Kindergarten

Getting to Know Trees

Objectives

Students will:

- tell what a tree is (the worlds largest plant);
- describe in simple terms the value and beauty of trees;
- observe trees and identify roots, crowns, trunks, and bark;
- describe seasonal changes in trees.

Vocabulary Words

air	bark
seeds	inner wood
roots	adults
trunks	branches
crowns	leaves
fluids	

Background Information

What would the world be like without trees? We would certainly miss their beauty. Think about the changes in colors from season to season, the rustle of leaves under our feet, the beautiful green of the evergreen trees standing in the white winter snow. What are some other beautiful things about trees?

A summer without trees would be much hotter. Trees give us shade and help cool the air. Trees "drink" huge amounts of water each day through their roots. Some of that water passes through the leaves into the **air** to give us moisture. Trees also help clean our air by taking the part of it we can't breathe (carbon dioxide) to make their own food. As they do this, they make oxygen, which is the air we breathe.

Many animals would be without homes and food if there were no trees. Birds, squirrels, bugs, and mice are just a few of the animals that live in and around trees. These animals and others get much of their food from trees. Bark, nuts, leaves, and fruit are tasty treats for many animals—and for people, too.

Trees cover about one-third of the earth and are the largest plants in our world. They can live for a very long time. One bristlecone pine tree in California is 4,600 years old!

Like other plants, trees grow from **seeds.** Trees have three main parts: **roots, trunks,** and **crowns.** As they grow tall above the ground, exciting things are happening underground, too. Below the soil where we can't see them, roots are spreading far out from the tree in all directions. The roots are creeping through the soil looking for water and nutrients (food). They're also helping hold the tree in place so it doesn't blow over.

The tree's main stem—called the trunk—keeps growing from year to year. The trunk keeps the tree standing strong and tall. It holds up the top part of the tree (the crown), and is a passageway for water and other **fluids** to move up and down the tree. The rough outer skin of the trunk is called **bark.** The woody center inside the trunk is called **inner wood.** Humans stop growing bigger when they become **adults,** but trees grow all their lives.

The crown of the tree is the **branches** and **leaves.** It has the important job of making food for the tree. The leaves are tiny "factories" that make food. To do this, they need water, air, minerals from the soil, and energy from the sun.

First Steps … A Nature Hike!

Capitalize on children's natural enthusiasm and curiosity and a nature hike becomes a delightful tree discovery learning experience. See "Tips for Safe and Successful Nature Hikes," Resources, page 91. A first trip for kindergartners might be the schoolyard or a close-by neighborhood.

For better focus and direction on a nature hike with young children, have an older student or adult accompany each group of three to four children. Give each group leader a written list of things to look for and a few questions to spark discussion. Throughout the hike, encourage children's observation skills and their sense of beauty: Ask and discuss questions such as the following to reinforce the objectives in this lesson.

What do you like best about trees?

What do you think is beautiful about trees?

Why do people like to have trees in their yards and parks?

How are the trees we see here alike? How are they different?

There are many different kinds of trees. How do people know the difference between one kind and another? (Leaves are a main clue.) How can we find out what kinds of trees we have in our schoolyard?

Which tree is the largest? The smallest?

Which trees seem to be older? Younger? How can we tell?

Where are the roots of a tree? The trunk? The branches? The crown?

Where is the bark on the tree? Does the bark look alike from one tree to another? What is different?

How do we know what is inside a tree?

Are there any signs that animals live in or near these trees? How is a tree a friend to animals?

What season of the year are we in?

How will these trees look different in other seasons?

Encourage students to ask their own questions and to compare and discuss their ideas with others. The questions and activities you choose and the amount of guidance you give depends on the attention span, interests, and "personality" of the group.

A Special Friend

Invite students to get to know at least one tree near the school as a special friend. Take a photograph of the tree to post in the classroom. Help students learn what kind it is, what kinds of life go on around it, and how it changes from season to season. Are there ways people can help the tree stay healthy? (Watering, protecting against damage from bicycles and lawn mowers, carving, breaking branches, etc.) Visit the tree periodically and watch for changes.

Seasonal Enhancements

See "Trees through the Seasons," Resources, page 123, for a variety of questions and activities for each season.

Language Arts

Literature and Folklore

Book Nook. See "Book Nook," Resources, page 135, for tree-related books to enjoy with young children. Choose books about forest wildlife, flowers, etc., too.

The Giving Tree. Read *The Giving Tree* by Shel Silverstein. This classic is available in most libraries and book stores. In what ways did people hurt the tree? How did the tree keep "loving back" anyway? In what ways could people have helped the tree and kept it safe? What could the young man have done to make sure his children and grandchildren had "giving trees" of their own?

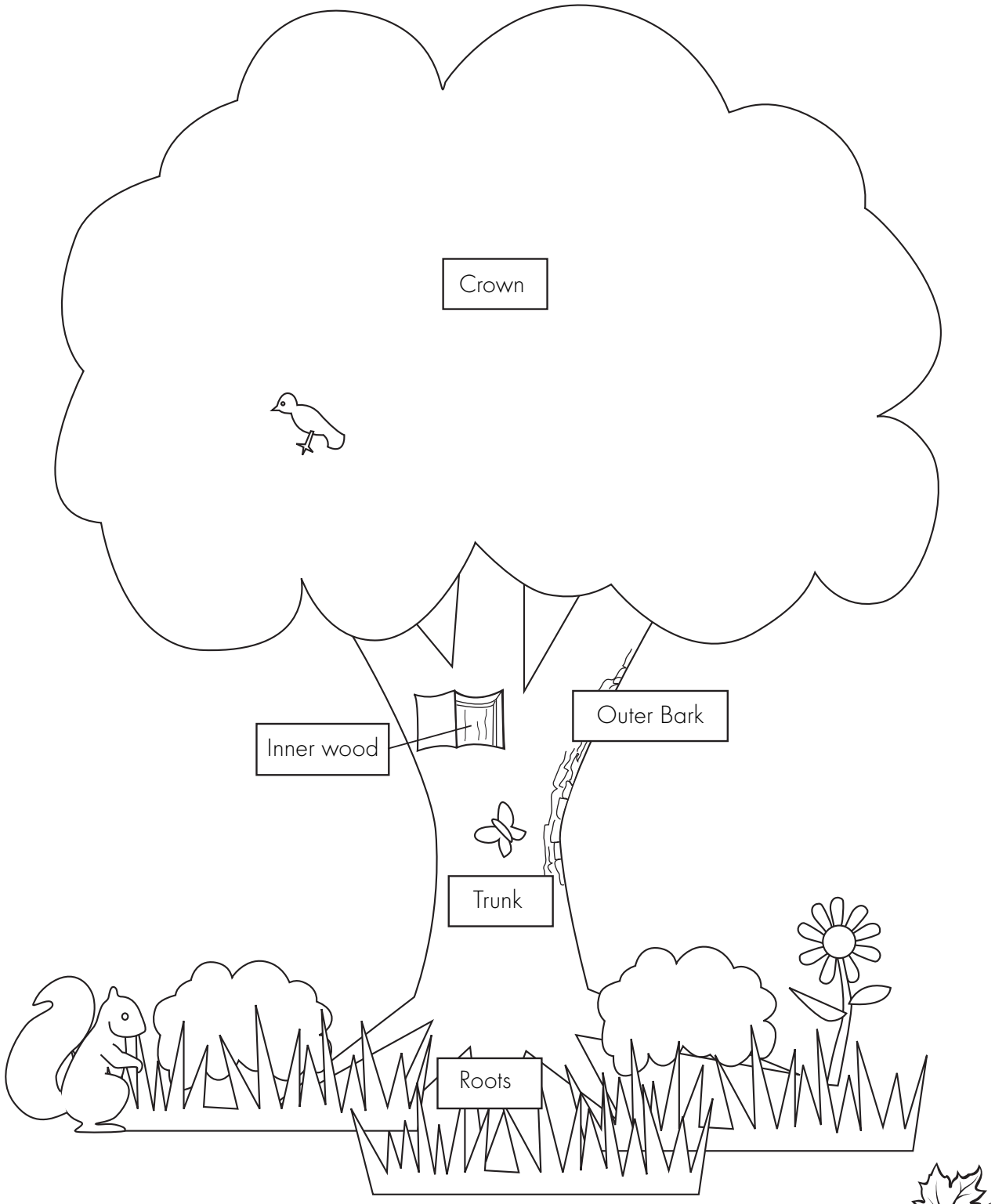
Trees … Friends to Many

Talk about some of the many creatures that call a tree a friend and how they use it. How many can you think of? Birds build their nests in trees. Many birds eat bugs that live on trees or in the bark. A tree gives shade for people, animals, and buildings. Some trees give nuts and fruit to eat. Trees are a fun place for children to play. Squirrels have their homes in trees, eat nuts, and jump from branch to branch, safe from animals that might catch them on the ground.

What Is a Tree?

Create a large paper tree on the bulletin board. Have students paint or color the tree. Label the roots, trunk, crown, outer bark, and inner wood.

Students participate by adding other things that share a tree's living space: grass, squirrels, birds, mice, woodpeckers, flowers, shrubs, etc.



My Favorite Tree

You'll need: Drawing paper and crayons or a camera with film.

Encourage students to choose a favorite tree, draw or take a picture of it, and tell why it's special.

People and Cultures

Tree Things

You'll need: Drawing paper, crayons, scissors, and magazines (optional).

Look around the room and name all the things made from wood. Invite students to bring things from home made of wood or to cut photographs from magazines of things made of wood. Ask: How would our lives change if we did not have some of these things? Why do you think wood is used to make these things rather than some other material?

Give each student a sheet of paper. They fold the sheets into quarters (to have four boxes). In each box or window, they draw something they use that is made from wood.

Totems

You'll need: Pictures of totem poles made by American Indians of the Northwest, drawing paper, and crayons.

American Indians living in the northwestern United States carved tall wooden poles into symbols that told stories, scared away enemies, and stood for good luck. Show students the pictures of the totem poles, then invite them to draw a totem pole of their own with faces, animals, and other symbols they think will bring good luck.

Science and the Environment

Eye Spy

Look for: Robins returning. Why do they search among the tree roots near the ground? How do trees help robins?

Look for: Lilac bushes and apple trees blooming, pussy willows, and dandelions.

Look for: Birds nesting. Why do birds often rest and sleep in trees instead of on the ground? Why do birds build nests?

Seasons of Life

You'll need: Photographs of trees in different seasons.

Show pictures of trees in each season of the year. Ask students to identify the season and choose words to describe each: bare, blossoming, budding, colorful, green, etc. What else is going on in nature during each of these tree changes? (Colder or warmer temperatures, snow, grass greening out or turning brown, etc.) What makes the tree change? (Simply, trees change with temperature changes, amounts of moisture, and the length of days—long summer days with lots of sunshine help trees produce food for themselves so they can grow; the shorter, colder days of fall and winter cause the tree to stop making food and go into a resting time.)

Is It a Tree?

You'll need: "Is It a Tree?" Activity Sheet, page 10 and crayons or markers.

A tree is the largest of all plants and differs from other plants in four ways:

1. Most trees grow at least 15-20 feet tall. That's about twice as high as our classroom ceiling (if 10-foot ceiling).
2. They have one woody stem that is called a trunk.
3. The trunk grows at least 3 to 4 inches thick.
4. A tree's trunk (stem) can stand by itself.

All other plants are different from trees in at least one of these ways.

Look at the activity sheet. Ask: Is the tree in Box A really a tree? Why or why not? Color it if it is a tree. If it is not a tree, don't color it. Continue in the same way with the rest of the boxes.

Mix and Match Leaves

You'll need: A collection of leaves or good photographs of leaves.

Classify leaves according to:

1. shape
2. size
3. smoothness or roughness
4. smooth edges or toothy edges
5. smell
6. color
7. kind

Healthy Snacks

Brainstorm a list of things people eat that come from trees. Why do we *never* eat tree or plant parts unless adults have said it is safe to do so?

Rodney the Root Says …

Finish my tree! See "Rodney the Root Says" Activity Sheet, page 11.

Enhancements

Math

Nature Math

On a visit to a park (or in the schoolyard) involve all the members of your group in number activities by using directions such as:

Take three steps forward, take five steps to the left.

From things already on the ground, pick up three very small twigs or leaves, and two large twigs or leaves. See how you can arrange them in different sets or groups.

Arrange your twigs or leaves in order of size with the largest one first and the smallest one last.

Arrange your twigs or leaves in sets according to the number called out. (Call out numbers, students match with same number of objects.)

Return the objects used to where they were found and discuss why this is important. (Removing things from their natural settings takes away from the environment. See "Tips for Safe and Successful Nature Hikes," Resources, page 91.)

Variation: Small groups of students stake out various sections of the area. Older students might help the younger ones to prepare a guided tour of the objects they find in the area, beginning with the largest and ending with the smallest. Encourage students to use the math terms "greater than" and "less than" when describing their finds. For example, "First we have a tree. It is greater (in size) than this pebble."

Explore Tree Shapes

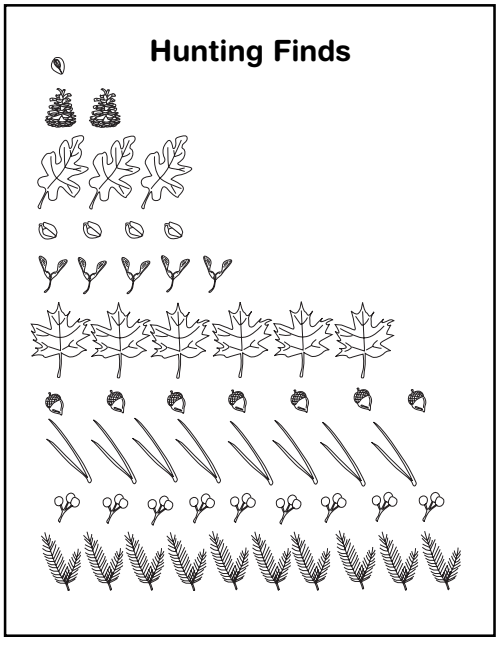
You'll need: "Explore Tree Shapes" Activity Sheet, page 12.

Ask: What shapes do you see on the bottom of your paper? Cut out the shapes and paste each one onto the tree it matches.

Scavenger Hunt

Go on a scavenger hunt outside or inside. In a paper bag, collect one of some object, two of a different object, three of yet another object, and continue until you have collected 10 different items, in 1-10 quantities. Collect only things that can be taken without hurting the environment and other living things.

Make a graph of these objects using the objects themselves, prints, or pictures of the objects.



The Arts

Dance of the Forest

Play tapes of forest or "nature" sounds. Children dance and move about, feeling the music with their bodies.

Leaf Melties

You'll need: Leaves, heavy books, waxed paper, old color crayons, potato peeler or grater, a towel or newspaper, iron, string, and adult assistance.

Besides enjoying their shade, look what you can do with leaves! Have each student collect two or three well-shaped leaves and press them flat under a stack of heavy books for several days. Arrange pressed leaves on a piece of waxed paper about the size of a notebook page. Using old color crayons and a potato peeler or grater, make crayon shavings to sprinkle over the leaves. Use favorite colors. Cover the leaves and crayon shavings with a second piece of waxed paper. Put a towel or a few sheets of newspaper on top to protect the design. With the help of an adult, press carefully with a hot iron to melt the crayon shavings. When you take away the towel or newspaper, you have a beautiful leaf meltie. Trim to a shape you like, thread a string through the top, and hang in the window to "light up" and dazzle!

Leaf Figures

You'll need: Leaves, heavy books, glue or staples, drawing paper, and crayons, paints, or markers.

Press leaves under a stack of heavy books for several days. Then glue or staple them to drawing paper. Students use crayons, paints, or markers to add features to the leaf to make it something else (a leaf person, leaf car, leaf fish, etc.).

Beautiful Trees

You'll need: Drawing paper and crayons, paints, or markers.

Invite students to close their eyes and think about things they think are beautiful about trees. Ask: What would the most beautiful tree in the world look like? Where would it be? What would you do with it? What would you say to it? Each student describes and draws a picture of his or her "dream tree."

Draw or paint beautiful flowering trees.

Games and Physical Activities

Game Time

Forests and the Great Outdoors offer a bonanza of opportunities for fun and creative physical education activities.

Play familiar games such as hopscotch, jacks, marbles, or pick-up sticks, substituting natural materials—cones, twigs, or rocks—for manufactured counterparts. Invent new games using other natural materials you find, but don't change or damage the environment of the area from which they are taken.

Bear in the Forest

One player, the bear, crawls around the playing area on his or her hands and knees. The other players weave in and out and around the bear in a clockwise rotation, some coming within a few inches of the bear and others staying farther away. When ready to surprise the players, the bear yells "Bear in the Forest!" and leaps up to tag the other players. They scatter as quickly as possible in all directions. Any player tagged becomes a bear and the game is repeated until all are bears.

Touch and Feel Fun

You'll need: Bags or containers and objects to feel.

Place several items in a bag that are things from a tree. Students take turns putting their hands in the bag and trying to identify items by touch only. When they have things in their hands, they describe each item and tell what they think it is. Then they take out the item to check their guesses.

Performance Assessment

Task Statement

Give each student a large sheet of drawing paper. They fold their papers into fourths. Students then draw what they think their trees look like in each of the four seasons. Start with spring, the growing and new-birth season. Go next to summer, then fall and winter.

Kindergarten Standard

Illustrate the seasonal changes that occur in trees. Include a trunk and crown on each tree.

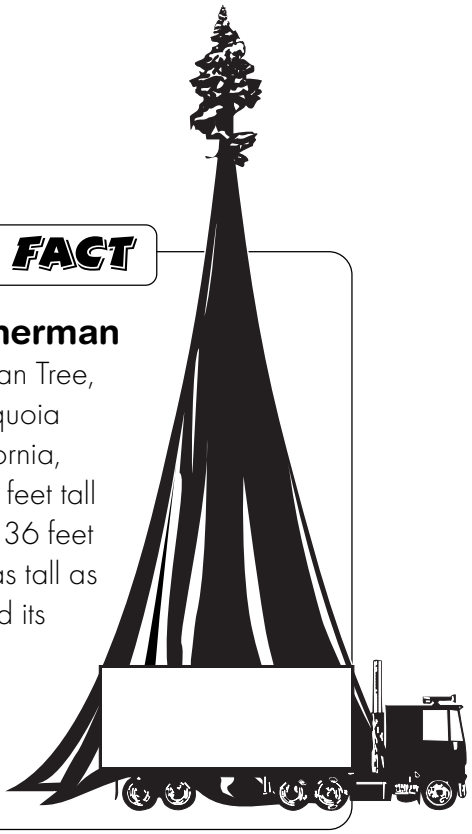
Rubric—Quality of Performance

4 Exceeds performance standard
3 Meets performance standard
2 Developing toward performance standard
1 Attempt made but many serious errors

FUN FACT

Meet General Sherman

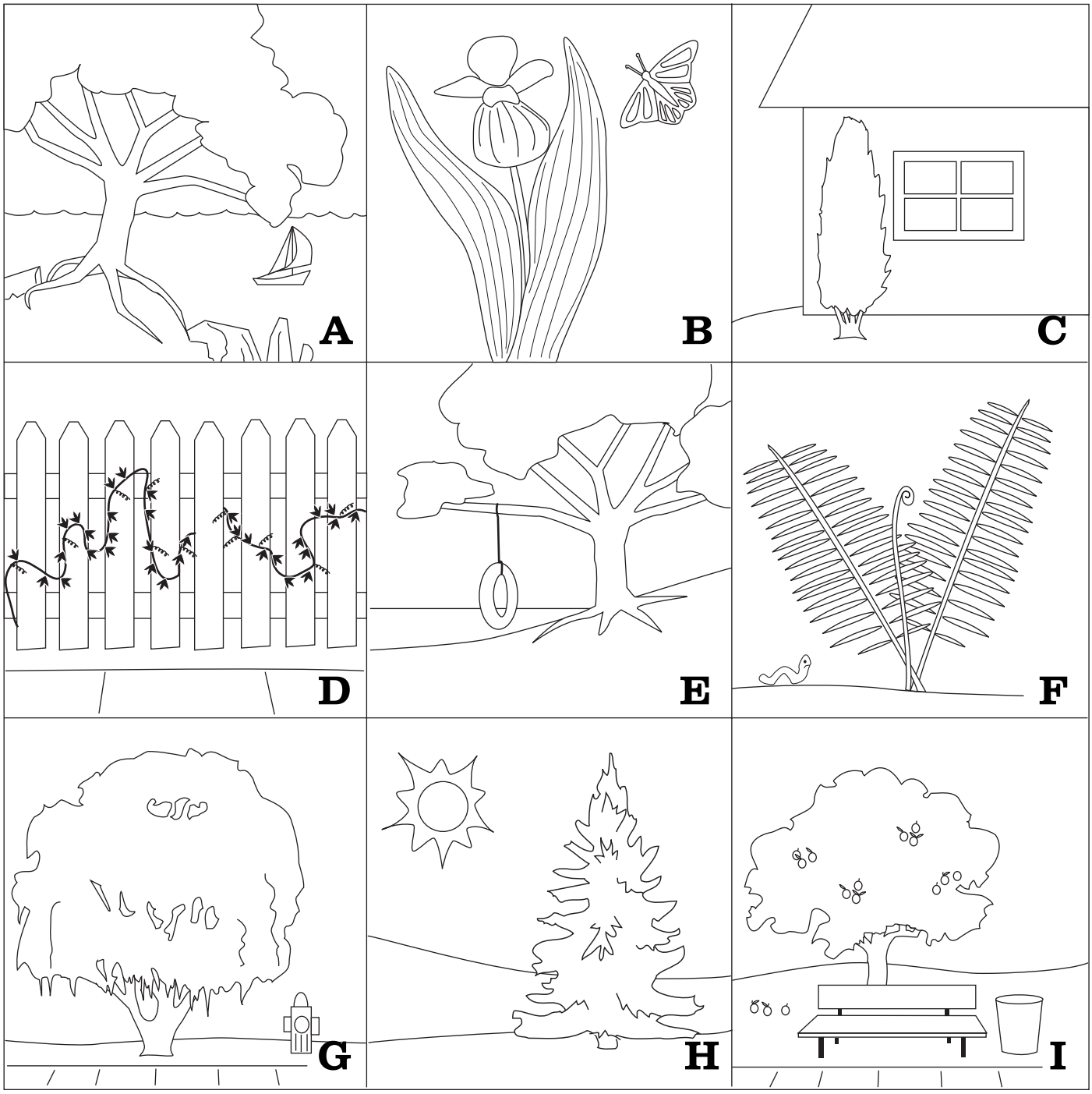
The General Sherman Tree, a giant sequoia in Sequoia National Park in California, towers more than 272 feet tall and has a trunk about 36 feet wide. That means it's as tall as a 20-story building and its trunk is as wide as a semitrailer is long. It's probably almost 3,000 years old.



Is It a Tree?

KID'S COPY

NAME: _____



Rodney the Root Says…

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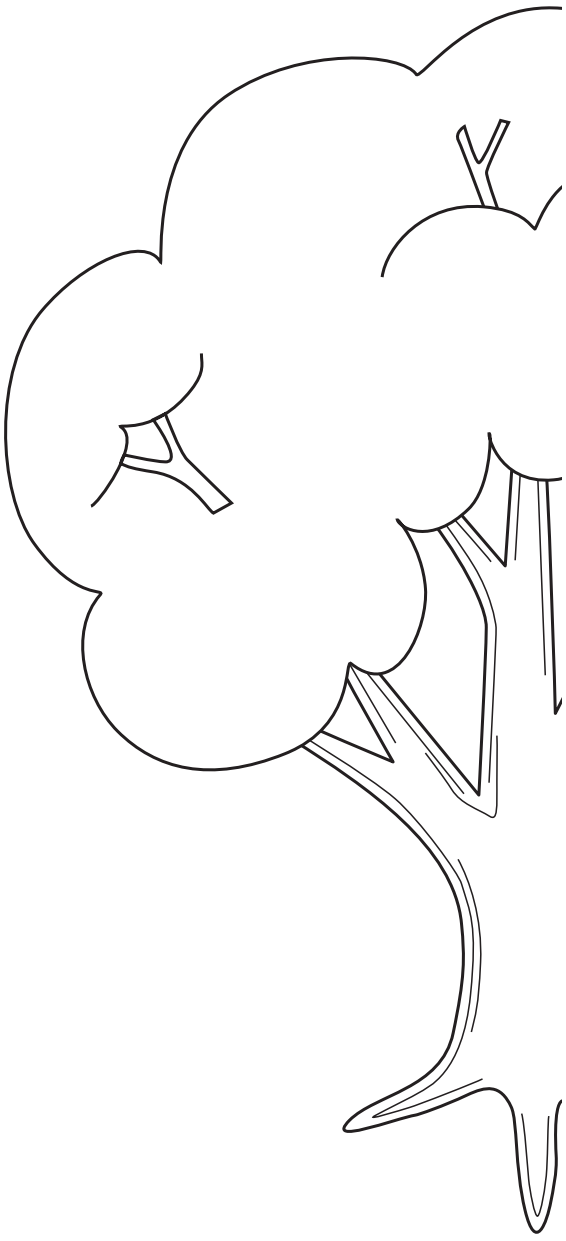

Explore Tree Shapes

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Cut out the shapes below and paste them on a tree that matches each shape.

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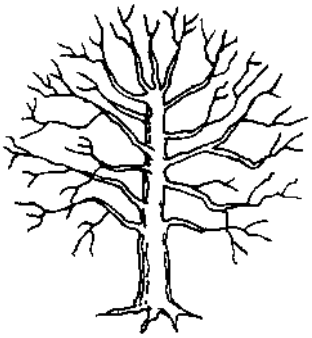
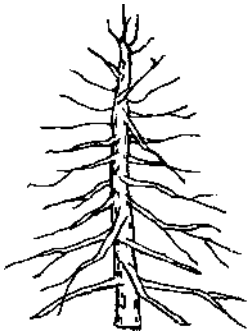
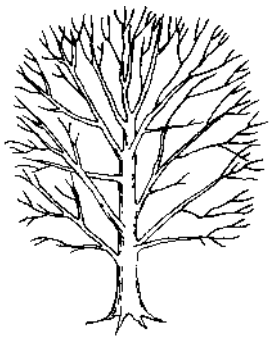


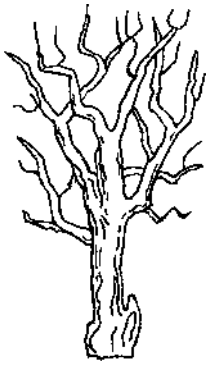
oak



spruce

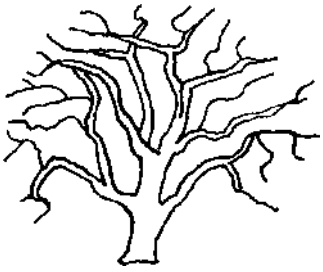


maple



cypress

cedar



crab apple