

**Please come back to  
the Overland Park Arboretum  
& Botanical Gardens!**

- ✓ Visit the new Train Garden.
- ✓ Hike some of the woodland trails with a stop at the Bird Watch.
- ✓ Spot the birds, butterflies and other animals that live in the gardens.
- ✓ Investigate the 8 ecosystems here.
- ✓ Draw or photograph the things you see.

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Friends of the Arboretum Education Committee

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**Thanks to:**

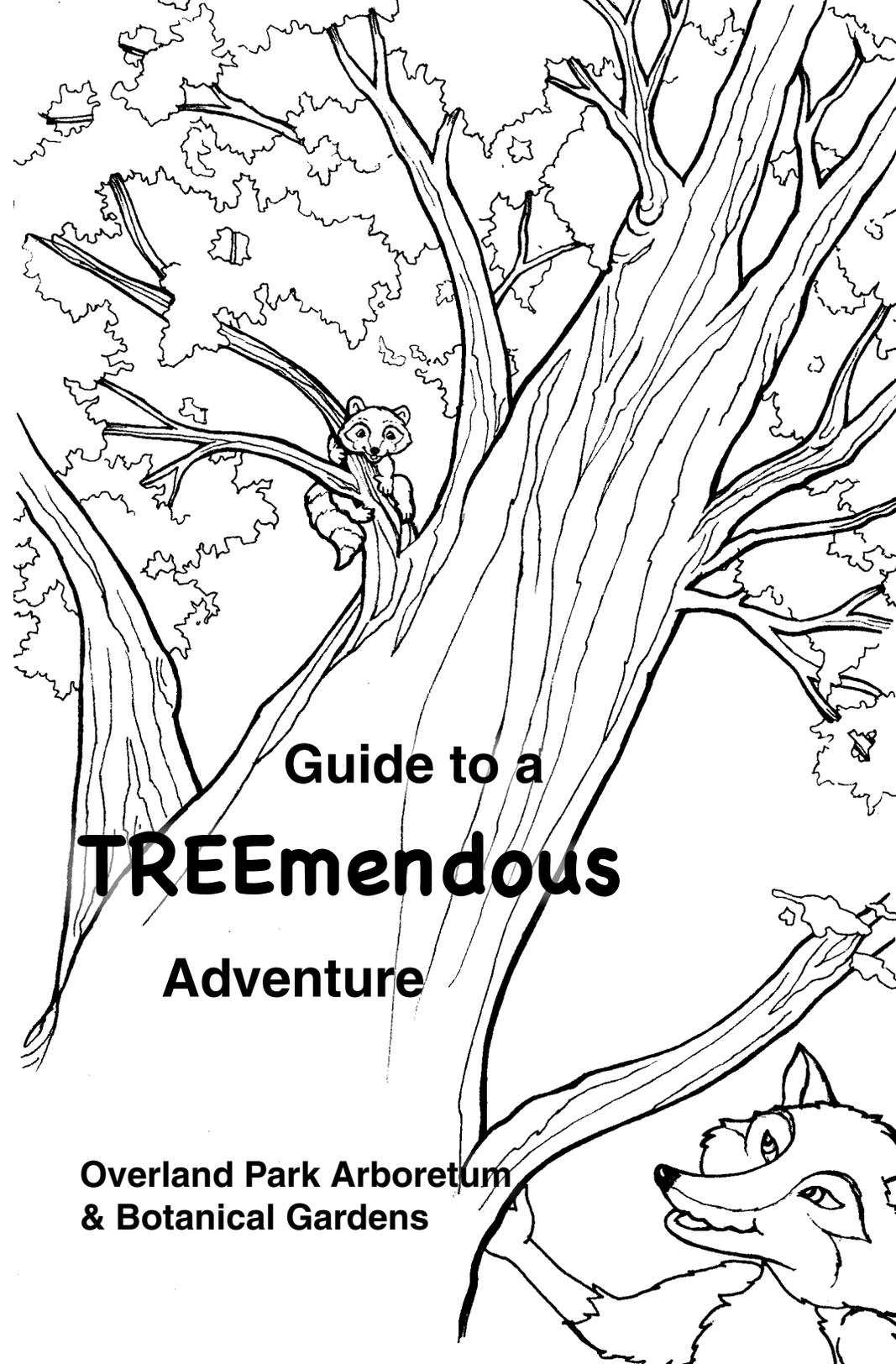
The Jacob Loose Memorial Park,  
Stanley R. McLane Arboretum, Kansas City, MO  
Forest the Fox Courtesy of the Legacy of Greenery Committee

**Overland Park Arboretum  
& Botanical Gardens**

1/2 mile West of 69 Highway at 179th & Antioch  
913-685-3604 • www.opabg.org

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*"When one tugs at a single thing in nature,  
he finds it attached to the rest of the world."  
John Muir*

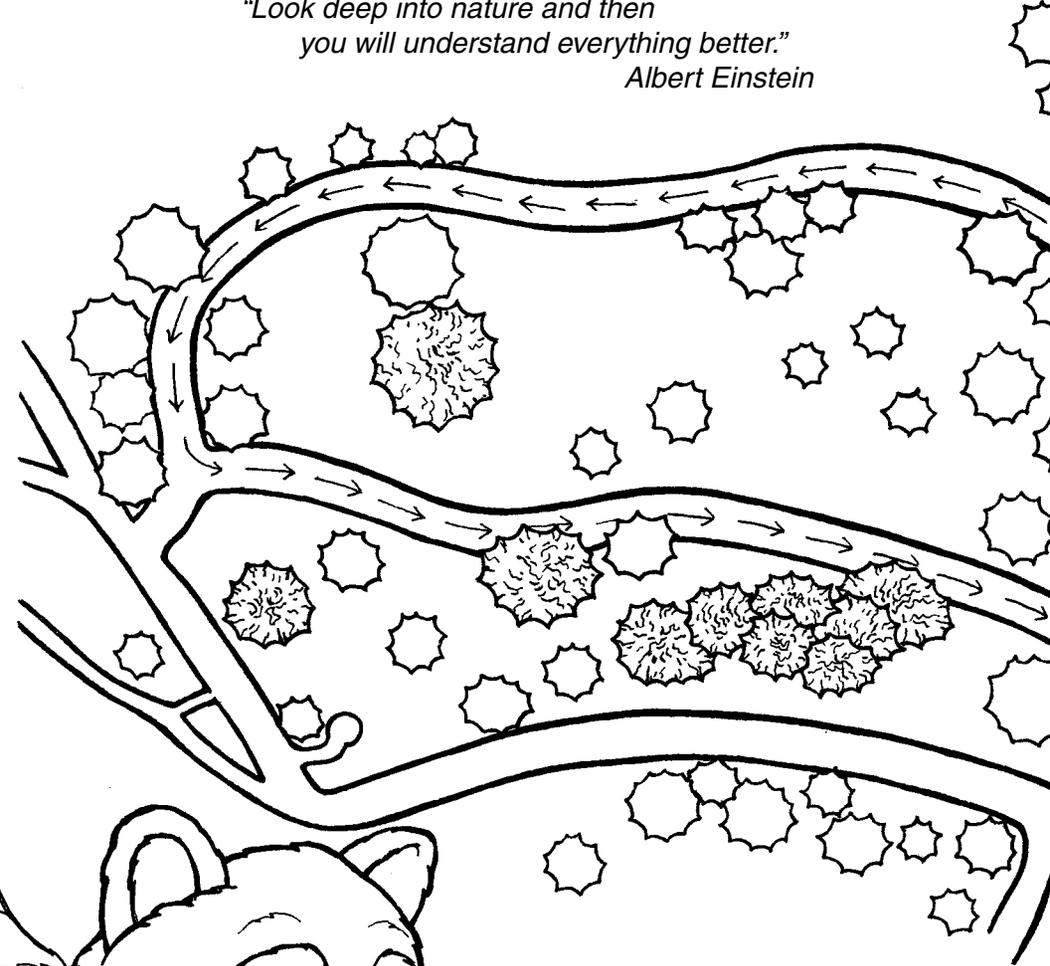


**Guide to a  
TREEmendous  
Adventure**

**Overland Park Arboretum  
& Botanical Gardens**

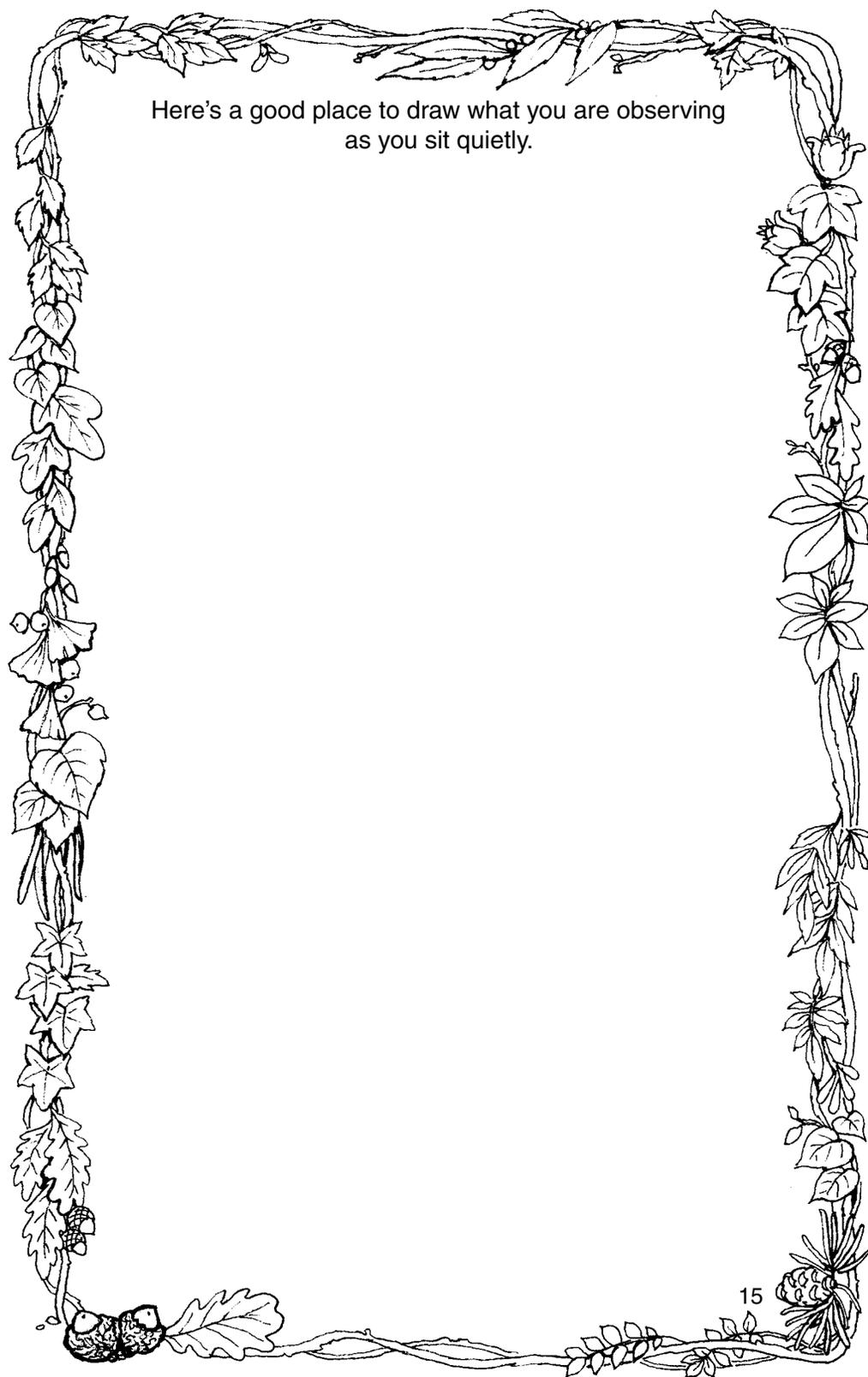
# Tree Adventure Map

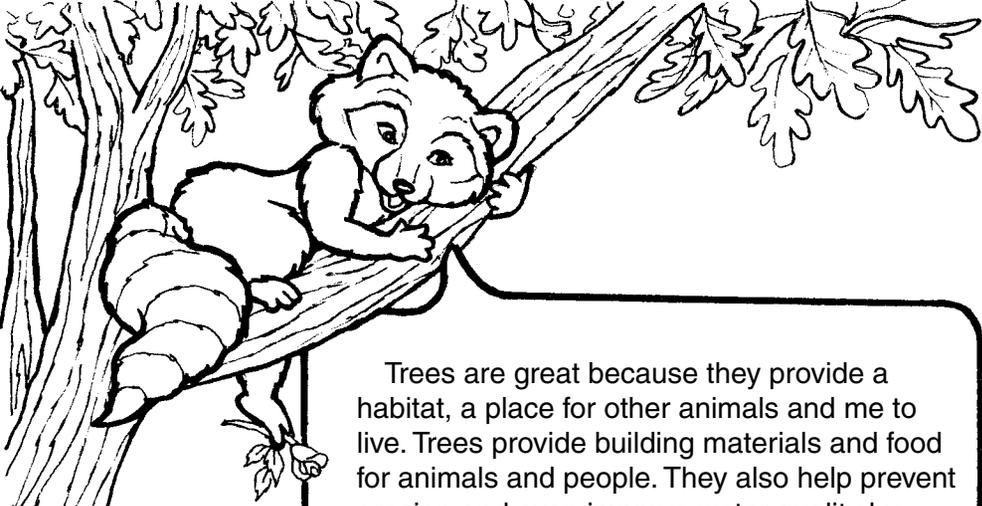
*"Look deep into nature and then  
you will understand everything better."  
Albert Einstein*



I'm Rosebud the Raccoon!  
Welcome to our Arboretum.  
An *arboretum* is a place  
where trees, shrubs and  
other plants are grown and  
studied for scientific and  
educational purposes.

Here's a good place to draw what you are observing  
as you sit quietly.





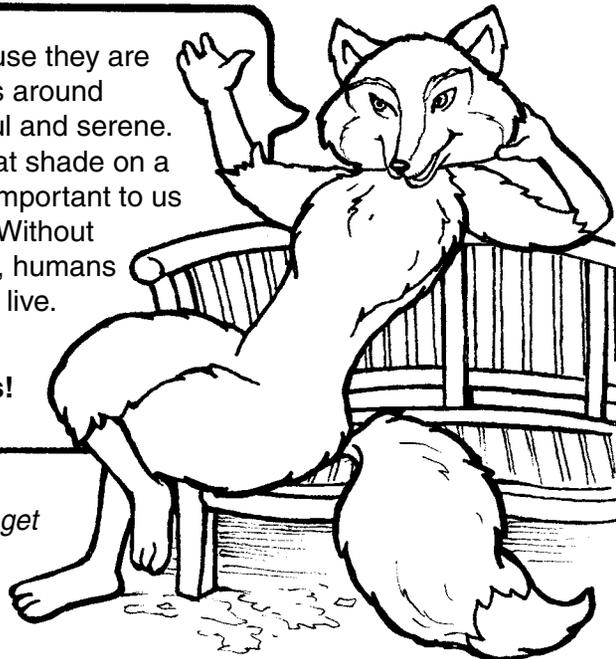
Trees are great because they provide a habitat, a place for other animals and me to live. Trees provide building materials and food for animals and people. They also help prevent erosion and even improve water quality by slowing and filtering rain water. Trees keep our air supply fresh by absorbing carbon dioxide and producing oxygen. Did you know that two mature trees can supply enough oxygen every year to support a family of four?

Just look around your house to find food and objects that come from or are made of trees. Amazing!

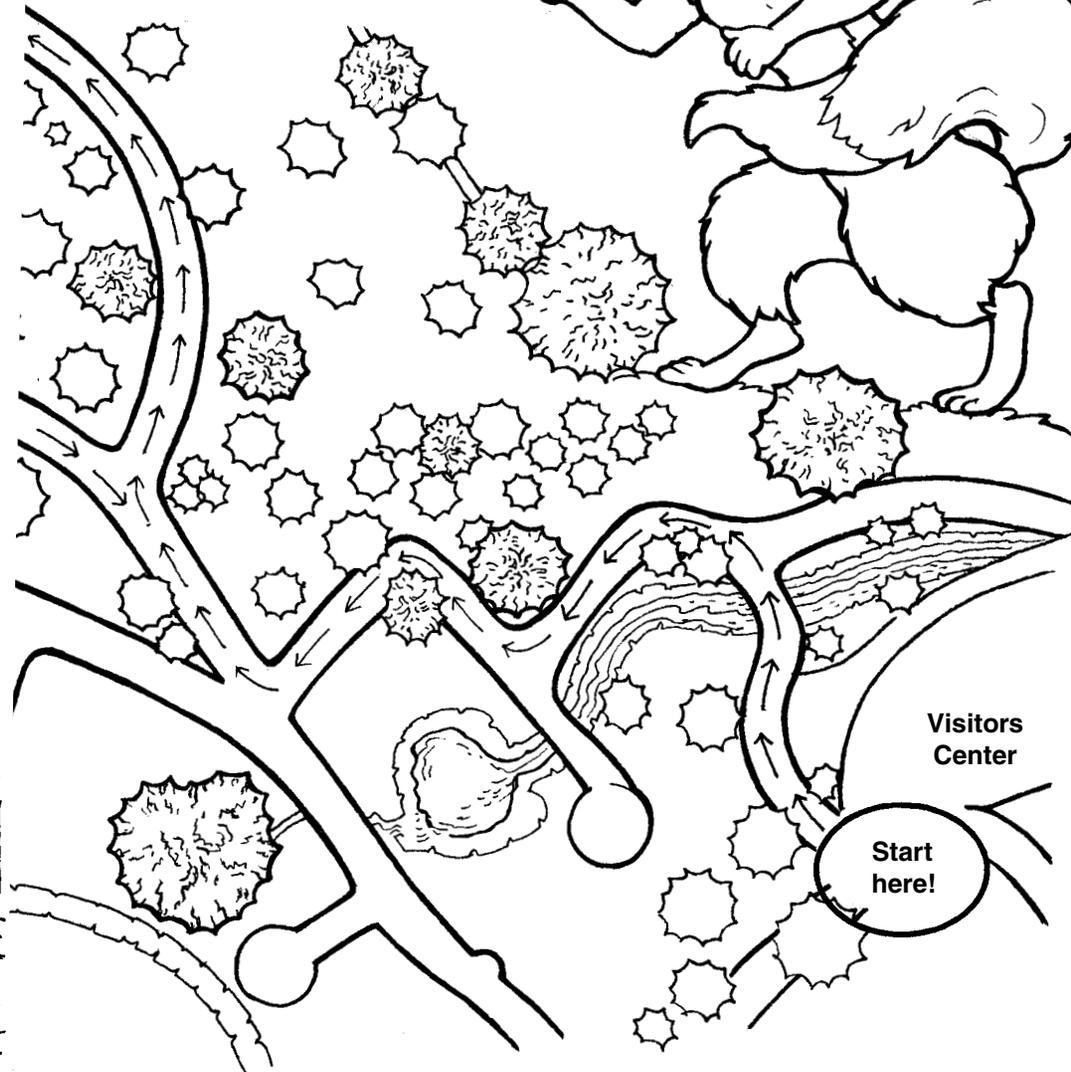
Yes! I love trees because they are beautiful! Having trees around makes us feel peaceful and serene. And trees provide great shade on a hot day. Trees are so important to us and our environment. Without trees and other plants, humans and animals could not live.

**Please take care of our trees and forests!**

Another joke! How do trees get on the Internet?  
*They log on!*



Hi! I'm Forest the Fox and I am a **quiet observer** in the Arboretum. The birds and animals here will go away if you are noisy. You will see a lot when you walk quietly and *even more* if you sit very still for a long time.



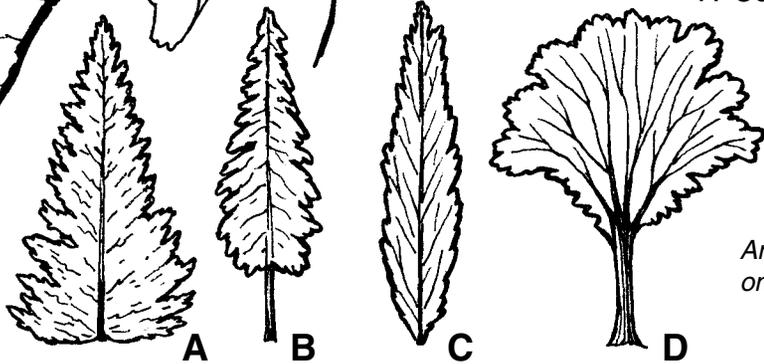
**Follow the arrows and see what you can discover!**  
Remember to leave twigs, flowers, and leaves where they are. 3

## What is a TREE?

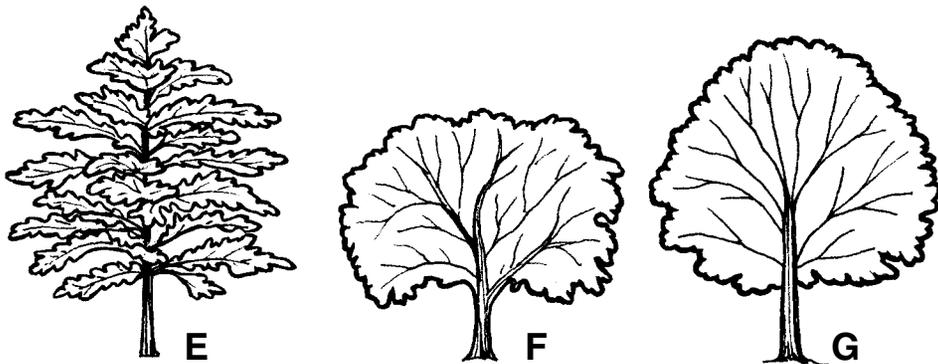
A tree is a living organism that eats, breathes, and rests. It circulates its sap, just like blood circulates in your body. It has a tall, woody trunk, roots, and a crown of branches, twigs, and leaves.

Tree shapes can help with identification. Draw a line to connect the shape word to the tree that it matches:

1. Vase-shaped
2. Broad
3. Rounded
4. Spreading
5. Columnar
6. Pyramidal
7. Conical



Answers are on page 16.



Did you know that about one third of the U.S.A. is covered by forests?

## different-looking trees in the Arboretum:

### TWIGS

Twigs are stout with brownish black buds that have sharp points and are conical.

### BARK

The bark is cinnamon in color. It is a thin peeling bark. The trunk is smooth where the bark has peeled.

### SHAPE

The shape is round to oval. It grows 20–30 feet tall.

Very twiggy, giving lots of winter interest.

Long, horizontal scales that separate into thin papery plates. Bark colors are gray, white and black.

60–70 ft. tall. Tapered silhouette narrowing at the top, giving an irregular crown. Branches have a drooping appearance.

Wide spreading branches with horseshoe-shaped leaf scars on limbs. The spread is approximately 25–30 ft.

Grayish brown in color. It separates into plates as it ages.

Wide domed shape, 30–40 ft. tall.

Branches are horizontal.

Grayish brown and flaky, becoming reddish brown and deeply furrowed with age.

Pyramid shape, single trunk.

Twigs and stems are reddish, giving winter interest.

Reddish brown bark. Branches can droop.

Crown of tree has a round, oval shape.

# Now see if you can find these five very

**TREE NAME**

**LEAF**

**FRUIT/FLOWER**

**Paper Bark Maple**  
*deciduous*

Trifoliate (3 part) leaf. The middle leaflet has a short stem and the 2 outer leaflets have no stems. The margin is coarsely toothed. The color is blue-green on top and downy underneath. The leaf turns a bronze to russet red color in the fall.

Flowers are yellow-green and appear in the spring. The fruit hangs in pairs of 3.

**Birch**  
*deciduous*

Simple leaf, alternately attached to twigs. The feather veined leaf is an oval shape and has a saw-toothed edge.

3 flower clusters form fruit that has a short lateral cone-like structure.

**Red Horse Chestnut**  
*deciduous*

Leaves are attached to stem opposite to each other. The leaves are palmate with 5 to 7 droopy leaflets. They are oblong in shape with serrated edges. They are about 4–6 inches long. Dark green on top and pale green underneath.

Red flowers conical in shape, 6–10 inches long. The fruit is a thick green husk containing shiny brown seeds.

**Colorado Spruce**  
*conifer*

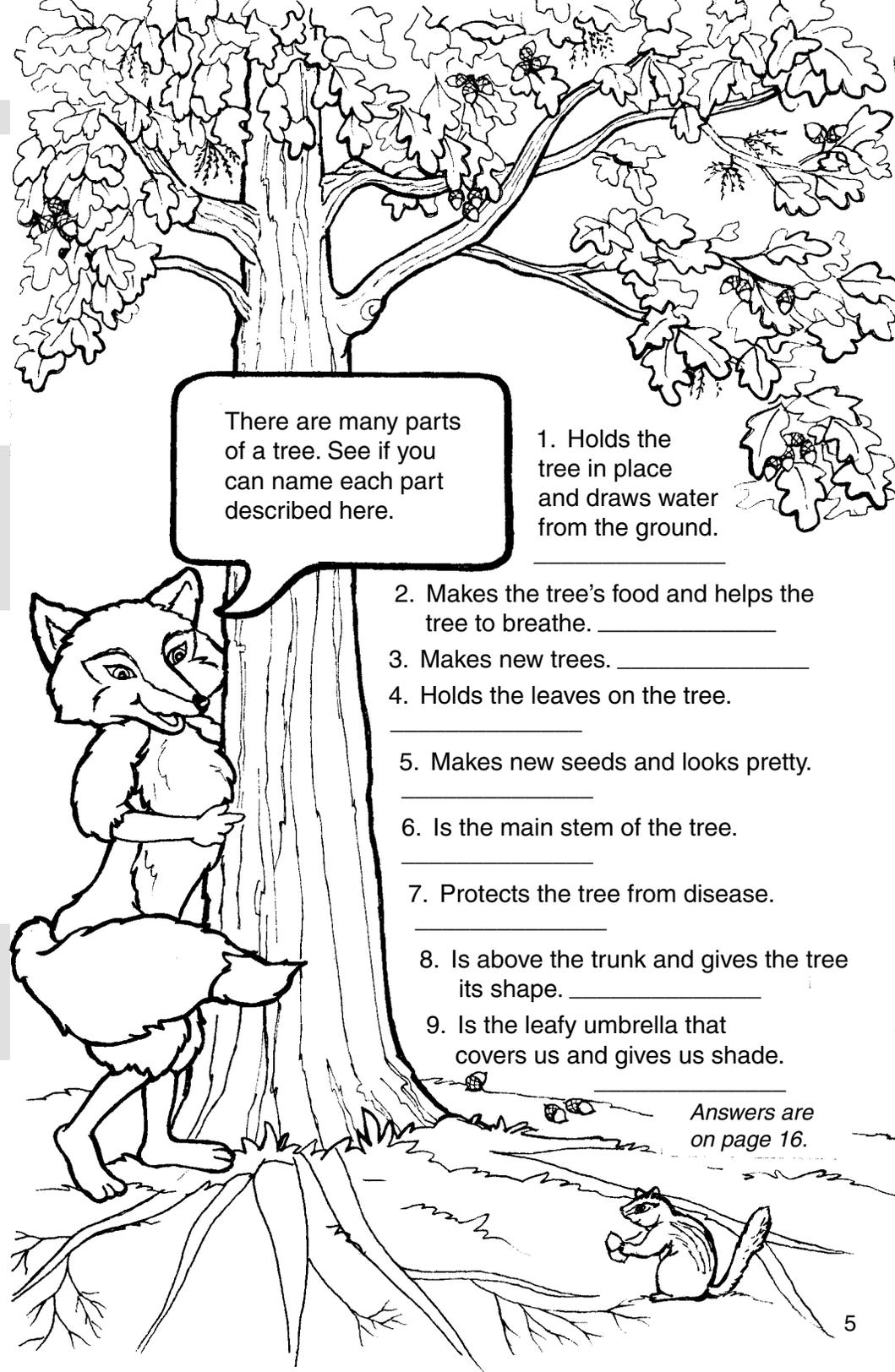
Single needles 1/2– 1” long, very stiff and pointed. Bluish green or silver blue color.

Cones are straw brown, papery, 2–7” long. They hang in clusters or single.

**Red Sunset Maple**  
*deciduous*

3–5 lobed leaves that have a star shape. Shiny green on top and pale green underneath. They can be up to 6 inches in diameter. Leaves turn a bright red in the fall. Leaves are attached to twigs opposite each other.

Small red flowers in dense clusters in mid-spring and red fruit replaces flowers in mid-summer.



There are many parts of a tree. See if you can name each part described here.

1. Holds the tree in place and draws water from the ground. \_\_\_\_\_
2. Makes the tree's food and helps the tree to breathe. \_\_\_\_\_
3. Makes new trees. \_\_\_\_\_
4. Holds the leaves on the tree. \_\_\_\_\_
5. Makes new seeds and looks pretty. \_\_\_\_\_
6. Is the main stem of the tree. \_\_\_\_\_
7. Protects the tree from disease. \_\_\_\_\_
8. Is above the trunk and gives the tree its shape. \_\_\_\_\_
9. Is the leafy umbrella that covers us and gives us shade. \_\_\_\_\_

Answers are on page 16.

# Guides for Measuring Trees

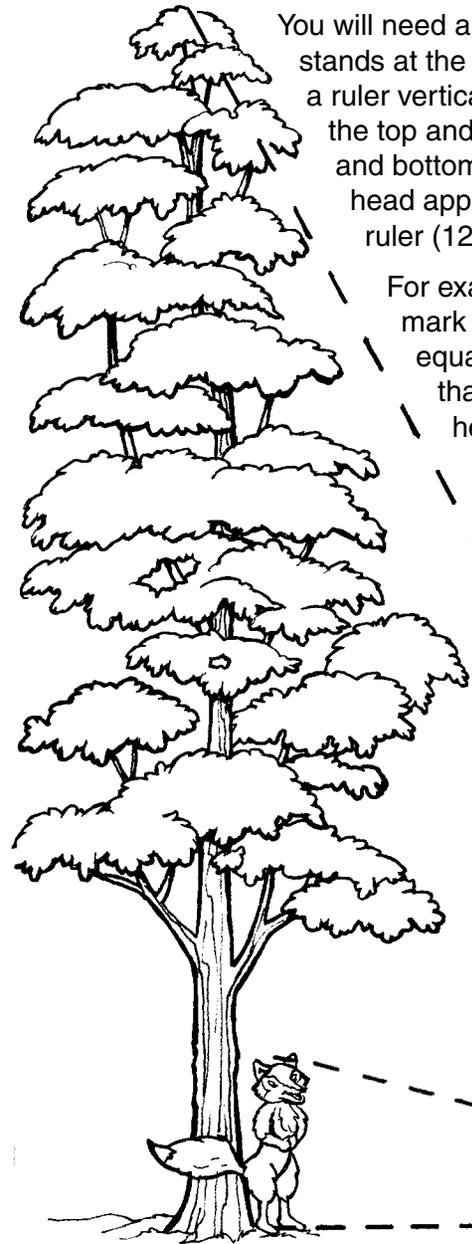
## Proportional Method for Tree Height

You will need a ruler and two people. One person stands at the base of the tree. The other person holds a ruler vertically at arm's length and backs up until the top and bottom of the ruler line up with the top and bottom of the tree. Notice where the partner's head appears on the ruler. Divide the length of the ruler (12") by this number.

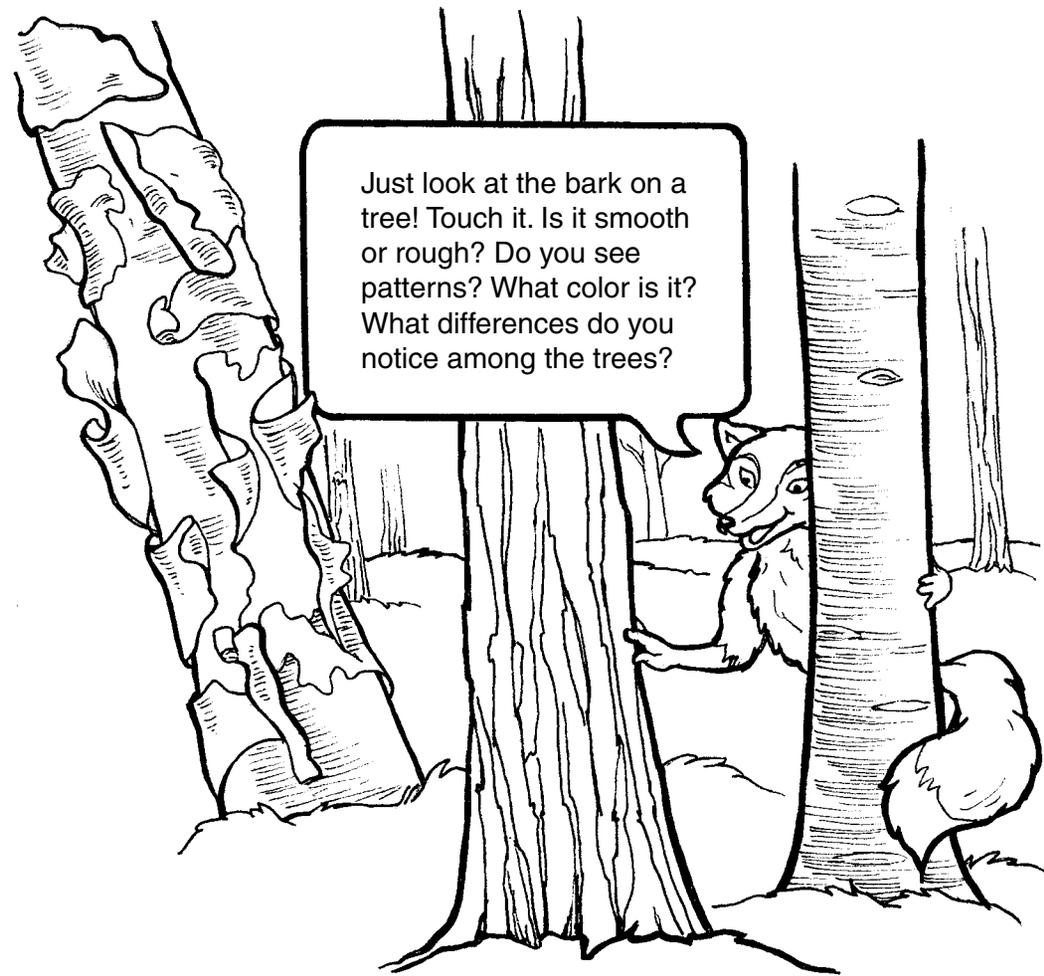
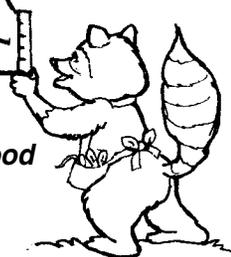
For example, if the partner is as tall as the 2" mark on the ruler, divide 2 into 12, which equals 6. This means the tree is 6 times taller than your partner. Now, measure the actual height of your partner and multiply it by six.

Or you can just use a stick and holding it vertically, put your thumb on the place where the person's head comes on the stick when s/he is standing by the trunk. Then imagine how many more of those thumb measurements it takes to get to the top of the tree.

Multiply that number by your partner's height. This is a very approximate measurement.



*Did you know that the world's tallest tree is a coast redwood in California, measuring more than 360 ft. or 110 m.?*

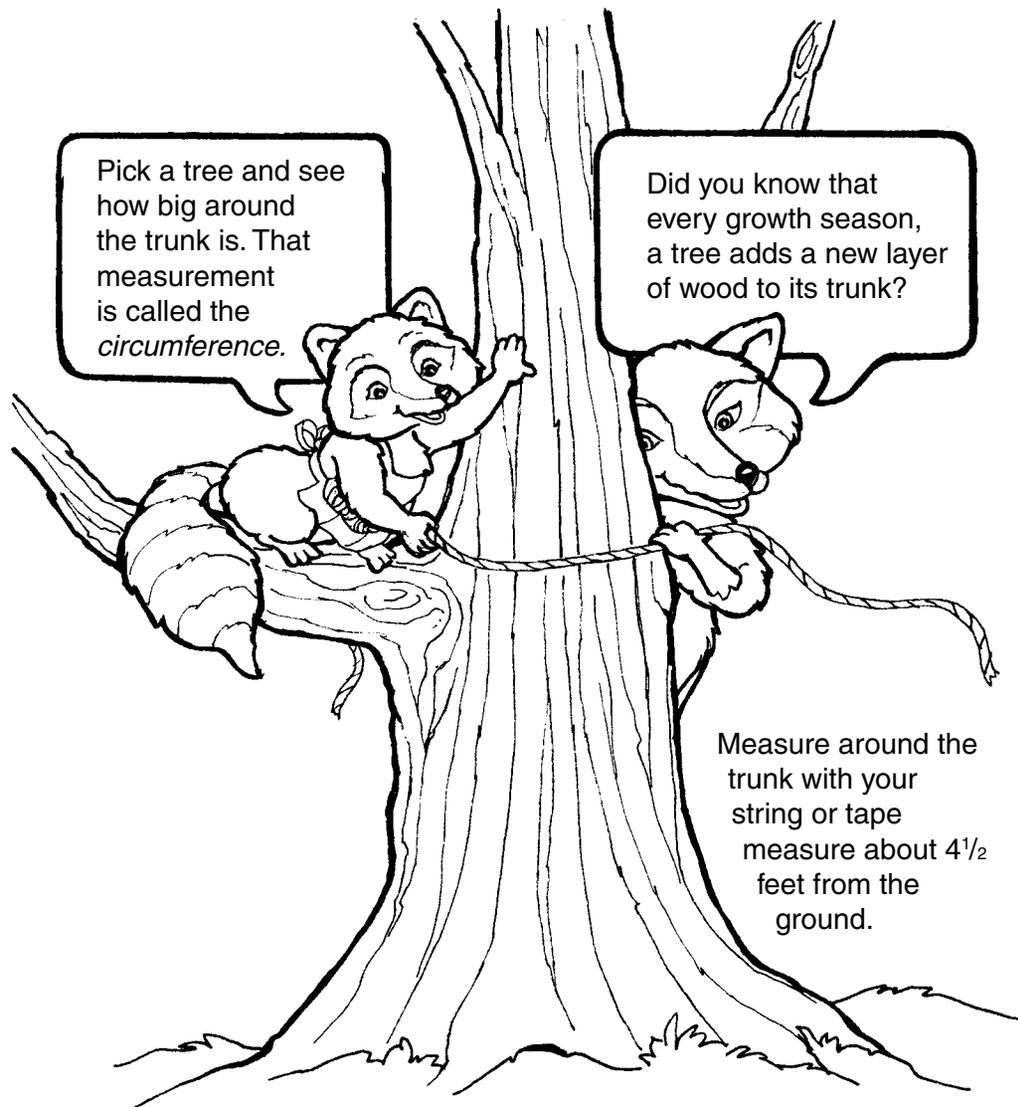


Just look at the bark on a tree! Touch it. Is it smooth or rough? Do you see patterns? What color is it? What differences do you notice among the trees?

Here's a space to do a bark rubbing using a crayon or pencil.



## Measuring the Circumference of the Tree Trunk



Pick a tree and see how big around the trunk is. That measurement is called the *circumference*.

Did you know that every growth season, a tree adds a new layer of wood to its trunk?

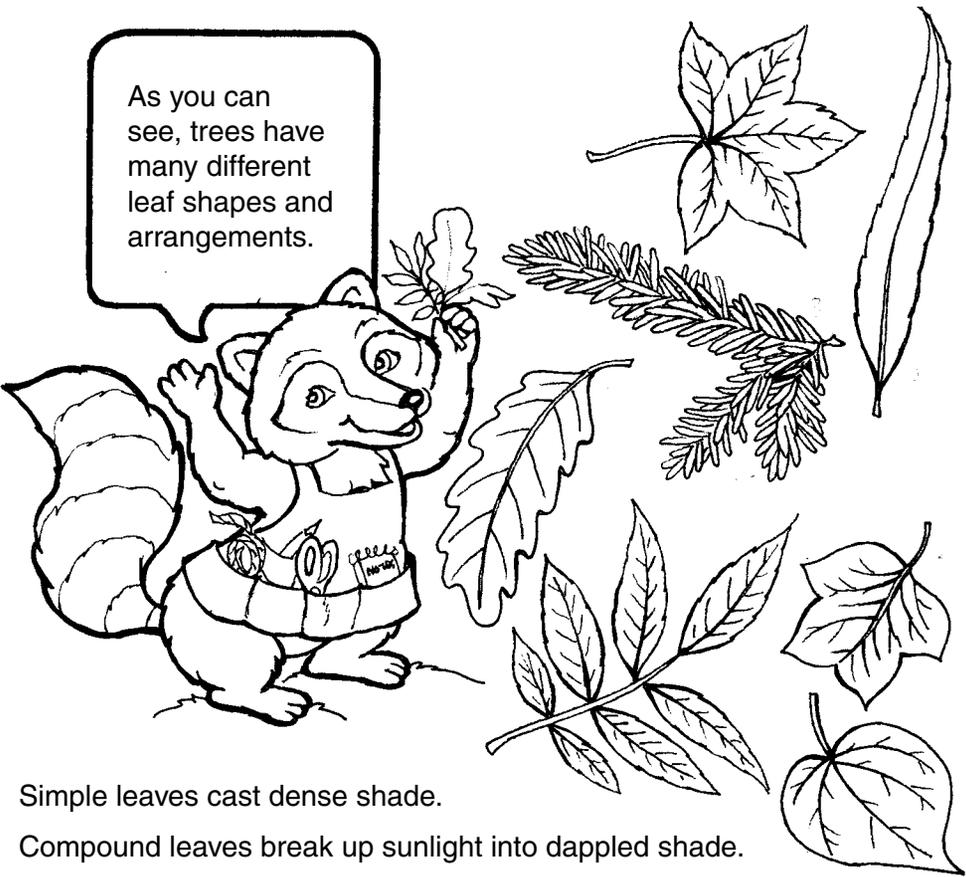
Measure around the trunk with your string or tape measure about 4½ feet from the ground.

## Measuring the Crown Spread

Foresters measure the crown spread (the distance the tree's branches spread away from its trunk). You can use arm spans, paces or feet for this. Have one person stand under the branch tip farthest from the trunk (Person A) and another under the branch tip opposite that one (Person B). Measure the distance from A to B.

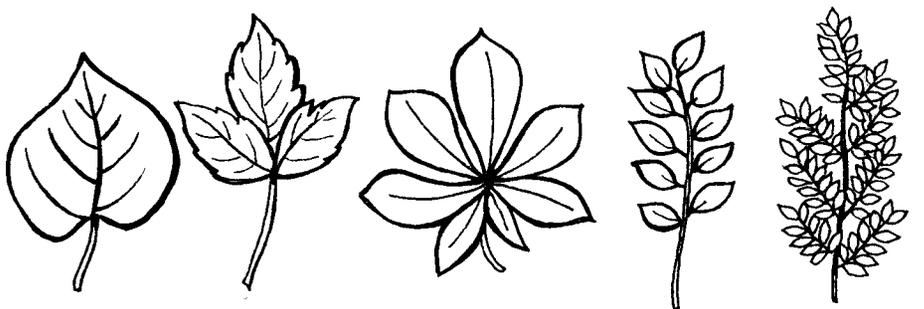
*Here's a joke! What did the tree wear to the pool party?  
Swimming trunks!*

As you can see, trees have many different leaf shapes and arrangements.



Simple leaves cast dense shade.  
Compound leaves break up sunlight into dappled shade.  
The way leaves are arranged on a stem is called leaf composition.

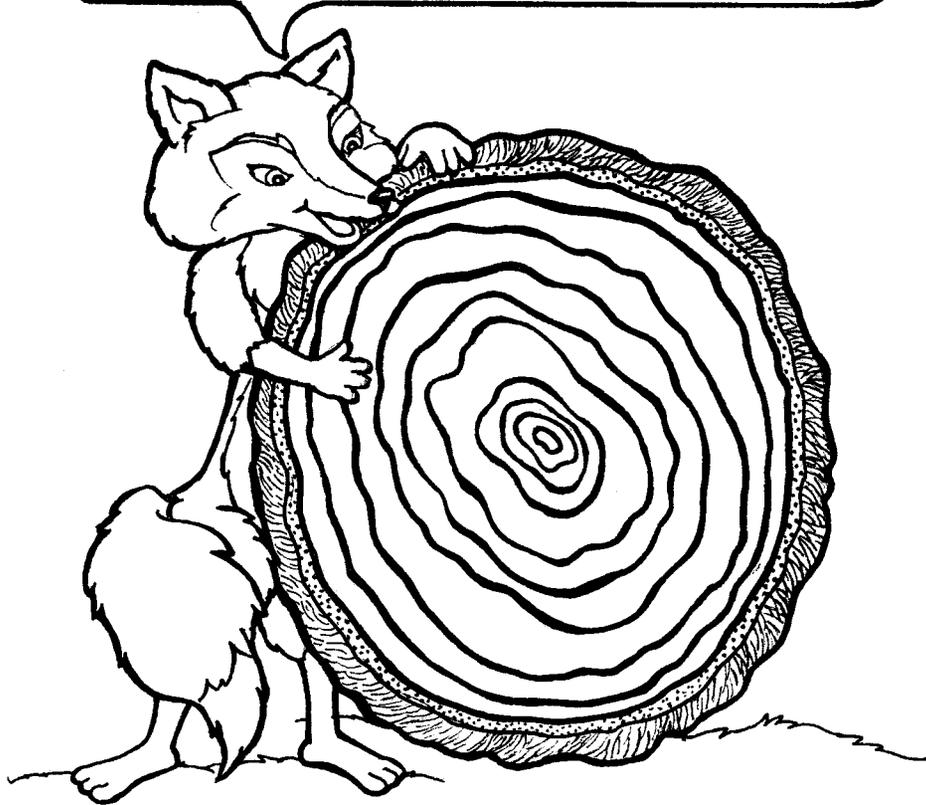
## Here are some sample leaf compositions.



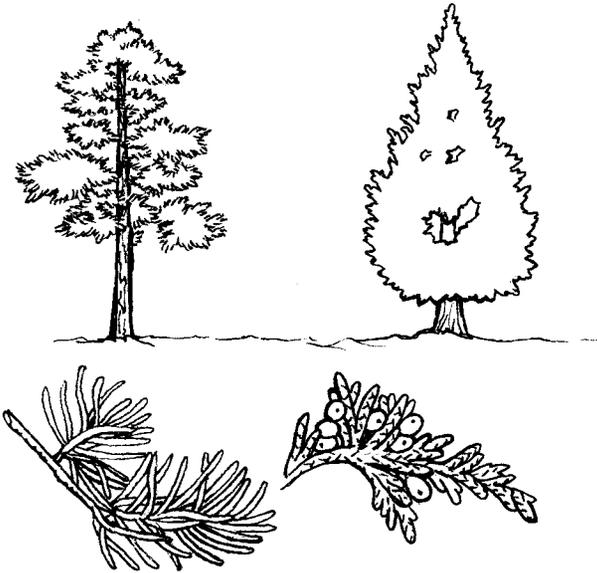
Simple      Trifoliolate      Palmately compound      Pinnately compound      Bipinnately compound

*Oh boy! Here's another joke! What did the little tree say to the big tree?  
Leaf me alone!*

You can find out how old a tree is by counting the growth rings in a cross-section of a tree trunk. These cross-sections are sometimes called "tree cookies."

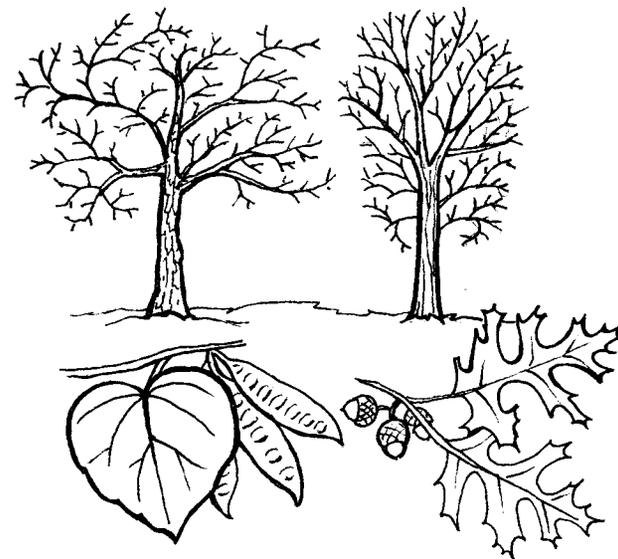


## There are two main groups of trees



1

**Coniferous** trees have cones and needle-like leaves that remain alive on the tree throughout the winter and into the next growing season. These trees are sometimes called *evergreen*.



2

**Deciduous** trees have leaves that are flat, thin and generally shed annually. Also called *broadleaf*, these trees bear a variety of fruit, nuts, and flowers.

A tree develops two rings for each year of its life. The wider, light-colored ring grows in spring and early summer and consists of larger cells because of lots of water, nutrients, and sun. The darker ring grows in late summer and fall. The cells are smaller, storing food for the winter rest.

How many growth rings does your tree cookie have? Why do you think some of the rings are bigger than others?

**Did you know that the average sized tree can provide enough wood to make 170,000 pencils?**

*"Though a tree grows so high, the falling leaves return to the root."*

Malay proverb

