



World Book's Learning Ladders

Terrific Trees



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What's inside?

This book tells you about different kinds of trees and where they grow. Trees are the largest of all plants. They help us breathe and give us food and many important things we use. This book will help you identify some trees and their parts.



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What are trees?

Trees are the world's largest plants. Plants are living things that grow and live in one place and do not move around. Like other plants, trees need water and sunlight to grow. Trees take up water from the ground through their roots. The leaves of a tree use sunlight to make food. The food helps the tree to grow.

The **crown** is made up of the tree's branches and leaves.



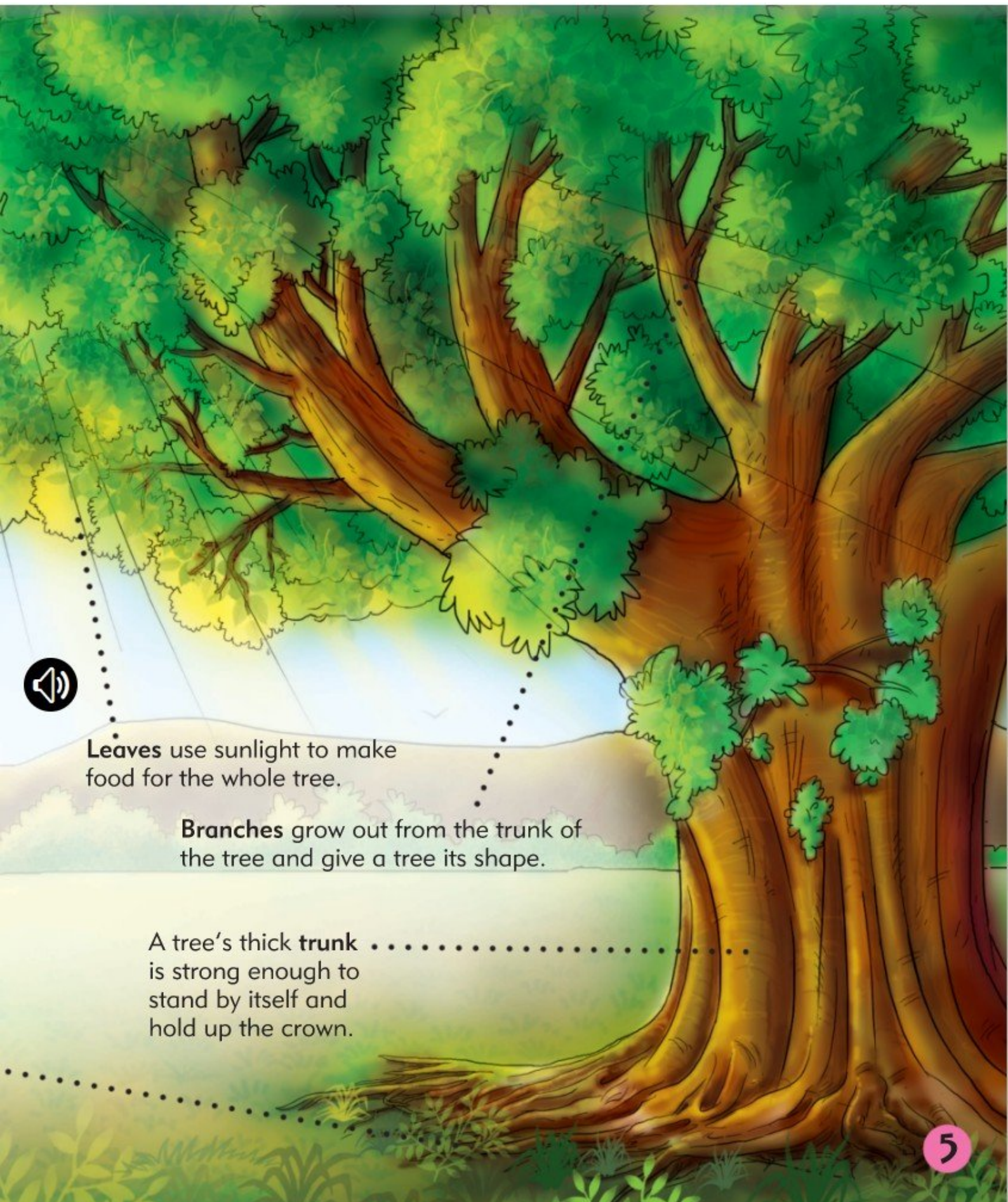
This tree has many trunks! A banyan tree can look like a small forest.

It's a fact!

A tree's underground roots can be as big as the trunk and crown that we can see.



A tree's **roots** grow down into the ground.



Leaves use sunlight to make food for the whole tree.

Branches grow out from the trunk of the tree and give a tree its shape.

A tree's thick **trunk** is strong enough to stand by itself and hold up the crown.

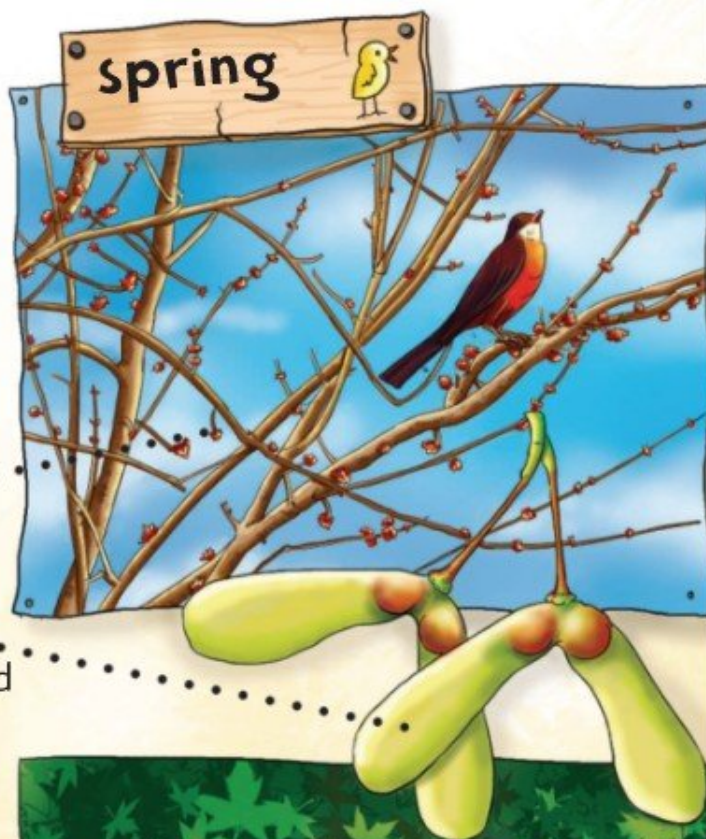


Trees with leaves

Many trees have broad, or wide, flat leaves. Ash, elm, maple, and oak trees are broadleaf trees. In the autumn, their leaves turn bright colors and fall off. The trees rest during the winter. In the spring, they come back to life, growing new leaves, flowers, and fruits.

Buds grow into leaves or flowers in the spring.

Flowers grow into **fruits** that hold **seeds**. These maple fruits, called keys, are shaped like wings. They whirl through the air like helicopters, spreading the seeds. Seeds grow into new plants.



Apple trees have beautiful **flowers** that open in spring. Other broadleaf trees have tiny flowers that you might not even notice.



In the summer, **leaves** make food for trees to grow tall.



Leaves turn beautiful colors and fall off in the autumn. We sometimes call autumn fall.



It's a fact!

The maple leaf is a symbol of the country of Canada. A red maple leaf is on the Canadian flag. Canada makes most of the world's maple syrup.



A broadleaf tree rests during the winter.



Acorns are the fruit of the oak tree. Squirrels gather acorns for food. Squirrels help to spread the oak tree's seeds.



Trees with needles

Some trees have small, narrow pointed leaves that look like needles. These trees are known as needleleaf trees. They include firs, pines, redwoods, and spruces. Many needleleaf trees grow in cold areas. They keep their needles all year round, even during winter.



Needleleaf trees do not grow flowers or fruit. Many of these trees have seeds in woody cones. The seeds are spread by the wind.



Most needleleaf trees are **evergreens**. Evergreen trees stay green all year long, even in the snowy winter.

It's a fact!

The oldest trees are California's bristlecone pines and giant sequoias (*sih KWOY uhz*). The oldest sequoias are about 3,500 years old! Some bristlecone pines have lived between 4,000 and 5,000 years!



The seeds of most needleleaf trees are held in a tree's **cones**.



Nearly all pine trees have **needle leaves** that grow in bundles.



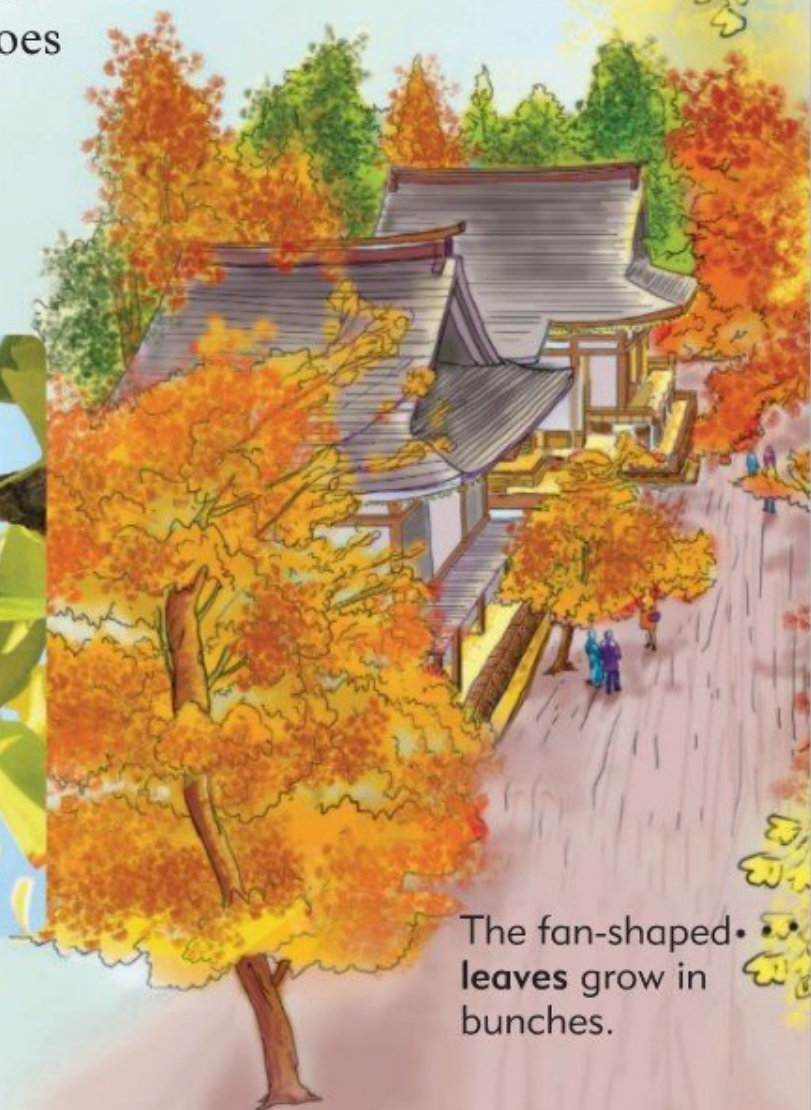
The ginkgo tree

The ginkgo (*GIHNG koh*) tree has half-circle leaves that look like small hand fans. Some people in the countries of China and Japan think of ginkgoes as very special, or sacred, trees. They plant ginkgoes in the gardens of their temples. Temples are places where people pray. Some ginkgoes alive today may be more than 1,000 years old. There is only one species, or kind, of ginkgo in the world now.

Ginkgo leaves grow at the end of short **stalks**.



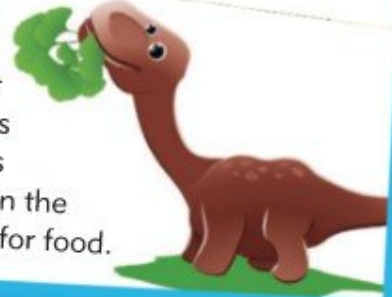
People roast and eat what is inside the ginkgo seeds.



The fan-shaped **leaves** grow in bunches.

It's a fact!

The ginkgo tree is the last survivor of a group of trees that lived millions of years ago. Many dinosaurs probably munched on the leaves of these trees for food.



The trunk is covered. . . .
by brown **bark**.



Palm trees

Palm trees grow in warm parts of the world. They can be found in deserts and on tropical islands. Most palm trees have no branches. The tree has a long, slender trunk. The trunk ends in a crown of huge leaves. The leaves are shaped like feathers or fans.

A palm tree has a long **trunk**.

It's a fact!

The largest seeds are the nuts of the coco-de-mer (koh KOH duh MAIR), or double coconut palm, of the Seychelles (say SHEHL), a group of islands in the Indian Ocean. A nut may weigh up to 50 pounds (23 kilograms).



Coconuts are the fruit of the coconut palm. Coconuts can float on the water, spreading the tree's seeds from place to place.



The date palm is an important fruit tree found in the Middle East. It grows in the desert where few plants can live.



Bunches of large, round **coconuts** grow among the leaves.

Huge **leaves** spread out at the top of the tree.



Tree ferns

Ferns are plants with feathery green leaves. Many ferns are small. But some grow into trees. Tree ferns look a bit like palm trees. Many kinds of tree ferns grow in warm, tropical places called rain forests that get plenty of rain.

A large fern leaf is called a **frond**.



Tree ferns do not make flowers or seeds. New plants grow from tiny **spores** that form on the bottom side of a fern's leaves. The spores fall to the ground and start new plants.

The long, lacy fronds of some ferns are made up of many tiny **leaflets**.





It's a fact!

Ferns grew in the great forests that covered Earth more than 350 million years ago, long before the dinosaurs lived.



Young fern leaves called **fiddleheads** uncurl as they grow.



Cycads

Cycads (*SY kadz*) are big plants that look much like large palm trees. Their leaves look like fern leaves. But cycads are not palm trees or ferns. Instead, cycads are related to other trees that make cones. There are many kinds of cycads, but they only live in a few damp, warm places of the world. Cycads may live up to 1,000 years.



Scientists have found **fossils** which show that cycads lived during prehistoric times. A fossil is the remains of a living thing that died long ago.

The cycad's long, tough **leaves** look like fern leaves.

It's a fact!

One kind of cycad is known for its bright red cones.





Heavy **cones** hold the cycad's seeds. The cones may grow up to 3 feet (90 centimeters) long!

The branchless **trunk** stands straight up.

. The **bark** is rough.

Food from trees

Many of the foods we eat grow on trees.

Apples, bananas, peaches, oranges, coconuts, and other fruits grow on trees. Other types of trees grow walnuts, pecans, almonds, and many other nuts. Coffee and cocoa are made from the seeds of trees.

The fruit from some trees have a hard seed inside called a **pit**.



Trees contain a sugary juice called **sap**. The sap of the maple tree is used to make maple syrup.



Nuts grow in a woody shell. . . .





Many delicious types of **fruit** grow on trees.



It's a fact!

Cinnamon, a popular spice used in cooking, is made from the bark of a tree.





Wood



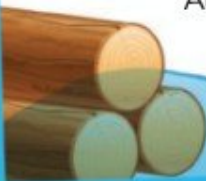
Wood comes from the trunk and branches of trees. Wood is tough, strong, and useful for many things. People work with wood to make everything from houses and tables and chairs to musical instruments and baseball bats. Which other things in the picture are made of wood?



Wood is under the bark of trees.

It's a fact!

About half of a tree's wood is made up of water.



Wooden furniture is made from trees.



Paper is made from wood pulp (ground-up wood mixed with water).

Many **musical instruments**, like this guitar, are made from wood.



Natural **rubber** is another important thing that we get from trees. Rubber is made from latex, a milky juice produced by the rubber tree.



Animals live in trees

Trees are homes for many animals. Monkeys, squirrels, and other mammals live in trees. Mammals are animals that feed their young with milk. Birds nest on tree branches or in holes in trees. Trees may also be home to insects and snakes. Look at all these animals that live in trees!



A **bat** hangs upside down from a tree branch to rest.

Many kinds of animals live in trees in a warm **rain forest**.

It's a fact!



The sloth is a slow-moving mammal of South America that lives in trees. Sloths crawl upside down in trees. They even fall asleep hanging upside down!



Fallen tree leaves make a layer on the ground called leaf litter. Leaf litter makes a home for such small animals as salamanders.

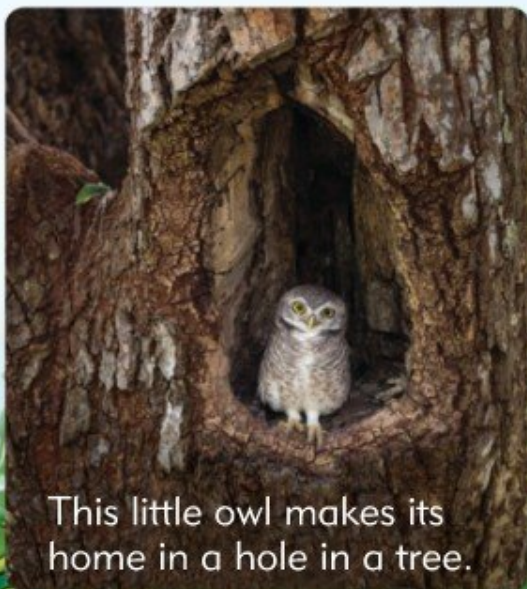


A **monkey** can run, jump, or just sit among tree branches.

A **parrot** uses its feet to grab fruits and nuts and to climb trees.

Many kinds of **insects** and spiders make their homes in trees. They find their food in trees, too.

A **snake** coils its body as it climbs a tree.

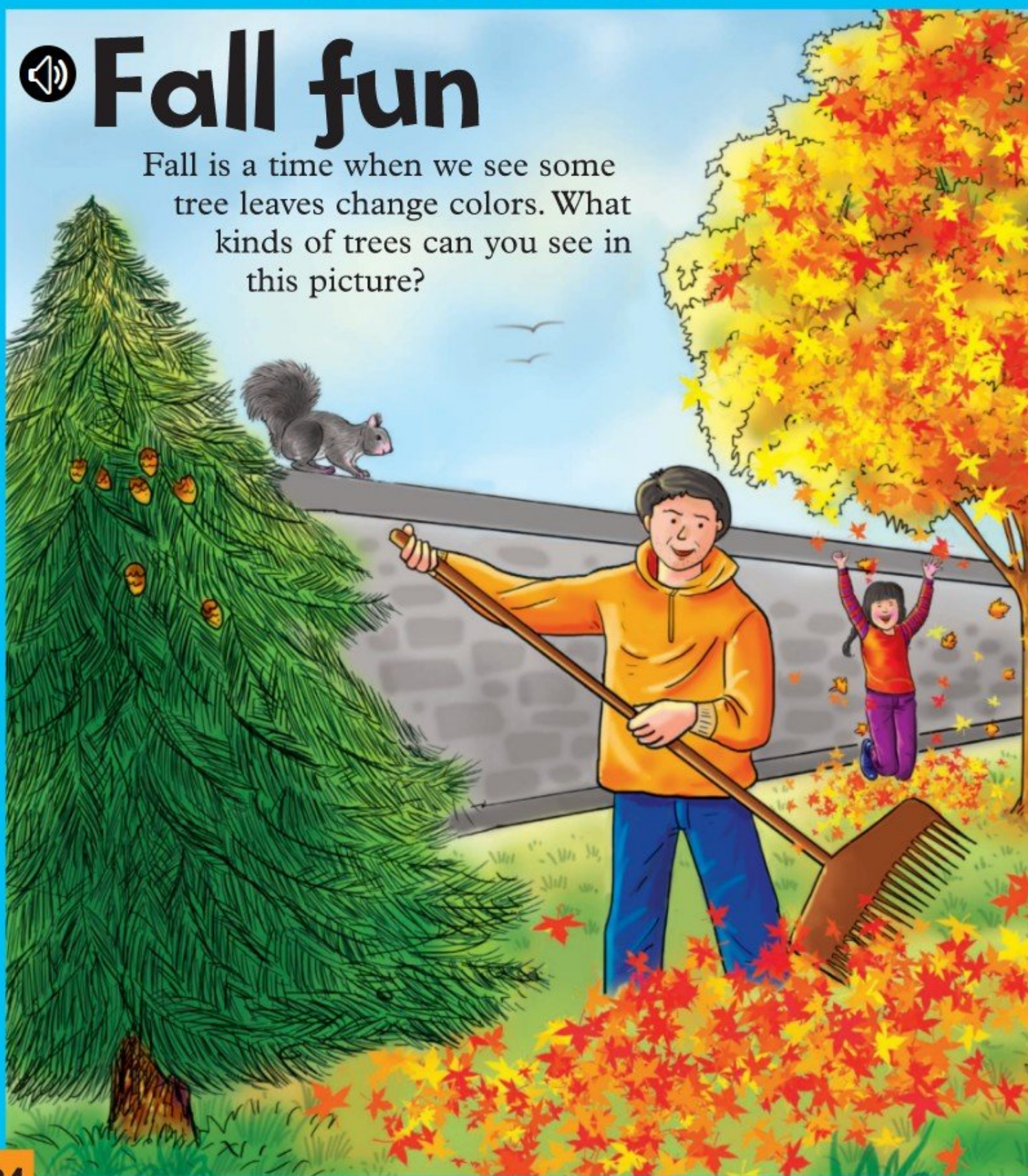


This little owl makes its home in a hole in a tree.

How many cones do you see?

Fall fun

Fall is a time when we see some tree leaves change colors. What kinds of trees can you see in this picture?



Which things come from trees?

What are the children doing?

What are the grown-ups doing?



Words you know

Here are some words that you learned earlier. Say them out loud, then try to find the things in the picture.

trunk
evergreen
fruit

leaves
cone
bark

Where is the squirrel?



What kind of fruit do you see?



Did you know?

Trees help to clean the air. They absorb, or take in, a gas called carbon dioxide and release, or give off, oxygen, the gas that people breathe.



The traveler's tree of the African island country of Madagascar (*MAD uh GAS kuh*) is a tropical evergreen. It collects rainwater at the bottom of its long leaf stalks. It is called the traveler's tree because thirsty travelers can drink the water.

Many trees grow by adding a ring of new wood to their trunk each year. Scientists can count the rings to figure out how old a tree is.





The world's tallest living tree is the coast redwood. These trees grow along the west coast of the United States from central California to southern Oregon. This type of tree can grow taller than a 30-story building.



The baobab (*BAH oh bab*) tree of Africa is one of the most useful trees. It has a huge trunk, which people hollow out to store water in or to live in. They eat the tree's leaves, fruit, seeds, and roots and use its parts in many other ways.



The thickest tree trunk is that of a Montezuma baldcypress near Oaxaca (*wah HAH kuh*), Mexico. It is more than 40 feet (12 meters) around.

Puzzles

Close-up!

We've zoomed in on parts of three different kinds of trees. Can you figure out what you are looking at?



Answers on page 32.

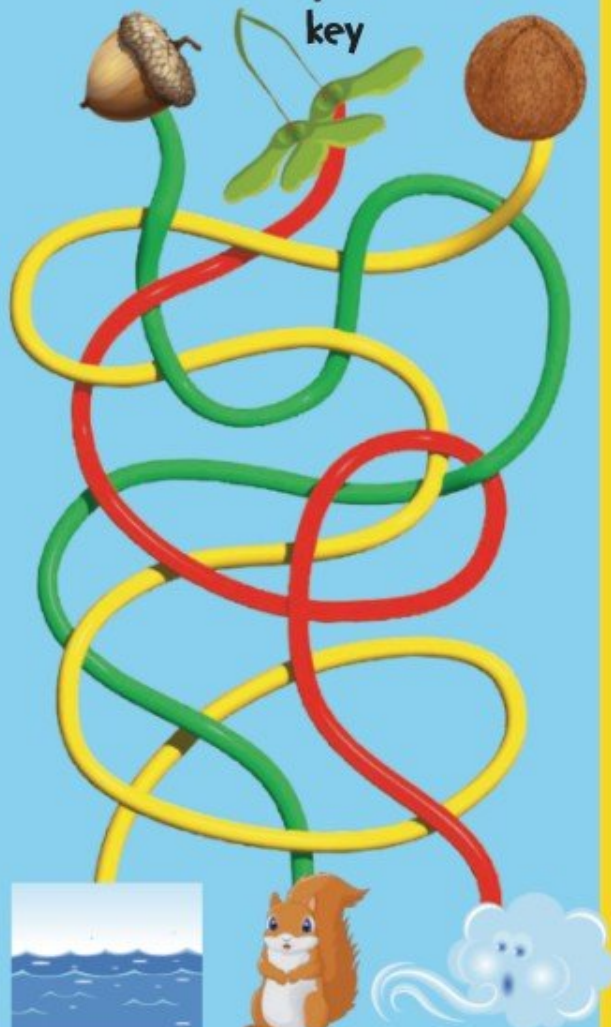
Spreading the seeds!

Can you connect each type of tree seed to the thing that helps spread the seeds? Follow the lines to help you!

acorn

maple
key

coconut



water



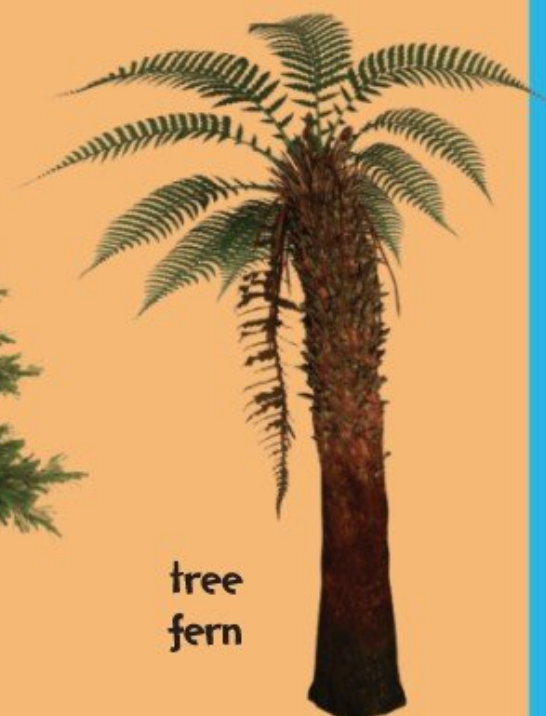
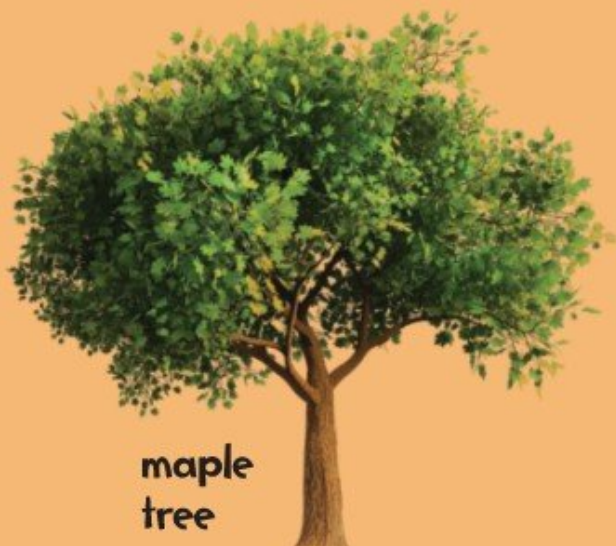
squirrel



wind

Which tree?

1. Which tree has the heaviest seeds?
2. Which tree has needles?
3. Which tree loses its leaves each year?
4. Which tree has young leaves that look like the ends of fiddles?



Answers on page 32.

True or false

Can you figure out which of these statements are true? Go to the page numbers given to help you find the answers.

1

Palm trees grow where it is cold.
Go to page 12.



4

Tree ferns grow from seeds.
Go to page 14.



5

Needleleaf trees lose their needles in the fall.
Go to page 8.



2

Cycads are a type of palm tree.
Go to page 16.



3

Trees make food from sunlight.
Go to page 4.



Answers on page 32.

Find out more

Books

Forest Life and Woodland Creatures by Dorling Kindersley Publishing Staff (Dorling Kindersley, 2017)

Packed with fun activities, crafts, reading games, and amazing facts, kids can meet all the cuddly creatures and amazing sights found in the woods—from bunnies to bears to bugs—in this educational project book.

Rainforests by Kate Riggs (The Creative Company, 2017)

A kindergarten-level introduction to rain forests, covering their climate, plant and animal life, and such defining features as their tall trees.

Trees in Fall by Jenna Lee Gleisner (Child's World, 2017)

Readers are introduced to the concept of weather, how it changes in fall, and what its changes mean for trees and their leaves. Includes sources for further research.

Woodland and Forests by Dorling Kindersley Publishing Staff (Dorling Kindersley, 2017)

Become a nature explorer and find out what to look for when you walk in the woods. Discover the amazing animals that live among the trees. Find out about the different types of forest.

Websites

The Life of a Tree

<https://www.arborday.org/kids/carly/lifeofatree/>

This website from the Arbor Day Foundation helps kids learn about trees. It includes games, classroom activities and lesson plans, and a reading list.

Rainforest Conservation Fund

<http://www.rainforestconservation.org/>

This website from the Rainforest Conservation Fund works to ensure the future of tropical rain forests.

USDA Forest Service

www.discovertheforests.org

This website from the United States Department of Agriculture is a guide to parks and forests in the United States. Its goal is to inspire youth to re-connect with nature. It has activities for kids and information for teachers.

What Tree Is That?

<https://www.arborday.org/trees/whattree/>

This illustrated field guide from the Arbor Day Foundation helps you identify trees using a step-by-step process by region.

Answers

Puzzles

from pages 28 and 29

Close-up!

1. maple key
2. pine tree needles
3. tree fern fiddlehead

Which tree?

1. palm tree
2. pine tree
3. maple tree
4. tree fern

True or false

from page 30

1. false
2. false
3. true
4. false
5. false

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