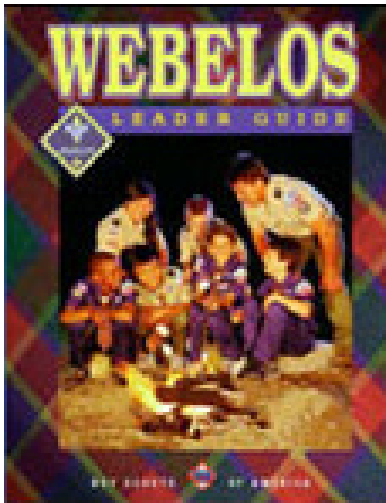
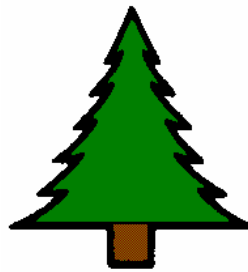


Webelos Activity Badge

Forester

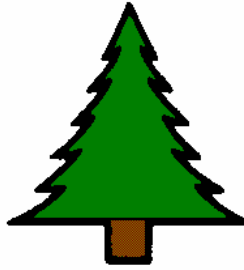


Prepared By:

Rich Smith

Cubmaster Pack 133

August, 2003



Forester

Do five of these:

1. Make a map of the United States. Show the types of forests growing in different parts of the country. Name some kinds of trees that grow in these forests.
2. Draw a picture to show the plant and tree layers of a forest in your area. Label the different layers. (If you don't live in an area that has forests, choose an area that does and draw a picture of that forest.)
3. Identify six forest trees common to the area where you live. Tell how both wildlife and humans use them. (If you don't live in a region that has forests, read about one type of forest and name six of its trees and their uses.)
4. Identify six forest plants (other than trees) that are useful to wildlife. Tell which animals use them and for what purposes.
5. Draw a picture showing:
 - How water and minerals in the soil help a tree grow
 - How the tree uses sunlight to help it grow
6. Make a poster showing a tree's growth rings or examine the growth rings of a tree stump. Explain how the rings tell its life history
7. Collect pieces of three kinds of wood used for building houses. Tell what kinds of wood they are and one place each of them might be used
8. Plant 20 forest tree seedlings. Tell how you planted them and what you did to take care of them after planting.
9. Describe both the benefits and the harm wildfires can cause in a forest ecosystem. Tell how you can prevent wildfire.
10. Draw your own urban forestry plan for adding trees to a street, yard, or park near your home. Show what types of trees you would like to see planted.

Forester Signoff

Requirements							
Do five of these requirements:							
1. Map of the United States forests.							
2. Draw the plant and tree layers of a forest.							
3. Identify six forest trees common to your area.							
4. Identify six forest plants (other than trees) that are useful to wildlife.							
5. Draw a picture showing how a tree uses water and minerals in the soil and sunshine to grow.							
6. Make a poster showing a tree's growth rings.							
7. Collect pieces of three kinds of wood used for building houses.							
8. Plant 20 forest tree seedlings.							
9. Describe both the benefits and the harm of wildfires.							
10. Draw your own urban forestry plan for the area near your home.							

Forester Activity Badge

1. Premeeting – Forester Word Search *(Handout)*
2. Introduction
 - a. Background Information
3. Forests of the USA p 331 *(Requirement 1)*
 - a. Map Handout *(Handout)*
 - b. Types of Wood Used for Building *(Display Pieces)*
4. How a Tree Grows p 338-9 *(Requirement 5)*
 - a. Growth Handout *(Handout)*
 - b. Draw a Picture of How a Tree Grows *(Handout)*
5. The Inside Story of a Tree p 340 *(Requirement 6)*
 - a. Draw a Picture of a Leaf *(Handout)*
6. Hike
 - a. Forest Structure *(Requirement 2)*
 - b. Identifying Trees p 345 *(Requirement 3)*
 - c. Identifying Forest Plants p 347 *(Requirement 4)*
 - d. Erosion
7. Game – Tree Quiz Contest *(Handout)*
8. Fire in the Forest p 342 *(Requirement 9)*
 - a. Discussion *(Handout)*
9. Hidden Tree Game *(Handout)*

Rich Smith
8/12/2003

Introduction to the Forester Activity Badge

What is a Forester?

A forester deals with the care and growing of trees, and a Webelos Scout working on his Forester Activity Badge will learn how to recognize different species of trees by their shape, foliage, bark and types of wood, as well as animals who live and grow there.

A forester must learn how to do a great variety of things as well as know many facts about trees. Some of his tasks are making tree inventories, estimating the lumber content in standing timber, surveying, logging, tree planting, insect control, recreational planning, and the mapping and marking of trees for harvesting. He is interested in woodlands conservation and learns how to preserve and protect them from fire and disease. A forester must have excellent health and a love of the outdoors.

Why are Trees Important?

America is a land of trees. They grow almost everywhere in our country. We sometimes forget, though, just how important trees are in our lives. Thousands of products come from trees...our wooden houses and the furniture in them, the rayon clothing we wear, the film in our camera, and many of the fruits we eat. Ash and hickory are used in the manufacture of baseball bats and other sporting equipment. Lumbering is a major industry in many of the countries of the world. The one very important value is the aesthetic. Think what beauty we would be missing if there were no trees. Our world wouldn't be nearly so interesting.

Did You Know These Facts About Trees?

- Almost one-third of the earth's total land area is covered by forest.
- The tallest redwood ever measured was 367 feet tall. That's 62 feet taller than the Statue of Liberty.
- There are about 25,000 different types of trees in the world, not counting subspecies.
- Every year in the United States, each person uses enough tree products to make a tree about 11 feet tall and 16 inches in diameter.
- Between 1950 and 1980, the forested area of the earth was reduced by 25%.
- Before plastic bags, an average American family consumed about 500 paper bags per year.
- 700 paper shopping bags consume a twenty year old tree.
- A typical super market consumes 36,000 shopping bags per week. If they were all paper bags, this would use 2,600 trees per year for every super market, or 28 million trees per year.
- Nearly 50% of the solid waste in landfills comes from paper and plastic waste.
- The bark of a tree can be very thin or very thick. The bark of the birch tree may be only 1/4" thick, while the bark of the giant sequoia can be as thick as 2 feet.
- The slippery elm was "responsible" for the spitball. The spitball was a tricky pitch thrown by baseball pitchers in the days that Babe Ruth played. Pitchers would chew slippery elm seeds, then rub the liquid onto the baseball. The resulting pitch was very hard to hit.
- A large leafy tree may take up as much as a ton of water from the soil each day.

Forester Word Search

Directions

Find the words in the puzzle that are listed below.

The words are horizontal, vertical, and diagonal, forwards and backwards.

All of the words are associated with the Forester Activity Badge!

Put the unused letters in the boxes to find a hidden message!

C D D E C O M P O S I T I O N S O N
 S O C E F T D I R T R V M R E I R C
 O O H F O R E S T R E G I O N S E A
 W W L U R E R T R U E R N O U E Y R
 I T O S E E D L I N G O E L N H A B
 L R R O S S E S E K D W R F D T L O
 D A O I T W S Q C A F T A T E N B N
 F E P L E O H U A G F H L S R Y U D
 I H H C R O W N N P E R S E S S R I
 R W Y Z I D K E O L R I L R T O H O
 E A L A C S G K P A I N R O O T S X
 S T L C H Y R A Y N C G S F R O D I
 F E G H X A D E N T I S H N Y H M D
 Z R X O B C E R O S I O N T V P B E

H I D D E N M E S S A G E

!

- | | | |
|----------------|----------------|-------------|
| BARK | FOREST REGIONS | SEEDLING |
| CANOPY | GROWTH RINGS | SHRUB LAYER |
| CARBON DIOXIDE | HEARTWOOD | SOIL |
| CHLOROPHYLL | LEAF | TRUNK |
| CROWN | MINERALS | TREES |
| DECOMPOSITION | OXYGEN | UNDERSTORY |
| DIRT | PHOTOSYNTHESIS | SUNLIGHT |
| EROSION | PLANTS | WATER |
| FORESTER | ROOTS | WOODS |
| FOREST FLOOR | | WILDFIRES |

R. P. Smith
8/18/03

Forester Word Search

Directions

Find the words in the puzzle that are listed below.

The words are horizontal, vertical, and diagonal, forwards and backwards.

All of the words are associated with the Forester Activity Badge!

Put the unused letters in the boxes to find a hidden message!

C	D	D	E	C	O	M	P	O	S	I	T	I	O	N	S	O	N
S	O	C	E	F	T	D	I	R	T	R	V	M	R	E	I	R	C
O	O	H	F	O	R	E	S	T	R	E	G	I	O	N	S	E	A
W	W	L	U	R	E	R	T	R	U	E	R	N	O	U	E	Y	R
I	T	O	S	E	E	D	L	I	N	G	O	E	L	N	H	A	B
L	R	R	O	S	S	E	S	E	K	W	R	F	D	T	L	O	
D	A	O	I	T	W	S	C	A	T	A	T	E	N	B	N		
F	E	P	L	E	O	U	A	F	H	L	S	R	Y	U	D		
I	H	H	C	R	O	W	N	N	P	R	S	E	S	S	R	I	
R	W	Y			D	E	O	L	I	R	T	O	H	O			
E	A	L			S	G	K	P	A	I	N	R	O	O	T	S	X
S	T	L			Y	R	Y	N	G	F	R	O	I				
	E		X	A				T	S	H	Y	H	D				
	R		O	B		E	R	O	S	I	O	N	T	P	E		

H I D D E N M E S S A G E

C O N S E R V E O U R T R E E S !

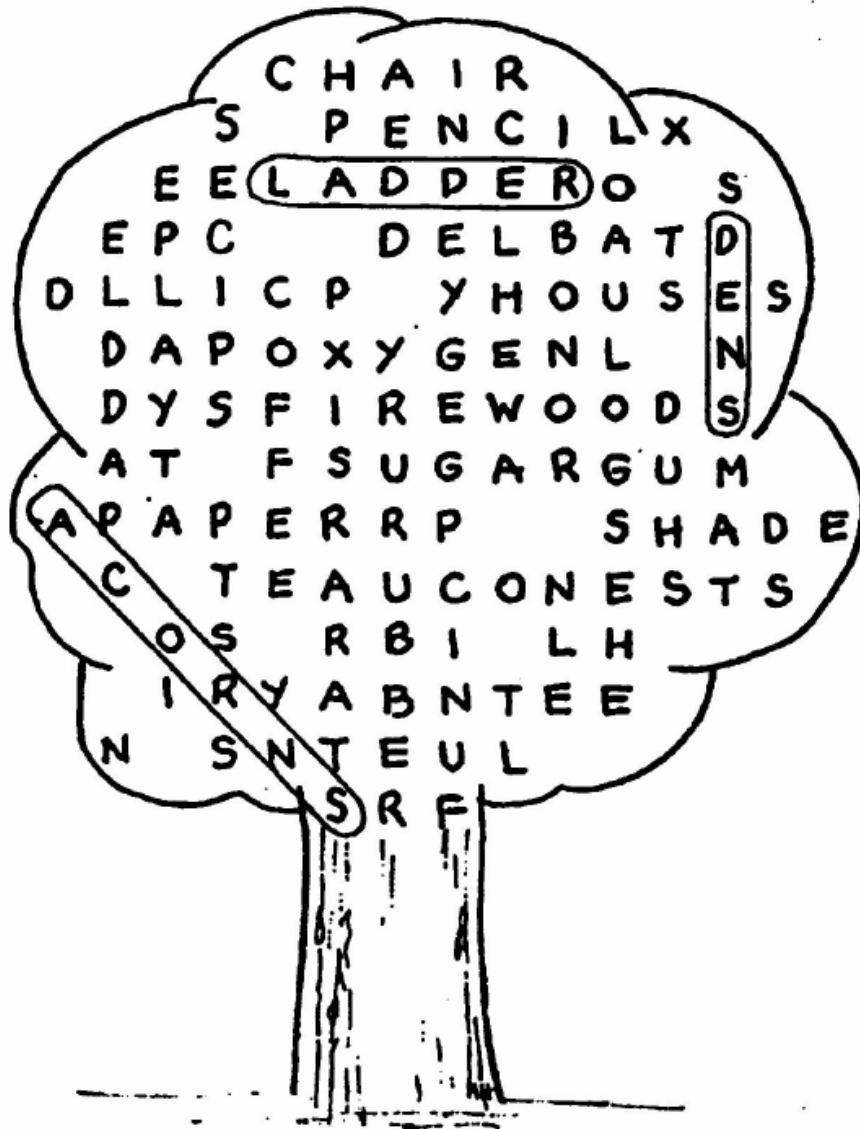
BARK
CANOPY
CARBON DIOXIDE
CHLOROPHYLL
CROWN
DECOMPOSITION
DIRT
EROSION
FORESTER
FOREST FLOOR

FOREST REGIONS
GROWTH RINGS
HEARTWOOD
LEAF
MINERALS
OXYGEN
PHOTOSYNTHESIS
PLANTS
ROOTS

SEEDLING
SHRUB LAYER
SOIL
TRUNK
TREES
UNDERSTORY
SUNLIGHT
WATER
WOODS
WILDFIRES

R. P. Smith
8/18/03

Tree Word Find



We get many things from trees. Find and circle these 35 words in the tree above. The words are horizontal, vertical, and diagonal, forwards and backwards.

ACORNS
BAT
BOX
CHAIR
COFFEE
CONES
DYE
FIREWOOD
FRUIT

FUN
GUM
HOUSES
LADDER
LOGS
NESTS
NUTS
OXYGEN
PADDLE

PAPER
PENCIL
PLAY
POLE
POST
RESIN
RUBBER
SEED
SHADE

SHELF
SPICES
SUGAR
SYRUP
TABLE
TEA
TAR
WOOD

Take Me Out To The Forest

Tune: Take Me Out to the Ball Game

Take me out to the forest.

Let me hike in the wild.

Show me a skunk and a few bear tracks.

I won't care if I never come back.

But it's look, look, at your compass.

If it rains, then it pours.

And it's ouch, slap, sting and you're bit

In the great outdoors!

Tree Quiz Contest:

Sam Houston Area Council

Call out these questions in front of the group and have fun with the answers.

1. What tree is the opposite of me? _____
2. What is a double tree? _____
3. What tree is nearest to the ocean? _____
4. What is the calendar tree? _____
5. What is the Egyptian plague tree? _____
6. What tree do we offer friends when you meet them on the street? _____
7. What tree is used in kissing? _____
8. What tree is used in a bottle? _____
9. What tree is still there, even after you burn it up? _____
10. What tree is longing to see you? _____
11. What tree probably tastes really bad? _____
12. What tree keeps mammals warm? _____
13. What tree do you have two of on your bed? _____
14. What tree do you chew? _____

Tree Quiz Contest:

Sam Houston Area Council

Call out these questions in front of the group and have fun with the answers.

1. What tree is the opposite of me? yew
2. What is a double tree? pear
3. What tree is nearest to the ocean? beech
4. What is the calendar tree? date
5. What is the Egyptian plague tree? locust
6. What tree do we offer friends when you meet them on the street? palm
7. What tree is used in kissing? tulip
8. What tree is used in a bottle? cork
9. What tree is still there, even after you burn it up? ash
10. What tree is longing to see you? pine
11. What tree probably tastes really bad? yucca
12. What tree keeps mammals warm? fir
13. What tree do you have two of on your bed? tupelo
14. What tree do you chew? gum, or sweet gum

Hidden Trees Game

The sentences below contain hidden tree names. The names are spelled out correctly but may be inside another word or they may be split between two or more words.

1. The ranger's map led us safely through the woods.
2. Will owls hoot in daylight if they see someone in the forest?
3. It's fun to tramp in every direction before enjoying a picnic in the woods.
4. Forest rangers wear white helmets.
5. In a beautiful glade, we saw a honey bee checking clover blossoms for honey.
6. Many forest fires are caused by human carelessness, according to rangers.
7. Woodcutters have expensive tools, and keep them locked in sheds.
8. Don't plant those seedlings so thick or you won't give them room to grow.
9. We got soaked when we were caught in a spring cloudburst.
10. Our grandson's face darkened when we told him it was time to go home.
11. Our lollipop larder is raided when children come to call.
12. We all chased him as he ran down the hill.

Hidden Trees Game

The sentences below contain hidden tree names. The names are spelled out correctly but may be inside another word or they may be split between two or more words.

1. The ranger's **map** led us safely through the woods.
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11. Our lollipop **larder** is raided when children come to call.
12. We all chased him **as** he ran down the hill.

Answers:

- | | | |
|-----------|------------|------------|
| 1. maple | 5. beech | 9. oak |
| 2. willow | 6. fir | 10. cedar |
| 3. pine | 7. hemlock | 11. poplar |
| 4. elm | 8. hickory | 12. ash |

What Important Things Come From Trees?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

What Important Things Come From Trees?

1. Homes for animals
2. Give off oxygen
3. Prevents water erosion
4. Firewood
5. Paper
6. Lumber
7. Furniture, boards, shelves
8. Reduce carbon dioxide
9. Baseball bats
10. Birdhouses
11. Desks
12. Pencils
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

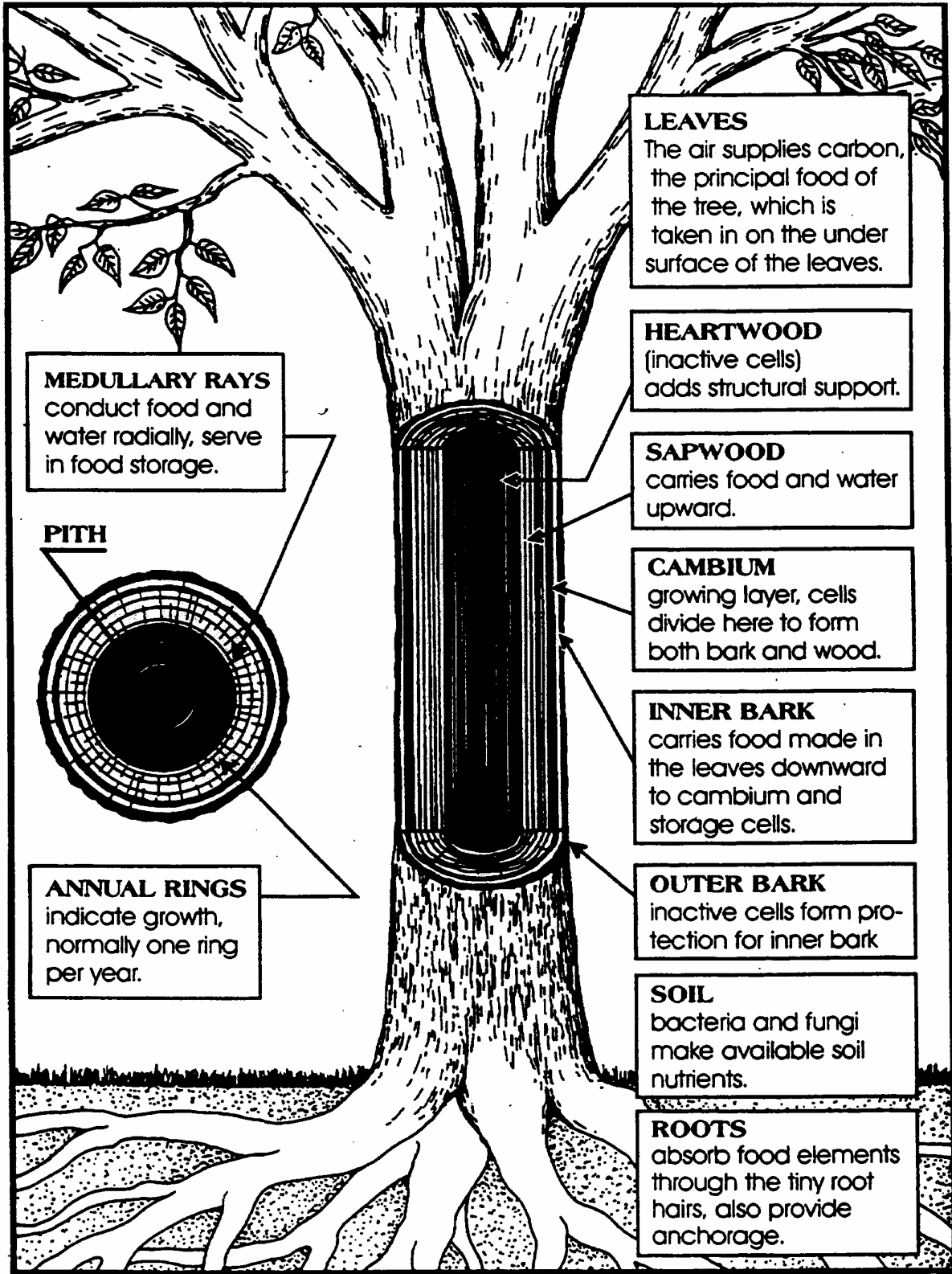


DIAGRAM SHOWING FUNCTIONS OF DIFFERENT PARTS OF A TREE

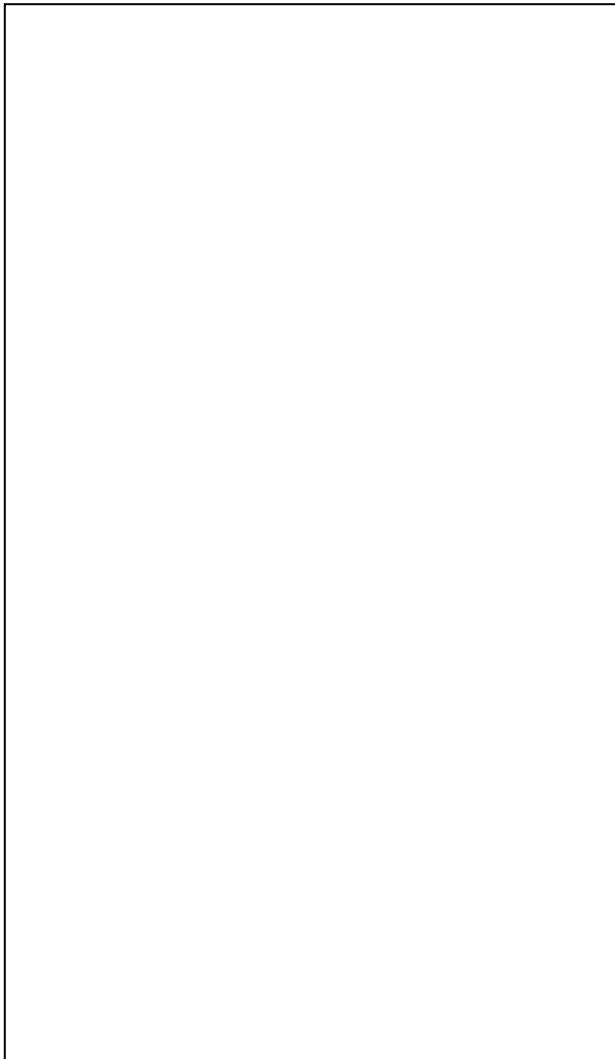
Courtesy of the *New Tree Experts Manual* by Richard R. Fenska

How Does a Tree Grow?

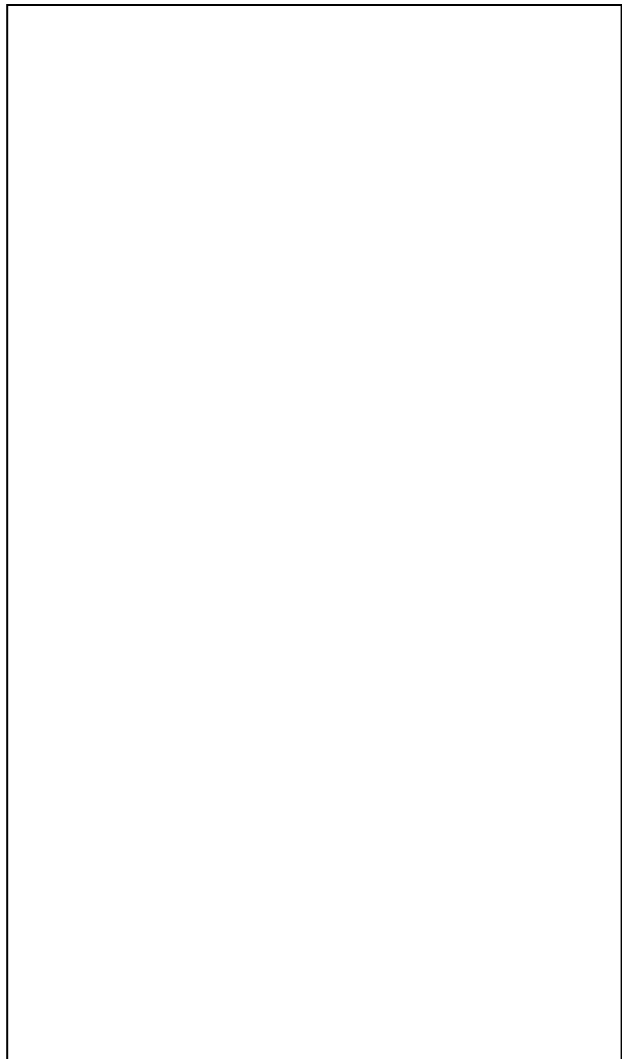
Draw a picture that shows how water and minerals in the soil help a tree to grow.

Include the following parts of a tree:

- | | | | |
|----------|---------------|------------|--------------|
| 1. Crown | 3. Outer Bark | 5. Cambium | 7. Heartwood |
| 2. Trunk | 4. Inner Bark | 6. Sapwood | 8. Roots |



Draw a picture of a tree showing the crown, trunk and roots.



Draw a picture that shows how water and minerals in the soil travel in the trunk of a tree.

How Does a Tree Make Food?

Draw a picture that shows how a tree uses sunlight and air to help it grow.

Include the following parts of the process:

- | | | | |
|-------------------|-------------|-------------|----------|
| 1. Carbon Dioxide | 3. Leaf | 5. Moisture | 7. Sun |
| 2. Chlorophyll | 4. Minerals | 6. Oxygen | 8. Water |



Draw a picture of a leaf that shows how a tree uses photosynthesis to make its food.

Identify Six Different Trees

1. Tree # 1
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape
2. Tree # 2
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape
3. Tree # 3
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape
4. Tree # 4
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape
5. Tree # 5
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape
6. Tree # 6
 - a. Bark
 - b. Leaves/ Needles
 - c. Fruit
 - d. Size, Shape

Identify Six Different Forest Plants

1. Plant # 1
a. Color _____
b. Leaves _____
c. Fruit _____
2. Plant # 2
a. Color _____
b. Leaves _____
c. Fruit _____
3. Plant # 3
a. Color _____
b. Leaves _____
c. Fruit _____
4. Plant # 4
a. Color _____
b. Leaves _____
c. Fruit _____
5. Plant # 5
a. Color _____
b. Leaves _____
c. Fruit _____
6. Plant # 6
a. Color _____
b. Leaves _____
c. Fruit _____

The Damage Caused by a Wildfire

1. **Vegetation** – The trees and other plants can be completely destroyed by the fire. They can also be burnt, but not die. This is like a person getting 2nd or 3rd degree burns. Burnt trees are susceptible to attacks by insects and disease, which may cause them to die later. This is similar to a person who is burnt by fire and dies from pneumonia because of his weakened condition.
2. **Wildlife** – Animals can be destroyed by being burned to death, or they may be severely injured by the fire. Their shelter (homes) may be destroyed. Their food may also be destroyed. They must then move to another area in search of food and shelter.
3. **Soil** – The floor of a forest is not made up of “dirt”. It is a layer of organic material called *topsoil*, like the covering in your yard. This organic material consists of leaves and twigs that have fallen off of the trees over the years as well as grass and other low growing plants. This covering of the mineral soil is burned away by the fire, exposing the bare mineral soil. Rains that occur after the fire fall on the bare soil and create erosion. The rain carries the soil down hill and into the streams and rivers. The topsoil that is lost is rich in the nutrients needed by trees and plants to grow.
4. **Air** – Smoke and fine particles are carried up into the air and cause air pollution. This pollution can be carried hundreds of miles from the fire by the prevailing winds. Smoke from a large fire in Virginia in 1992 caused some people in Washington, DC to be hospitalized for breathing difficulties.

How Can You Prevent Forest Fires?

1. Practice Camp Fire Safety

- a. Don't play with fire – matches, logs burning in a fire, or holding a stick in a fire.
- b. Clear an area around the fire – it should be free of things that can burn, like organic matter.
- c. Make a fire circle out of rocks – Check with an adult about the kind of rocks that you can use, because some rocks can explode when heated.
- d. Have water near the fire.
- e. Have tools like a shovel and a rake nearby to put out any fire that escapes the fire circle.
- f. Never leave a fire unattended.
- g. Put out the fire **completely** before leaving the area. This means that there should not be any red coals left.

2. Report fires

- a. If you discover a fire when it is very small (about half the size of your bedroom) and if you have enough people (at least two adults) and have the proper tools, you can try to put out the fire. You should also send someone for help while you attempt to fight the fire.
- b. If the fire is as large or larger than your bedroom, or if you do not have enough people and tools, **go for help**. Fires are very dangerous and should generally be fought by trained firefighters.
- c. Remember – ***Safety First – Always!***

Describe The Harm Caused By A Wildfire

1. Vegetation (Trees and Plants)

2. Wildlife

3. Soil

4. Water

5. Air

How Can You Prevent Forest Fires

1. Campfire Safety

2. Report Fires

3. Other Ways

Forests of the United States

Draw the types of forests growing in different parts of the country.

