.

Unless you are an avid gardener or outdoorsman, you may need a little more information to prepare you for this badge. There are some excellent free resources out there. Here's just a few:

The United States Department of Agriculture, Forestry Division, will send you a publication called "A Guide to Your National Forests", showing all the national forests and national grasslands and other lands administered by the U. S. Forest Service. The back of the map is chock full of information about the forest service.

Write to them at the address below and request publication FS-418, "A Guide To Your National Forests":

U.S.D.A.-Forest Service
201 14th St., SW
P. O. Box 96090
Washington, DC 20090-6090

The U. S. Forest also will send you these publications if you write to the address below and request them: "Keeping Trees Healthy" (no. A7800430), "Trees Are Valuable" (no. 7800429) and "Planting A Tree" (no. 7800428). Write to:

Forest Service, USDA
P. O. Box 2417
Washington, DC 20013

GLOBAL RELEAF is a program of the U.S.A.'s oldest nonprofit conservation organization, American Forests. Write and request their comprehensive information package:

GLOBAL RELEAF, P. O. Box 2000,
Washington, DC 20013-2000

The NATIONAL ARBOR DAY FOUNDATION offers several publications and will send them to you if you write to them at this address:

The National Arbor Day Foundation
100 Arbor Avenue
Nebraska City, NE 68410

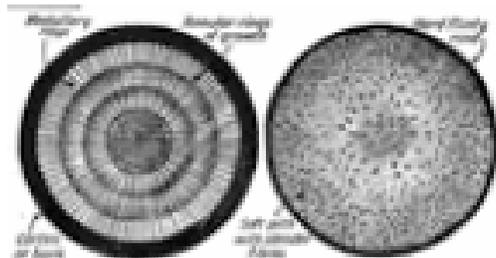
Objectives:

- ✓ To make boys more observant and appreciative of trees.
- ✓ To instill the idea of conservation in WEBELOS Scouts.
- ✓ To teach boys the value and uses of trees.
- ✓ To make WEBELOS Scouts aware of devastation due to wildlife.

Pack and Den Ideas

- ✓ Visit a lumber yard, a sawmill, or a tree farm.
- ✓ Spend a den meeting teaching WEBELOS Scouts how to measure tree heights (see Official Boy Scout Handbook).
- ✓ Contact a local tree service and see if you arrange to have the den watch a crew "in action".
- ✓ Plant saplings in the spring as a conservation project.
- ✓ Make a tree exhibit "from roots to fruit: for a pack meeting.
- ✓ Make a tree identification kit for your den from strips of bark, leaves or needles and cones or seeds.

- ✓ Plant a tree.
- ✓ Find a tree stump or log section and count the annular rings. As you study them, can you tell what years were poor ones for growth, perhaps because of drought?



Ceremonies

Suggested Props: Leaf (real or made from paper, cardboard or cloth).

Presentation: Present boy with leaf award at the beginning of the meeting.

Skits

The Trees

- ✓ All the boys except one lined up in a row facing the audience, spaced at least three feet apart.
- ✓ The remaining boy is the narrator.
- ✓ An adult "volunteer" is selected; usually this is the Cubmaster.
- ✓ He/ She is instructed to stand off to the side until he hears the word spring. That is his cue to start running between the trees for a few minutes.
- ✓ The audience is first told the boys are trees during the summer.
- ✓ Their Branches are strong and sturdy, and they are full of leaves providing shade to the forest animals.
- ✓ While the narrator is talking, the "trees" raise their arms and mime what the narrator is saying.
- ✓ Next the audience is told about a tree in the fall and how it begins to lose its leaves. The "trees" should begin to sag their branches.
- ✓ Next the audience is told about a tree in the winter time and how the wind howls through their bare limbs. Someone can supply the sound effects if you desire, and the boys should be moving like their is a large gust of wind pushing them around.
- ✓ Finally, on cue as you say the word spring, have the volunteer move quickly between the trees several times.
- ✓ You will finish the skit by saying "..... And also in the
- ✓ springtime, notice how quickly the sap runs through the trees."
- ✓ This skit can be as long or as short as you want to make it. As each season is discussed in as much detail as you want.
- ✓ The trees should be mimicking what the narrator is saying. Make sure the narrator places emphasis on the word Sap, so the audience reacts quickly to the gag.

Games

Tree Trivia

See if you can guess what kind of tree it is with the clues provided.

1. This tree comes in twos (Pear)
2. This tree is nearest the sea (Beech)
3. This tree is a romantic evening for 2 (Date)
4. This tree keeps you warm (Fir)
5. This tree was an Egyptian plague (Locust)

6. The tree we offer when we shake hands(Palm)
7. This tree is used in kissing (tulip)
8. This tree is always crying (Weeping Willow)
9. This tree is a Colorado ski slope (Aspen)

Tree Products

Match the products on the left to the appropriate tree on the right.

- | | |
|------------------------------------|-----------------|
| 1. baseball bats, tool handles | a. redwood |
| 2. furniture, lumber, barrels | b. black walnut |
| 3. paper, soft lumber (derby cars) | c. pines |
| 4. gunstocks, cabinets | d. maples |
| 5. bowling alley lanes | e. ashes |
| 6. lumber for outdoor decks | f. oaks |

Crafts

Dry Leaf Collection

Put each leaf between a separate sheets of newspaper.

Put several folds of newspaper on top of and underneath the sheets you are using to press the leaves.

Put something heavy on top until the leaves are presses out and dry.

Crayon Print

Lay a leaf on the table with vein side up.

Put a clean sheet of paper on top of it.

Hold the leaf in place with your hand and make parallel strokes back and forth over the leaf with your crayon until the print shows on your paper.

Ink Pad Leaf Prints

Put a leaf, vein side down, on your ink pad.

Cover it with a piece of newspaper and rub your hand back and forth over it.

Then put the leaf, ink side down, on a clean sheet of paper. Put a newspaper over it again and rub.

Paraffin Coated Leaves

Melt paraffin in a double boiler.

When it is melted, turn off the heat.

Dip one leaf at a time into the melted wax.

Shake off the extra drops of wax into the pan.

Hold the leaf until the wax hardens, then lay it on waxed paper.

Using this method, you can get the leaves in their green color, or in the brilliant colors of autumn.

Activities

Forester -- Sung to "Rock-a-Bye Baby"

Out in the forest, under the trees,

See the Scouts trekking, finding species,

This tree is familiar, this one is not,

Don't touch that ivy, or you'll get some spots.

The trees are both useful, To wildlife and birds,

They give them a home and, food for the herd.

Santa Clara County Council

Bark Rubbing

Needed -

- A tree,
- A piece of construction paper,
- A piece of screening 7-1/2" by 12-1/2",
- Masking tape, and
- A crayon.

Directions

1. Find an interesting patch of bark, and tape the construction paper over it.
2. Holding the crayon flat side against the tree, rub up and down over the paper, pressing firmly. Keep coloring until you get an interesting pattern.
3. Remove the tape and inspect your bark rubbing. Try different trees, and look at the different patterns you get.

Activities:

1. **Hug A Tree** - When out on a hike, pair the boys and have one blindfold the other. The blindfolded boy is led to a tree and allowed to feel the tree for a minute or two so he will be able to later identify it. Once he is led back to the starting point, the blindfold is removed and he is free to find his tree. After identification takes place, the boys reverse roles.
2. **Match The Pairs** - Once a few trees have been identified, collect a leaf and a small branch from these trees (make sure you have permission to do this). Give the boys the opportunity to study the matched pairs and then mix them to see if they can match the limb with the leaf.
3. **Measuring The Tree** - It is important for a forester to know how big trees are so they know how much wood they contain and how much room it takes to drop them. Two instruments are needed for these measurements. This could be a den activity before going to the field. A piece of ribbon that has marks every 3.14 inches and numbered consecutively. When wrapped around a tree (done at 4 feet above the ground) it will tell the diameter of the tree. A regular tape measure will work, divide by 3.14. The other important tool a forester uses is called a cruising stick. The cruising stick is marked every 6.15 inches. Standing 66 feet away from the base of the tree, hold the stick 25 inches from your face and align the end of the stick with the bottom of the tree and see where the top of the tree falls on the cruising stick. Each 6.15 inch mark equals 16 feet. If the tree falls half way between the first and second mark, then the tree is about 24 feet tall.
4. **Leaf Hunt** - There are many terms for identifying trees - lobed, toothed, simple, alternating, etc. List the terms on a sheet of paper and have the boys scour the woods for samples of these different terms.
5. **Leaf Collection** - The leaf hunt activity can lead to an interesting collection for the boys. Leaves can be preserved in many ways. They can be placed in a book to be pressed and dried. A simple leaf press can be built out of two pieces of plywood with bolts and wing nuts. Cardboard or heavy paper should be placed between the leaves.
6. **Trace A Leaf** - Using a flat hard surface, like a clipboard, to place a piece of paper. Place the leaf under the paper and rub a crayon over the leaf. Hold the paper against the trunk of a tree to make an impression of the bark.
7. **Report** - Have each den member choose a different tree found in your area and write a short report. Sample of leaves, seeds, and bark rubbings could be included. Tell the boys they should include any uses the tree has, where the tree can be found besides here, how big the tree normally grows and any other information they would like to include.
8. **Field Trip** - Arrange a trip to a lumberyard or sawmill. This can be very informative. The boys should learn about different woods and their uses, how wood is processed, and possibly about the different characteristics of wood. Commercially available wood can be divided into two main classifications: Hard and

Soft. This can be confusing to the boys because these terms when used this way, do not mean the relative hardness or softness of the wood. Hardwoods come from deciduous trees (broadleaf) and softwoods come from conifers (evergreens). Balsa wood, which most boys are familiar with is a hardwood but is very soft and light. Yellow pine is a softwood, but is very hard and heavy.

JUNIOR FOREST RANGER QUIZ

1. Campfire permits are required for: (a) indoor fireplaces; (b) outdoors areas depending on local laws; or (c) lighting Halloween pumpkins.
2. The safest way to start a campfire is with: (a) a pile of leaves; (b) gasoline; or (c) small pieces of kindling wood.
3. The best place to ask where forest campfires can be built is: (a) sheriff's office; (b) sporting goods store; or (c) ranger or fire warden stations.
4. When staying overnight in the forest, before going to bed you should: (a) place heavy logs on the fire; (b) put out your campfire; or (c) arrange to get up every 2 Hours to check the fire.
5. When you see a bear in the forest, parks or zoo, you should: (a) pull his fur, (b) chase him with a stick; or (c) stay away from him. Do not feed or pet him. Bears are wild animals and considered dangerous at all times.
6. To cook properly over a campfire, you should: (a) cook over the flames of a large fire (b) build a small fire and cook over the hot embers; or (c) burn a lot of paper to make the fire hot.
7. The best way to put out a campfire is: (a) inside a rotten log or stump; (b) under a green tree; or (c) in a clear open space away from trees.
8. For camping or burning trash, the following is the most important and practical tool to carry in a car. (a) shovel; (b) bucket of water or (c) wet blanket.
9. If a fire gets out of hand, you should: (a) get your parents and run to your car and drive away; (b) report it immediately to a forest ranger; or (c) get other Jr. Forest Rangers to come fight the fire.
10. If your clothes happen to catch on fire you should: (a) keep calm, do not run, roll a blanket around you to smother flames (if no blanket is handy. just lay down on the ground and roll to smother the flames); (b) run for help; or (c) jump up and down really fast.
11. Camp matches should be: (a) kept in a metal container, (b) stored near outboard motor fuel; or (c) placed in the hot sun.
12. The safest way for an adult to light A cigarette is: (a) use a cigarette lighter (b) strike match on a nearby rock; or (c) use paper book matches and throw into grass when finished.
13. A person who is careless and starts a forest fire: (a) is made honorary fire chief; (b) receives a fire prevention award; or (c) can be fined and sent to jail.
14. Well-managed forests give us: (a) Smoky Bear; (b) wood, water, wildlife, grass and outdoor fun; or (c) just lumber, paper, and walnuts.
15. A match or cigarette thrown from a car window: (a) is permissible if no one is looking; (b) is permissible if it looks like it has gone out; or (c) is never safe.
16. A windy day is a good time: (a) to burn trash; (b) to start a campfire; or (c) not to start a fire.
17. A trash burning incinerator should be: (a) well equipped with a good spark arrester; (b) placed under a tree for shade; or (c) used only on windy days.
18. Before lighting an open fire: (a) people should leave the neighborhood; (b) local fire laws should be checked and obeyed; or (c) help prevent forest fires.
19. Junior Forest Rangers: (a) put out forest fires; (b) start forest fires; or (c) help prevent forest fires.

Answers to Jr. Forest Ranger Quiz:

1. b 4. b 7. a 10. a 13. c 16. c 19. c

2. c 5. c 8. a 11. a 14. b 17. a
 3. c 6. b 9. b 12. a 15. c 18. b

17 - 19 correct - Official Jr. Forest Ranger
 12 - 16 correct - Jr. Forest Ranger
 8 - 11 correct - Jr. Ranger in Training
 0 - 7 correct - need to study some more

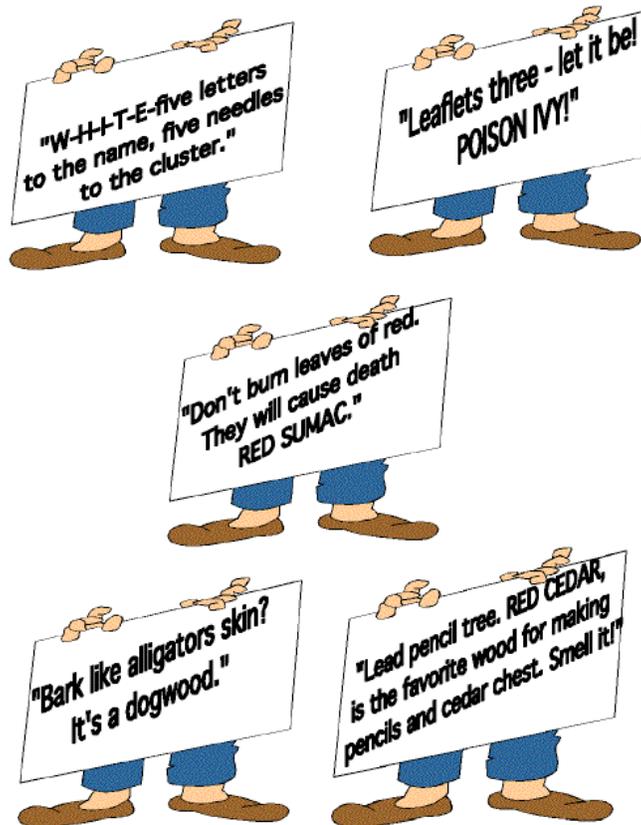


Find a smooth-cut stump or log end, and look closely at the pattern of growth rings. There is a layer of wood for each year of growth. Some tree kinds will show light spring wood and dark summer wood in year's growth. Count annual rings low on the trunk to find the tree's approximate age.



1. Drought years cause occasional narrow growth rings.
2. Crowding causes zones of narrow rings.
3. A leaning tree has rings narrower on one side than the other. A tree on a leaning edge may have similar uneven rings.

Look for branches deep within the wood-also for insect and disease damage. What kind of life has your tree had?



NATURE TRAIL

A nature trail is an excellent learning device much better than books- because scouts can see, smell, and touch an object while they learn. Assuming that you will use it just for one weekend, the markers might be simply 3 x 5 cards taped to the object. Ask a leader who is an amateur naturalist or a nature merit badge counselor to choose the objects to be marked along the trail.

It is not necessary to identify every tree, plant and rock in the area. Your primary purpose should be to identify the most common objects of the natural community and to point to other things in the natural world.

For example, you might have a marker where deer have grazed vegetation, where a beaver has been at work, or where lichens have found a toehold in rock. Another might be a fallen rotting tree, which is a feeding and nesting ground for insects and reptiles.

Here are suggestions for writing trail signs. Write them on the spot because desk-written signs are apt to be formal. Here is an example of a good label:

After going over your trail, the Scout should have some knowledge of common trees and plants. Be sure to remove the trail signs at the end of the activity unless it is to become a permanent nature trail.

Arrange could be made with the Council office to have a day event at one of the Boy Scout Camp available in your area.

TOUCH AND FEEL HIKE

Find a leaf. Is it Hairy or smooth? _____
Do you know what kind of leaf you found? Name it

Find a rock. Is it rough or smooth? _____
Find something dry. Can you explain why it is dry?

Where did you find your dry item? _____

Find something bumpy. What is it? _____

Why do you think it is bumpy? _____

Find something that is cool to the touch. What did you find?

Find something that is warm to the touch. What did you find?

Feel the air around you. Is it warm or cool? _____

What do you like best that you found on your hike?

NATURE SCAVENGER HUNT

Check off each as you find or complete it.

_____ Can you find an Ant hill? (Don't touch it)

_____ Can you find any wildflowers?

_____ Find the following insects

CRICKET _____

GRASSHOPPER _____

BEE _____

SPIDER _____

_____ Find the following animal homes

- BIRD NEST _____
- COCOON _____
- SPIDER WEB _____

_____ Locate an animal track.

- What kind of animal do you think it is?

Find the following trees

- MESQUITE _____

(Can you tell this list came from Texas?? Be sure to list trees that grow in your area!! CD)

- OAK _____
- MAPLE _____
- TULIP _____

_____ Find the following colors on a bird

- BLACK _____
- WHITE _____
- RED _____
- BROWN _____
- BLUE _____

_____ Find a butterfly

Sensory Bingo

Play this game while discovering the out-of-doors. As you complete each activity, cross out that square. Can you cross out five squares in a row? More than one row of five squares? The example given can be revised to meet the characteristics of the area you're in, the time of the year, etc. *GOAL:* To help boys explore the natural world using all their senses.

Find a tree that has changed to something else	Find a nest and two insects	Smell pine needles	FREE SPACE	Find an animal track
FREE SPACE	Find an ant	Collect seeds from a tree, plant some	Find a bird feather	Name 3 things a tree needs in order to grow
Find a fossil	Estimate the height and circumference of a tree taller than you	FREE SPACE	Touch moss	Find a place where erosion is going on
Do something to help a tree	Find examples of evidence of pollution	Find a frog but leave him with his mother	Find the youngest tree and the oldest tree	FREE SPACE
Examine tree scars to find a sign that the tree was injured	FREE SPACE	Pick up one piece of litter	Identify a wild flower	Find a tree shaped by nature