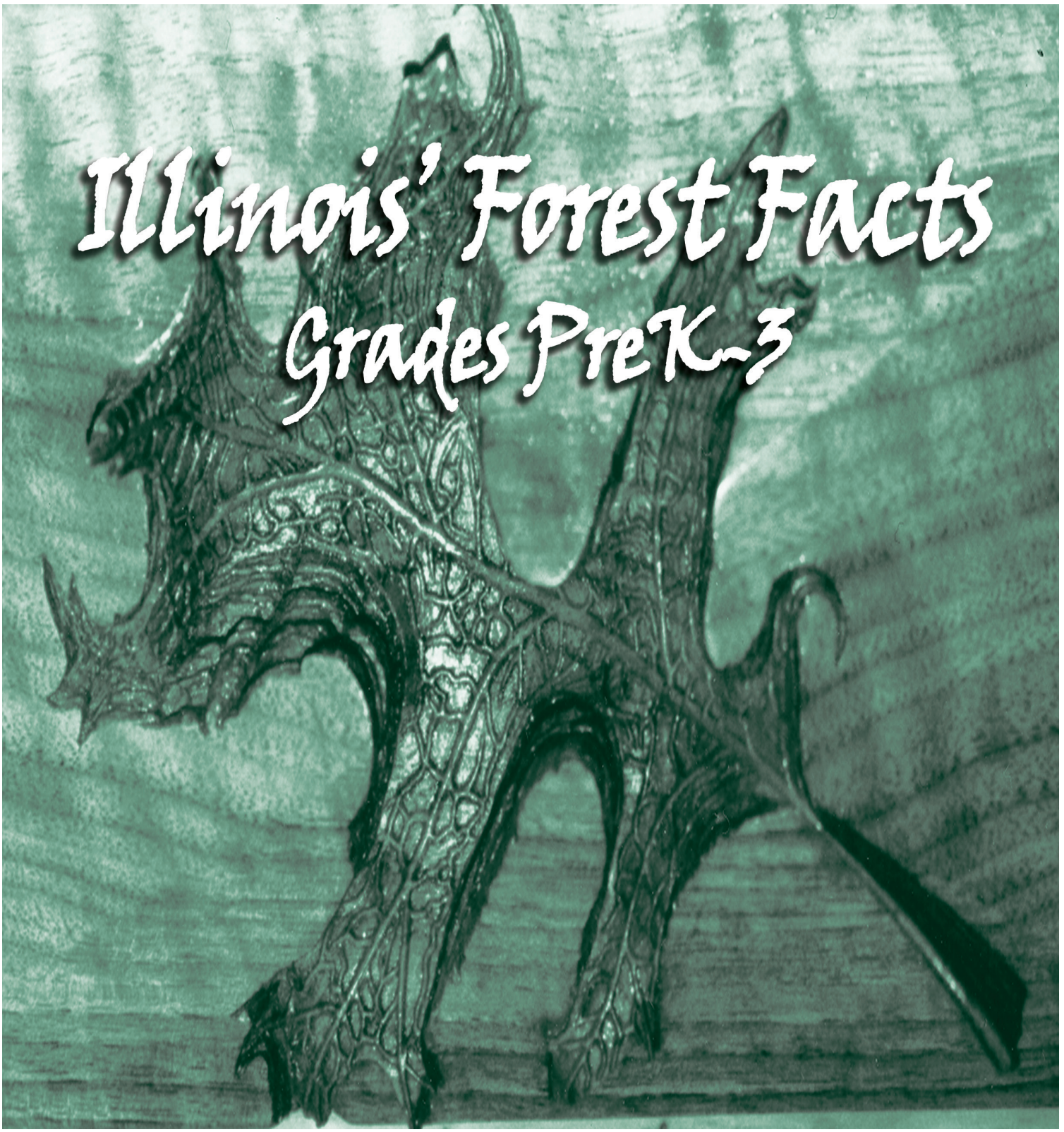
State of Illinois
Illinois Department of Natural Resources



Illinois' Forest Facts

Grades PreK-3

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

FOREST STEWARDSHIP

USDA Forest Service
State & Private Forestry
Cooperative Forestry

Using this Activity Book – For the Educator

This activity book is designed to supplement the information provided in the *A to Z From a Tree, Illinois Fall Colors, Illinois' Forestry Industry* and *Illinois Trees: Seeds and Leaves* posters from the Illinois Department of Natural Resources (IDNR). When using this activity book, students will become familiar with many characteristics of trees, industries related to trees and products made from trees. The information and activities included in this activity book can assist your students in meeting the Illinois Early Learning Standards listed below. Although it is not necessary to have a copy of the posters named above in order for students to complete the activities, the posters are available through the IDNR Publications page at http://www.dnr.illinois.gov/Publications.

Targeted Grades:

prekindergarten through three

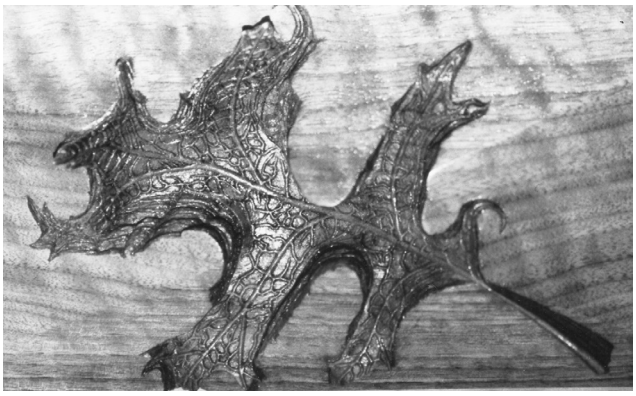
Illinois Early Learning Standards Supported:
science: 12.A.ECa, 12.A.ECb, 12.C.ECa

Supplement to:

A to Z From a Tree poster
llinois Fall Colors poster
Illinois' Forestry Industry poster
Illinois Trees: Seeds and Leaves poster

Scientific Names

The scientific name is the official name for each living thing. It is made up of two parts: the genus name (written first) followed by the species name. Your scientific name is *Homo sapiens*. The scientific name is always written in Latin. When written or printed, it is either in italics or underlined. Scientific names help scientists to communicate. In this activity book, the first time a living thing's common name is used, its scientific name is also shown (in parentheses).



Wood carving artwork of leaf on cover courtesy of Springfield artist Ken Blankenberger.

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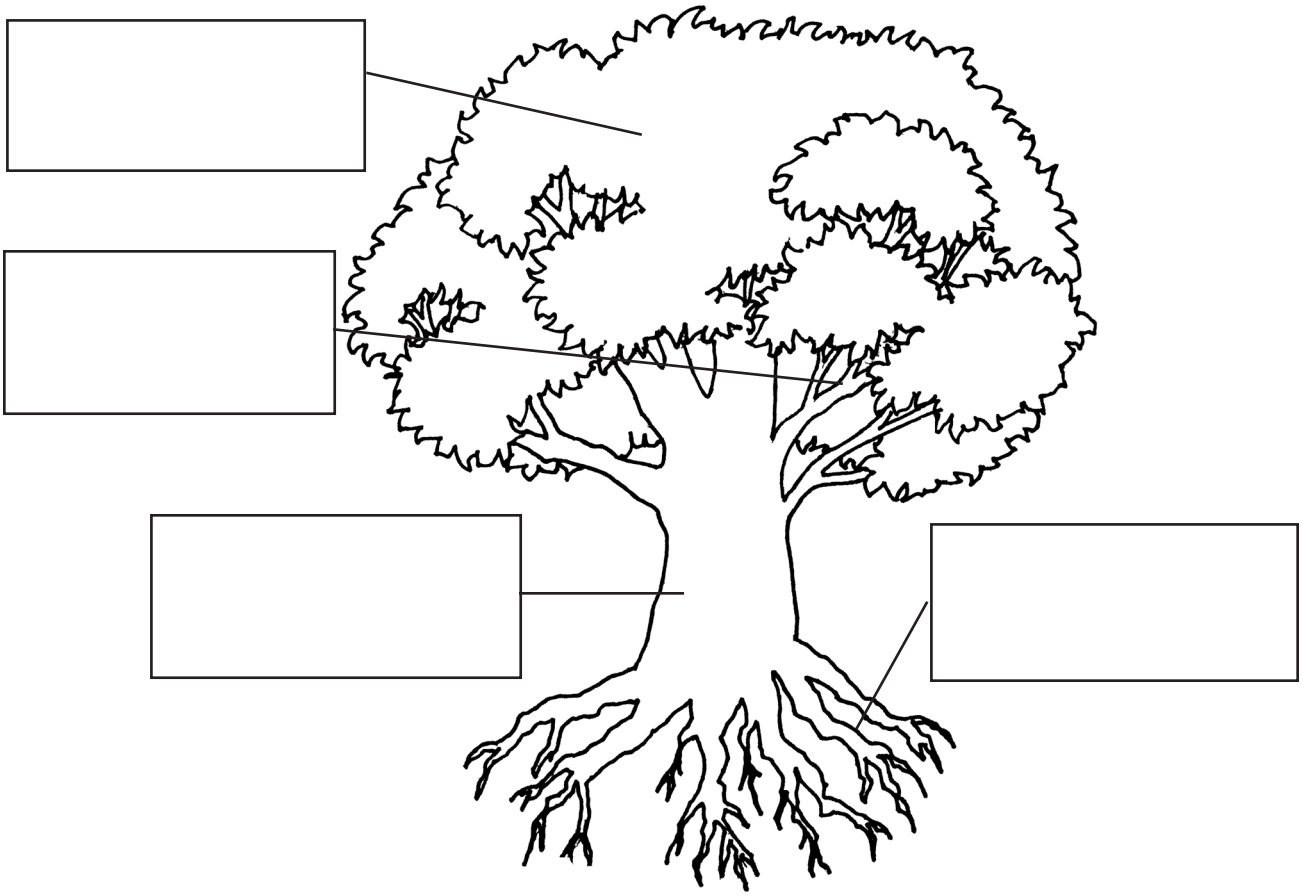
Tree Time

Trees are found in all parts of Illinois. They grow in cities and in the country. Trees are plants that can be very large and live for a long time. They have roots in the ground. Their leaves, branches and trunk are above ground. The trunk is a hard part that supports the tree. The leaves make the food for a tree.

Label the trunk, roots and leaves on this tree. Find a branch and label it, too.



Write a sentence to say what you know about trees.

Illinois' Trees

Think about the trees you have seen in Illinois. How many types of trees in our state do you know? Write the number here. _____

There are actually more than 250 types of trees growing in Illinois! Some are native to Illinois. They grow here naturally. Some are not native. They have been brought to Illinois from other places.

We have a tree to represent our state, too. It is called our State Tree. The white oak (*Quercus alba*) is Illinois' State Tree. It can get very large. It produces a lot of shade, and its acorns are good food for wildlife. White oak wood is used for lumber, furniture and other products. Color this white oak leaf.

white oak

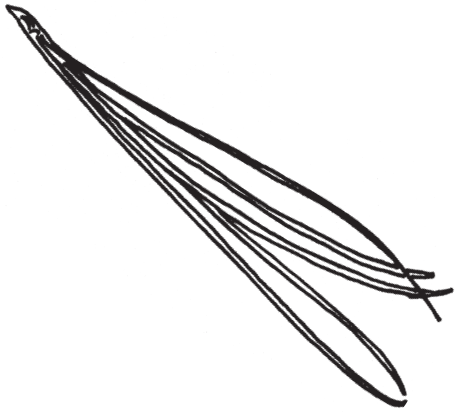
Let's learn about some other trees that grow in Illinois.

baldcypress

The baldcypress (*Taxodium distichum*) grows in swamps and wet places. It has leaves that look like needles. These leaves turn brown and drop from the tree in the fall. This tree can grow to more than 100 feet tall.

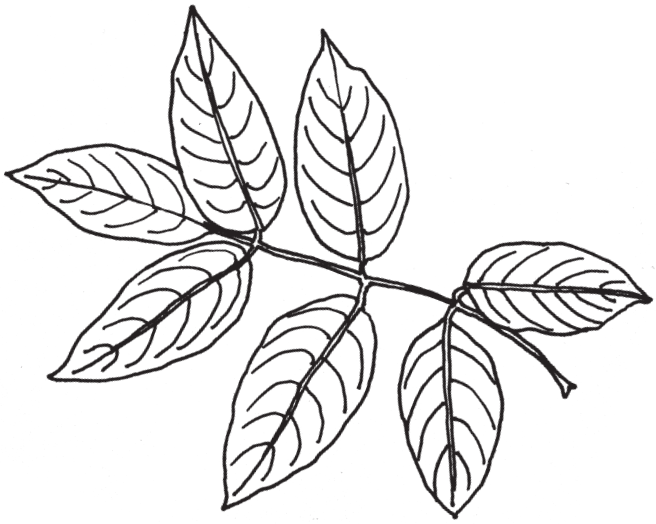
eastern white pine

The leaves of the eastern white pine (*Pinus strobus*) grow in bundles of five. These long, thin, blue-green leaves are called "needles." Pine trees have leaves all year long. The eastern white pine can grow to more than 100 feet tall.



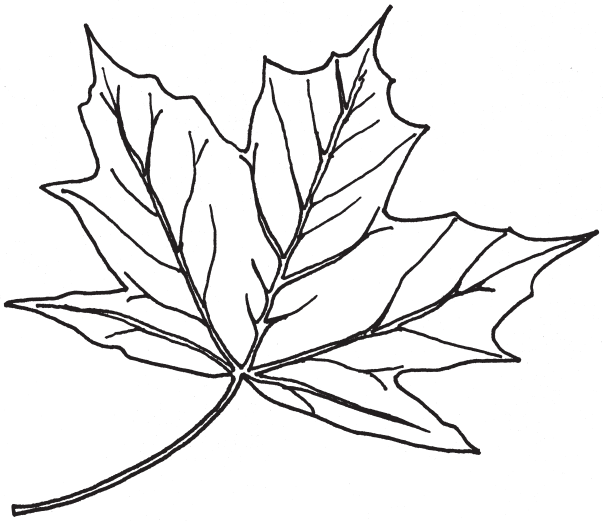
white ash

The white ash (*Fraxinus americana*) can be about 100 feet tall. It grows around rivers and in woods. Its leaves are made of several leaflets (see pages 6-7). The strong wood of this tree is used to make many products, including furniture, tool handles and baseball bats.



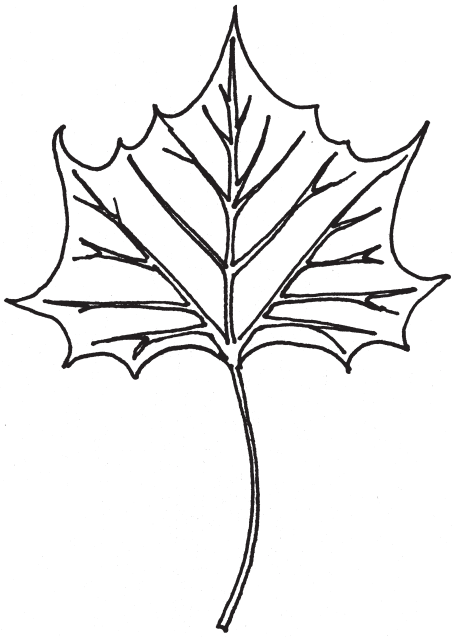
sugar maple

The sugar maple (*Acer saccharum*) got its name from its sap that is used to make maple syrup. This tree can grow to about 80 feet tall. Its leaves turn orange, red or yellow in the fall before they drop from the tree.



sycamore

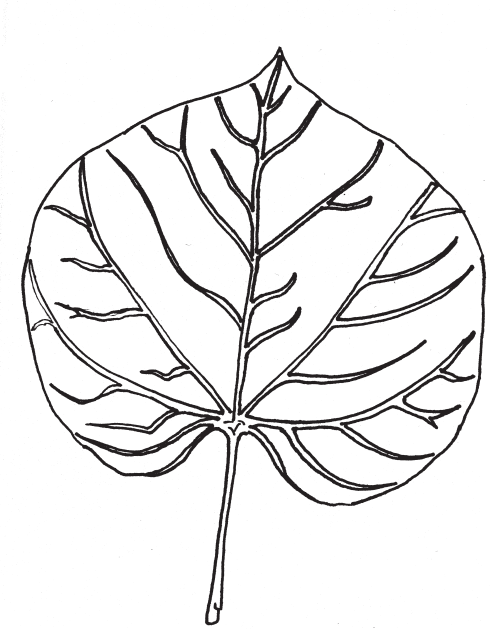
The red-brown bark of the young sycamore tree (*Platanus occidentalis*) flakes off when it gets older. The white inner bark of the tree can then be seen. The sycamore tree grows near water. It can be more than 100 feet tall.



Know the Leaves

A leaf can often be used to identify a tree. You need to know the types of leaves to help you identify them. The thin leaves of pines look like needles. You saw these leaves on page five. Other leaves are either simple or compound.

A simple leaf has only one main part. This part attaches by a stalk to the branch. Oaks, sycamores, maples, redbuds (*Cercis canadensis*) and sweetgums (*Liquidambar styraciflua*) are just some of the trees with simple leaves.

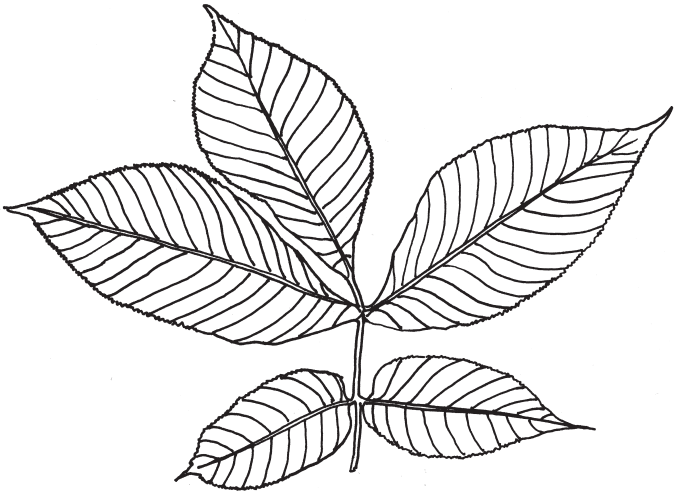


A compound leaf has many small leaflets. Each leaflet attaches to a stalk. The stalk attaches all of the leaflets to the branch. Compound leaves are found on ash, hickory, black walnut (*Juglans nigra*), locust and other kinds of trees.

Circle the simple leaves. Draw a box around the compound leaves.

pin oak
(*Quercus palustris*)

shingle oak
(*Quercus imbricaria*)



shagbark hickory
(*Carya ovata*)

pecan
(*Carya illinoinensis*)

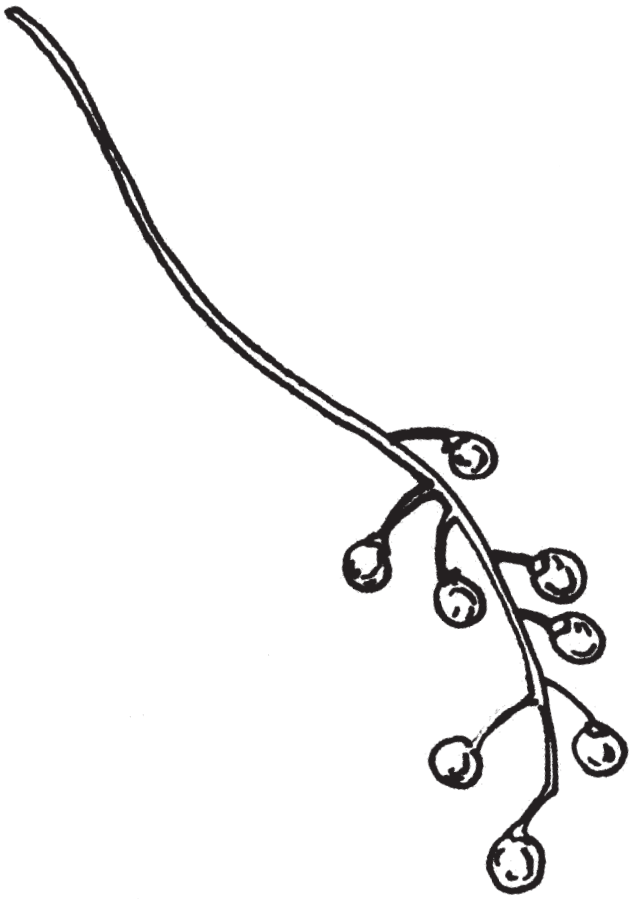
Draw a pine needle.

Tree Transport

Trees produce seeds in order for more trees to grow. Trees can't move from place to place, but they need their seeds to be able to move. If the seeds fall next to the parent tree, they will have to share food, water, space and sunlight in order to grow. None of the trees will be able to grow well. Tree seeds can't move on their own. They need help from wind, water and animals.

Fruits

Fruits are protective covers that contain seeds. You probably have eaten the fruit of an apple tree (*Malus pumila*). You know that there is a soft outer part with the seeds inside. In nature, if an animal eats an apple, it eats the seeds, too. The animal can break down the soft part of the apple but not the seeds. Black cherry (*Prunus serotina*) and persimmon (*Diospyros virginiana*) trees have soft fruits with seeds inside. Animals like to eat these fruits.

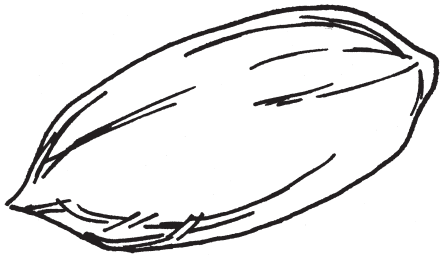


black cherry
(*Prunus serotina*)

persimmon
(*Diospyros virginiana*)

Nuts

Some fruits are called “nuts.” A nut has a hard shell with a single seed inside. Most nuts are good food for animals. As an animal carries a nut away, it may drop it. For example, if a bird picks up an acorn and flies away, the acorn may slip from the bird’s beak in flight. It has moved the seed away from the parent tree. A squirrel may bury acorns in the fall and not return to eat all of them. The squirrel has moved the acorns and planted them, too!



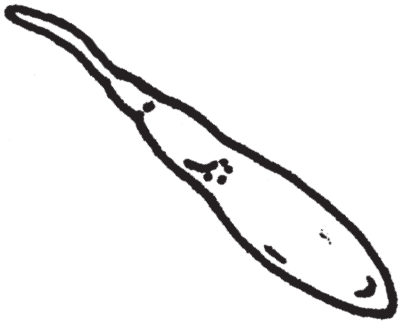
pecan

white oak

Winged Fruits

“Wings” on seeds help the wind to carry them away. Sometimes they land in a river or stream. Water can take them even further from the parent tree.

sugar maple



white ash

Color Change

Fall is a beautiful time of year in Illinois. Leaves change color from green to red, yellow, purple, brown and orange. Do you know why leaves change color?

There are several things that happen to make leaves change color.

In the fall, with each passing day the amount of sunlight gets less. The sun is not as high in the sky as it is in summer, either. There is a chemical in leaves that makes food for the tree. The chemical is called chlorophyll. It gives leaves their green appearance. As the amount of daylight gets shorter in fall, chlorophyll starts to disappear. Other chemicals in the leaves now show up.

In some tree leaves, food is produced on bright, sunny fall days. The food may not be moved out of the leaves to the other parts of the plant as fast as it is in summer, though. The more food trapped in the leaves, the more colorful they are.

Weather helps to determine how colorful leaves will be. Plenty of rainfall in the summer helps trees to have healthy leaves. Healthy leaves have beautiful fall colors. Bright, sunny skies in late summer and early fall help to make red, yellow and orange leaf shades. Having many cloudy days in late summer and early fall may lead to more gold and yellow fall colors.

Leaf color can also be affected by the type of soil the tree is growing in. If there is not much rain in the fall, the leaves may drop from the trees without changing color. If temperatures get too cold, leaves may die without changing color.

Let's Review

Fill in the blanks with the letters needed to make the correct word.

1. Leaves change c ____ l ____ ____ in the fall.

2. The colors that leaves change to include ____r a ____ ____e, ____e____ and ____e ____ ____o____.

3. W____ ____ t____e ____ can affect leaf color.

4. A c ____e____ ____ c a ____ called chlorophyll makes food for the leaves and causes them to appear green.

5. Leaf color can be controlled by the type of s ____ ____l that a tree grows in.

Write your answers on the lines.

6. If there is a lot of rainfall in the summer, and a lot of sunshine in early fall, should trees have many colorful leaves?

_____

7. What are two reasons that leaves might not change color at all?

_____

8. Tell about a beautiful tree that you have seen in fall.

_____

_____

_____

_____

_____

_____

_____

Color Fall

Trees in Illinois that have red, orange and red-brown leaves in fall include red oak (*Quercus rubra*), sugar maple, flowering dogwood (*Cornus florida*), persimmon and sweetgum.

Trees with leaves that turn bright orange and yellow include sugar maple, cottonwood (*Populus deltoides*), black cherry, ash, buckeye, birch, hickory, sassafras (*Sassafras albidum*) and yellow-poplar (*Liriodendron tulipifera*).

Color each of the leaves on these two pages with one of its correct fall colors.

sweetgum

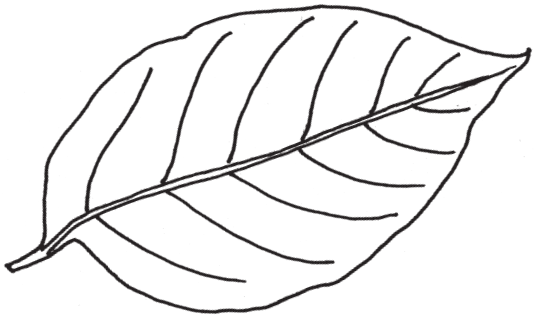
The star-shaped leaves of this tree make it easy to identify.

sassafras

Sassafras leaves grow in three different shapes.

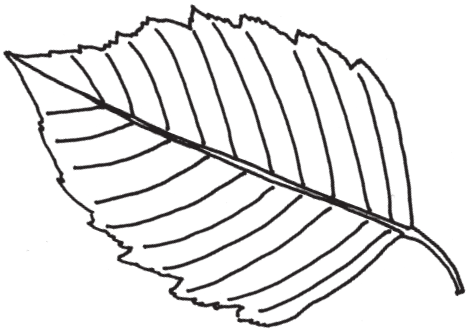
yellow-poplar

The flowers of this tree look like tulips.



flowering dogwood

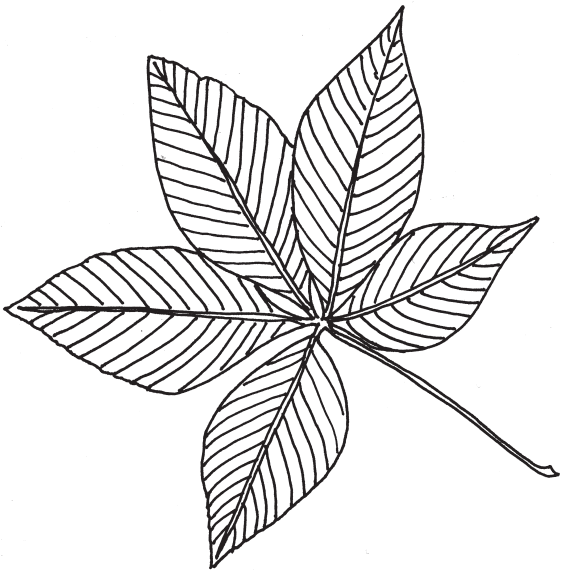
Dogwood trees are often grown in yards for their beauty.



river birch

(*Betula nigra*)

The river birch grows along rivers and streams and has red-brown bark that peels from the trunk.



Ohio buckeye

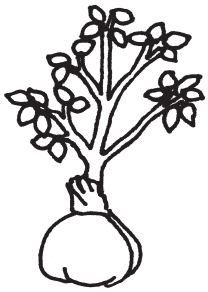
(*Aesculus glabra*)

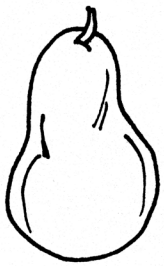
The Ohio buckeye grows in woods and is used to make paper pulp.

Forest Uses

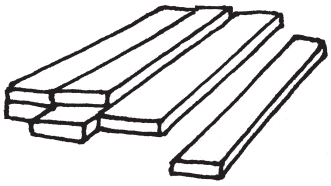
Forests and trees help us in many ways. They provide homes and food for wildlife. They put oxygen into the air. They help stop erosion. They can block the wind and provide shade for cooling. They can hold water in the soil. Forests are places we like to visit. Forests and trees are also important to the jobs of some people in Illinois.

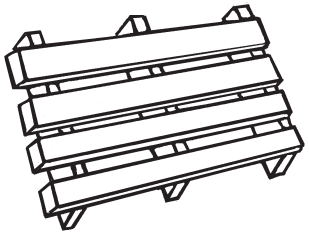
One type of forestry industry is to grow trees. Tree nurseries grow trees that people can buy to plant in their yard. Christmas trees are raised on tree farms. People buy these trees to use in their homes during the winter holiday season. Trees may be grown so that they can be cut down and used to make products. Pears (*Pyrus communis*), pecans, walnuts and apples are a few of the products we obtain from trees grown to raise food.

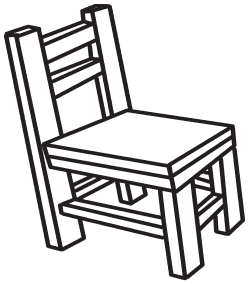




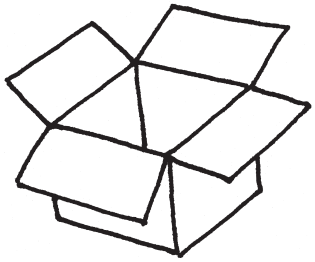
Some Illinois companies make products from trees. Lumber, wooden tool handles, wooden pallets, furniture and kitchen cabinets are produced from trees. Sawmills provide jobs to people, too. Sawmills turn trees into lumber.

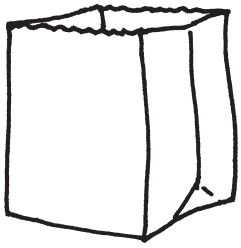




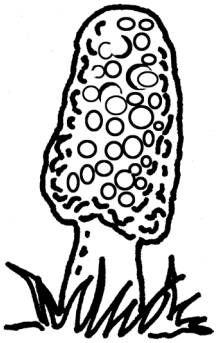


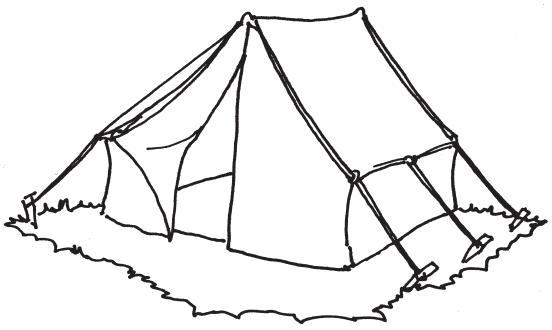
Paper is made from trees, and paper is made into many other products. Making paper and all the other items from it gives jobs to people in Illinois. Envelopes, cardboard boxes, paper bags and writing paper are some of the items produced from paper.





Forests are related to jobs through recreation. People like to go to the forest to hunt, fish, camp and hike. They like to find morels and nuts in the forest. How are jobs related to these activities? Stores sell camping, hunting and fishing equipment. They sell books to help you learn about what you see when you hike. Conservation officers work in the forest to make sure that laws are not being broken. What other jobs can you think of that are related to forests?





_____ _____ _____

Label each of the pictures. Use the terms listed below.

boards	cardboard box	chair
envelope	hiker	morel
pallet	paper bag	pear
tent	tree sapling	walnut

About 68,000 people in Illinois work in jobs that relate to forests. These industries sell more than $29 billion dollars of products each year. Here are more facts about forestry industries. For each item listed below, rank the numbers from highest (1) to lowest (3).

Number of Jobs		Rank
forestry	743	_____
lumber and wood products	16,430	_____
paper products	50,874	_____

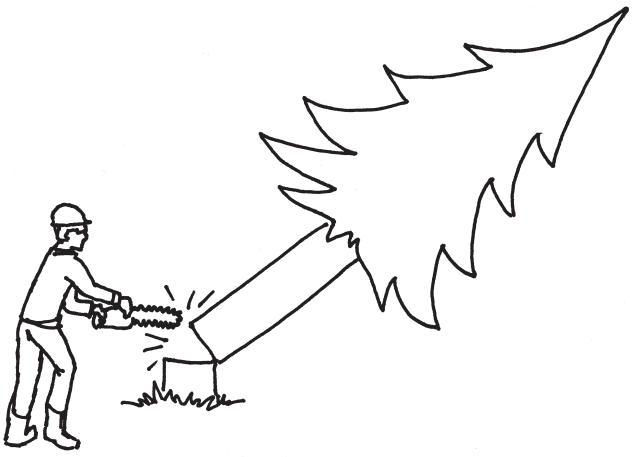
Number of Businesses		Rank
forestry	148	_____
lumber and wood products	1,177	_____
paper products	707	_____

Making a Product

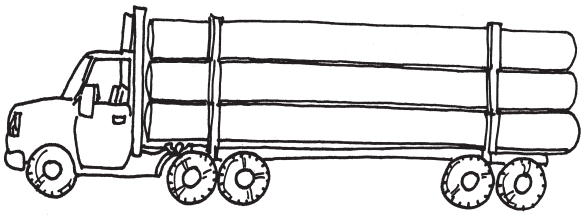
Did you ever wonder how a tree becomes a product that you use? Here's how some Illinois businesses are involved in the process of turning trees into molding. Molding is a trim added to walls and furniture.

1. A landowner has trees for sale.

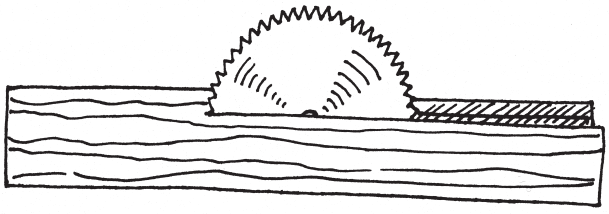
2. A person who buys trees comes to visit. The buyer offers the landowner a price. If the landowner agrees, the trees are sold.



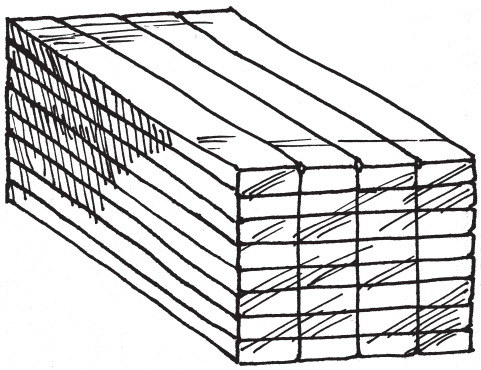
3. A logging crew comes to cut down the trees.



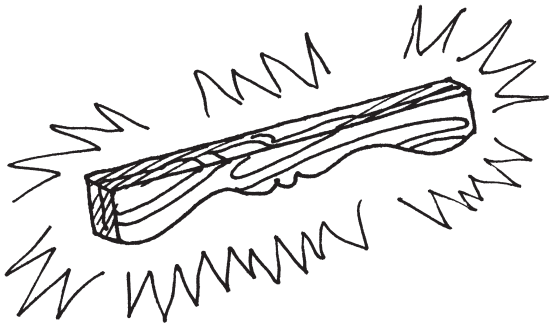
4. The logs are taken to a sawmill.



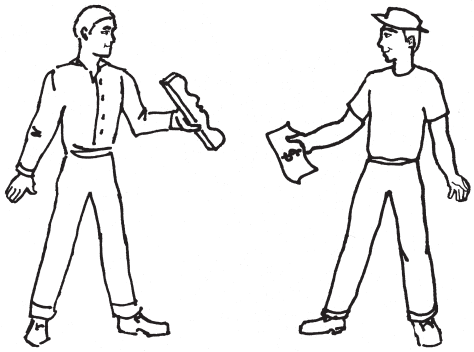
5. At the sawmill, the logs are cut into lumber.



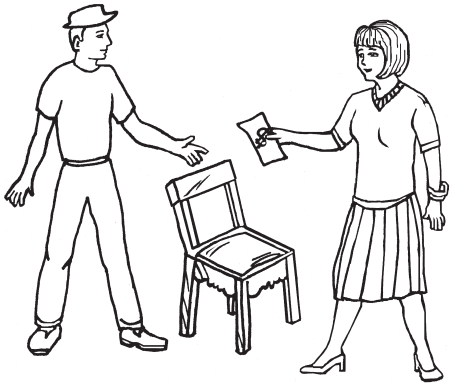
6. The boards are dried.



7. Now the boards are formed into molding.



8. The molding is sold to people who make furniture.



9. The furniture is sold to people who sell furniture.

10. People buy the furniture and use it.

11. The landowner plants more trees to replace those that were cut down.

What Do You Think?

What would happen if the landowner did not plant more trees to replace those that were cut down?

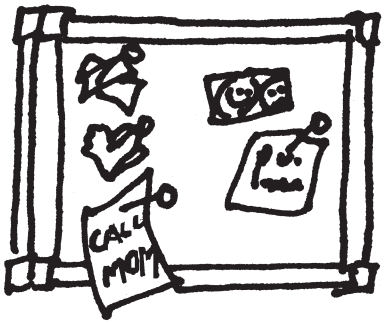
Tree Products

Did you know that hundreds of products are made from trees? It's true. These products come from every part of a tree. Many products are made from cellulose. Cellulose makes up the cell walls of plants. It is also the hard part of wood.

Here are some examples of tree products.

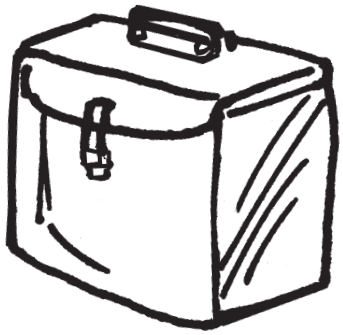
Bark

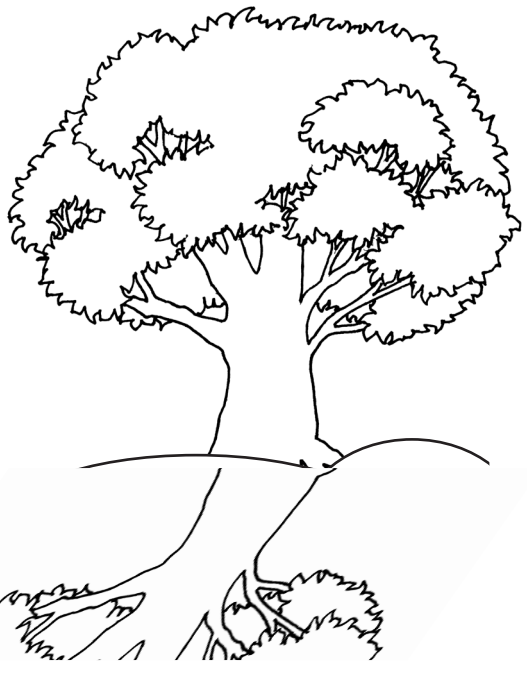
animal bedding
bulletin board
drugs
garden mulch
glue
inner core of baseballs
oils
shoe polish



Cellulose

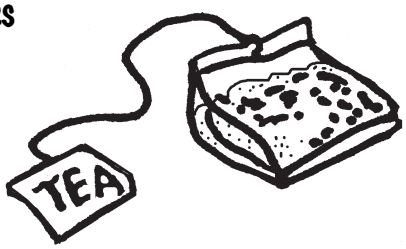
carpets
cosmetics
eyeglasses frames
film for cameras
floor tiles
football helmets
hairbrush handles
hard hats
luggage
plastic
suntan lotion
tool handles
toothpaste





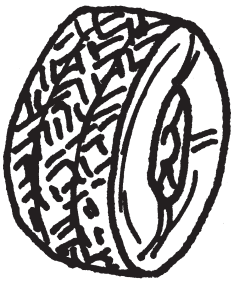
Roots and Leaves

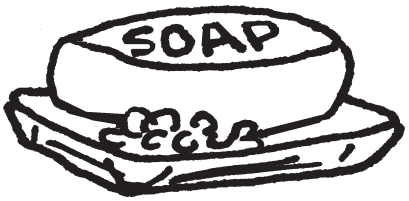
oils
oxygen
shade
teas



Sap and Gum Products

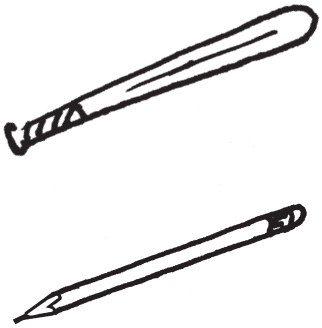
chewing gum
crayons
drugs
dyes
fireworks
glue
paint
perfume
rubber tires
soap
sugar and syrup

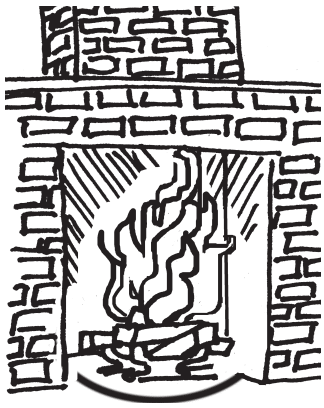


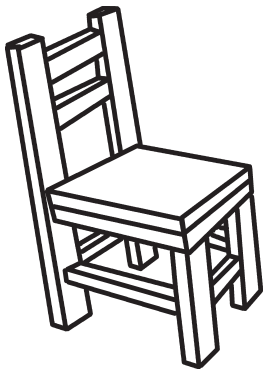


Solid Wood Products

barrels
baseball bats
baskets
charcoal
fence posts
firewood
furniture
guitars
lumber
pencils
toothpicks

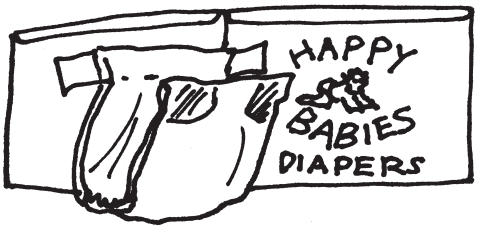


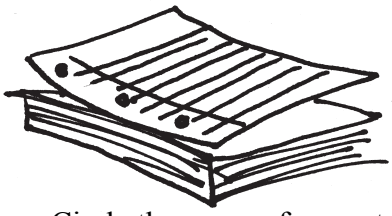




Wood Pulp Products

books
cardboard boxes
disposable diapers
newspapers
notebook paper
paper towels
paper plates
postage stamps
tissues
toilet paper





Look at the lists of items above. Circle the name of every tree product that you have used today. Underline the name of every tree product that you have used in the past week.

List three other tree products that you have used in the past week.

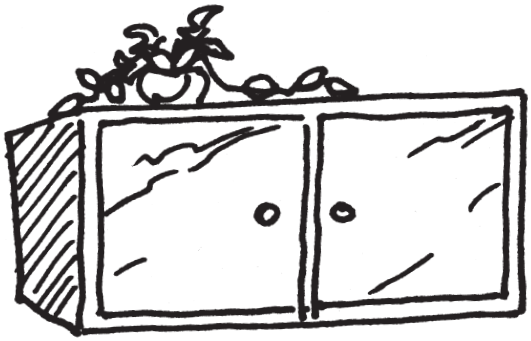
1. _____

2. _____

3. _____

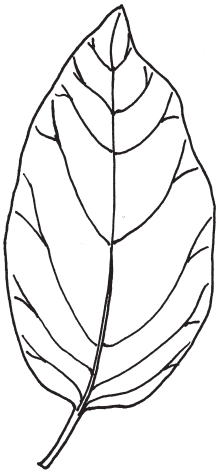
Illinois Trees and Their Products

Tree products are important to people and to wildlife. The trees named on these two pages are commonly found in Illinois. Read about the items that these trees provide for people and wildlife.



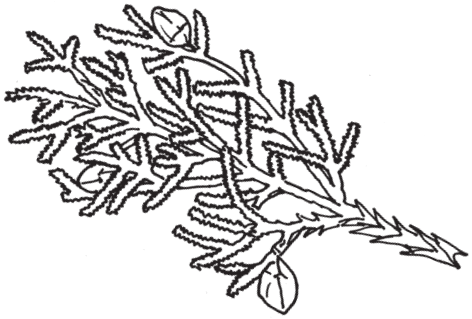
black walnut

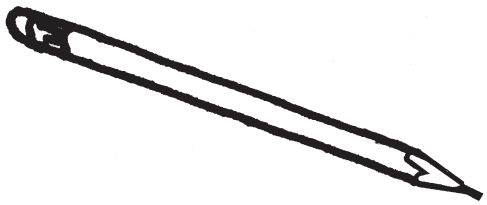
The wood is used in furniture and cabinets. The nuts are eaten by people and wildlife.



persimmon

Golf club heads and pool cue sticks are made from the wood. The fruits are eaten by people and wildlife.





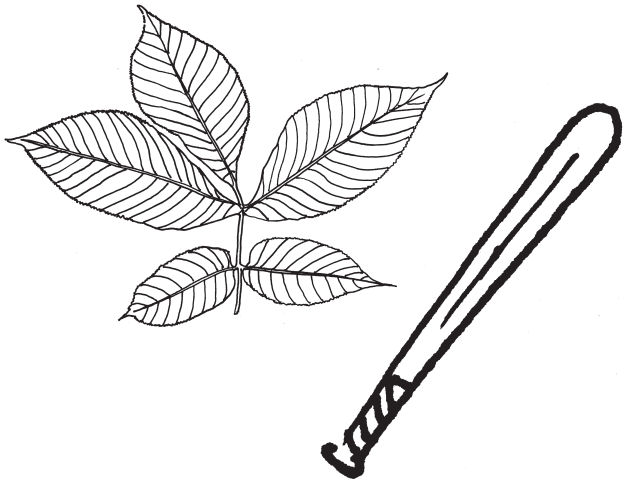
eastern redcedar

(*Juniperus virginiana*)

Eastern redcedar wood is used to make clothing chests, pencils and fence posts.

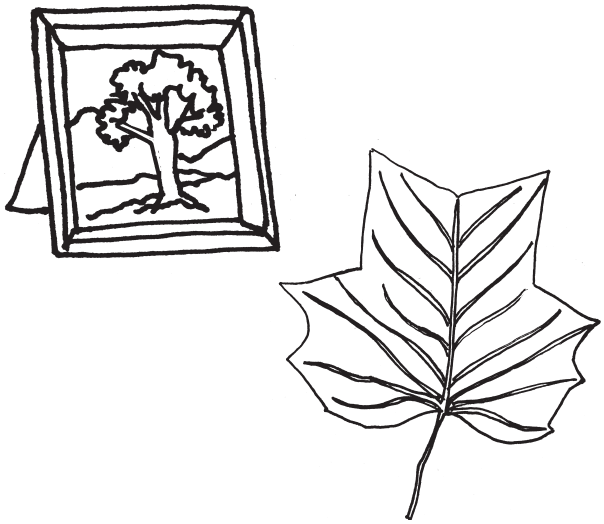
sassafras

The roots of this tree are used to make tea. The wood is turned into fence posts. It is often planted in yards for its beauty and to provide shade. Its fruits are eaten by wildlife.



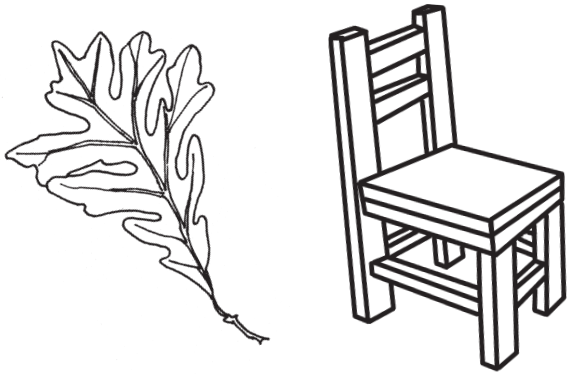
shagbark hickory

Hickory wood is used in tool handles, baseball bats and to produce chips to burn and add flavor to grilled meats. The nuts are eaten by people and wildlife.



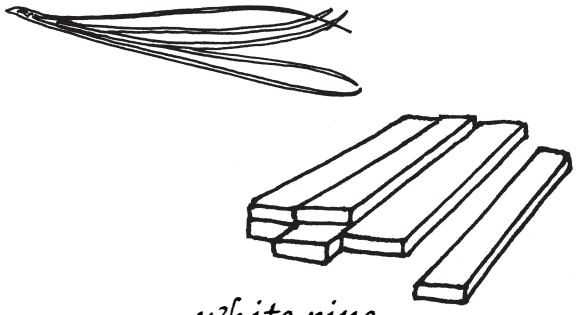
yellow-poplar

Yellow-poplar wood is used to make canoes, picture frames and lumber. The tree is planted in yards for its beauty and shade. Wildlife eat its seeds.



white oak

Lumber, furniture, fence posts, barrels, cabinets and flooring are just some of the products made from white oak wood. This tree is often planted for its beauty and shade. The nuts are good food for wildlife.



white pine

White pine wood is used to make lumber. These trees are also planted for their beauty and for the shade they provide. Their seeds are eaten by wildlife.

Think About It

1. List three things that would happen if we didn't have trees.

_____

_____

_____

2. How can we make sure that we always have trees?

_____

_____

Test Yourself

Let's see what you've learned from this book. Circle the correct answer to each question.

1. What is a tree? A tree is _____.

an animal | a mushroom | a plant

2. How long do trees live? Trees can live for _____.

many years | only one year | only 10 years

3. Trees have many parts. Their main parts are the leaves, branches, roots and _____.

spine | trunk | petals

4. The trunk of a tree is _____.

woody | soft | below ground

5. A tree can grow to _____.

one foot tall | 20 feet tall | more than 100 feet tall

6. A tree makes its own food. The green part of a tree makes the food. What is that green part?

leaf | trunk | branch

7. Trees have either simple or compound leaves. If a leaf is made of one main part, it is _____.

compound | simple

8. Trees need help moving their seeds. Which of the following choices does not help tree seeds move away from the parent tree?

wind | fire | animals

9. Which of the following choices does not affect the color of fall leaves?

amount of snowfall in winter | amount of rainfall in summer | type of soil

10. What is Illinois' State Tree?

white ash | white pine | white oak

Answers

page 3

Answers will vary for the sentence.

pages 4-5

number: Answers will vary.

pages 6-7

pages 10-11

1) color;
2) orange, red, yellow;
3) Weather;
4) chemical;
5) soil;
6) yes;
7) not enough rainfall; temperature too cold early in the year;
8) Answers will vary.

pages 14-15

line 1) tree sapling, pear, walnut;
line 2) boards, pallet, chair;
line 3) envelope, cardboard box, paper bag;
line 4) morel, hiker, tent

Number of Jobs:

forestry - 3;
lumber - 2;
paper products - 1

Number of Businesses:

forestry - 3;
lumber - 1;
paper products - 2

pages 16-17

Answers will vary but should include the idea that we might run out of trees to use.

pages 18-19

Answers will vary.

pages 20-21

1) Answers will vary and may include the ideas that there would be no tree products, there would be less food and shelter for wildlife and people, and there would be less oxygen in the air.

2) Answers will vary and may include the ideas that we should replace what we take by planting more trees and that we should preserve our forests.

page 22

1) a plant
2) many years
3) trunk
4) woody
5) more than 100 feet tall
6) leaf
7) simple
8) fire
9) amount of snowfall in winter
10) white oak

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