LEVELED BOOK • P

About Trees

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People look tiny when standing next to giant sequoias.

Introduction

Trees are the tallest living plants. Redwood trees can grow as tall as a 30-story building. Giant sequoias can weigh as much as 3,000 large pickup trucks, making them one of the heaviest living things. Trees also live a long time. Many trees alive today were full-grown long before the United States became a country. But these massive trees share something with all plants—they make their own food.

Leaves

Imagine being able to make your own food without cooking or even going to a restaurant! Leaves make food for trees by changing energy from sunlight into food. This important work is done by **chlorophyll** (KLOR-uh-fill), the green coloring in leaves.

Leaves come in all shapes and sizes. Most **deciduous** (dee-SIJ-oo-us) trees have wide, thin leaves, while most conifers have needlelike leaves. **Conifers** keep their needles through all seasons. Only the oldest needles fall to the ground. Deciduous trees lose their leaves every fall.

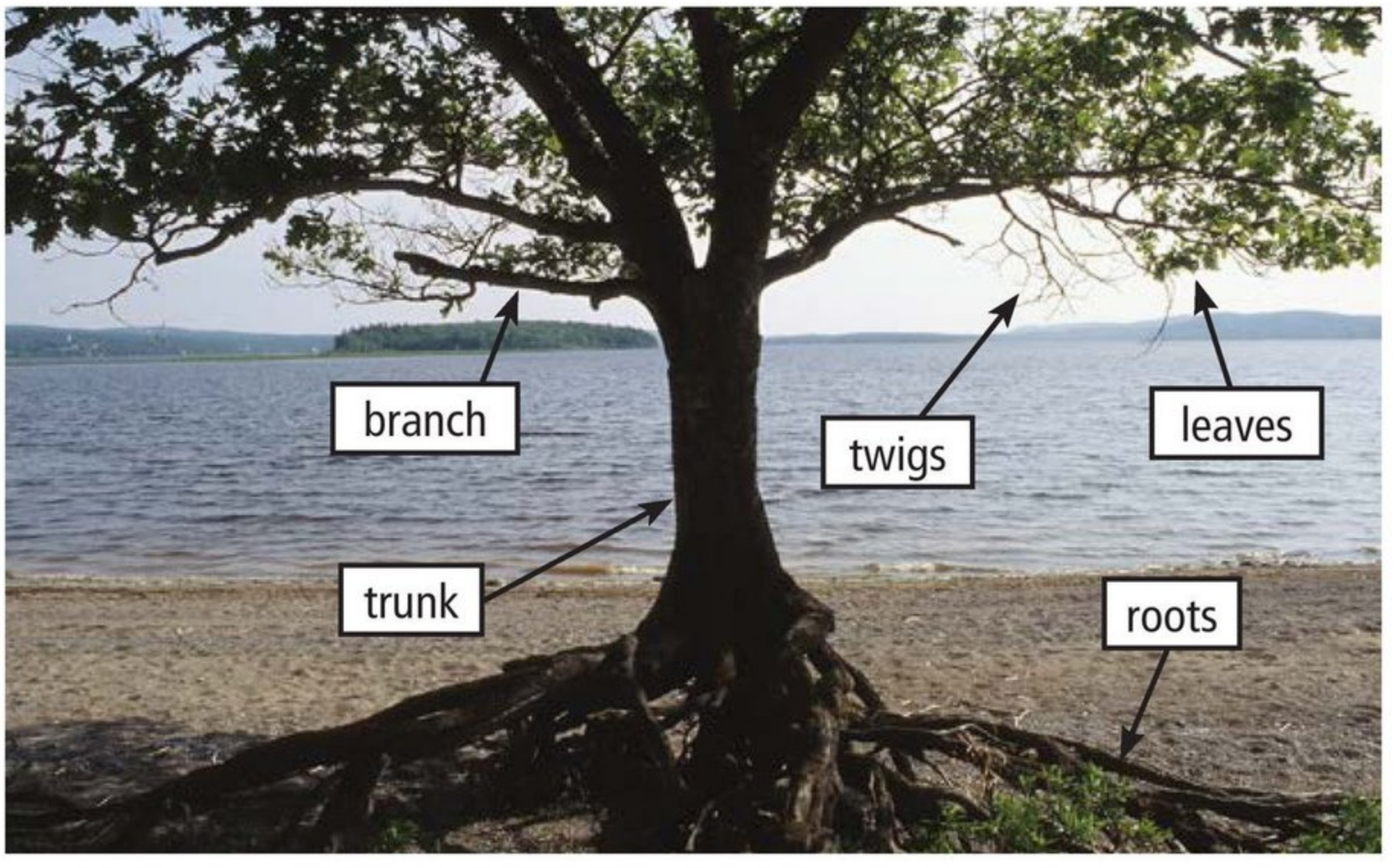
Yellow and brown leaves fall from this deciduous tree.

In the fall, the leaves of deciduous trees show their true colors. These true colors are yellows, oranges, and browns, which hide under green chlorophyll all spring and summer. We see these colors in the fall after leaves stop making chlorophyll.

Branches

Branches are the arms that hold up a tree's leaves. Branches spread leaves out to get as much sunlight as they can. The leaves give shade to other living things on sunny days.

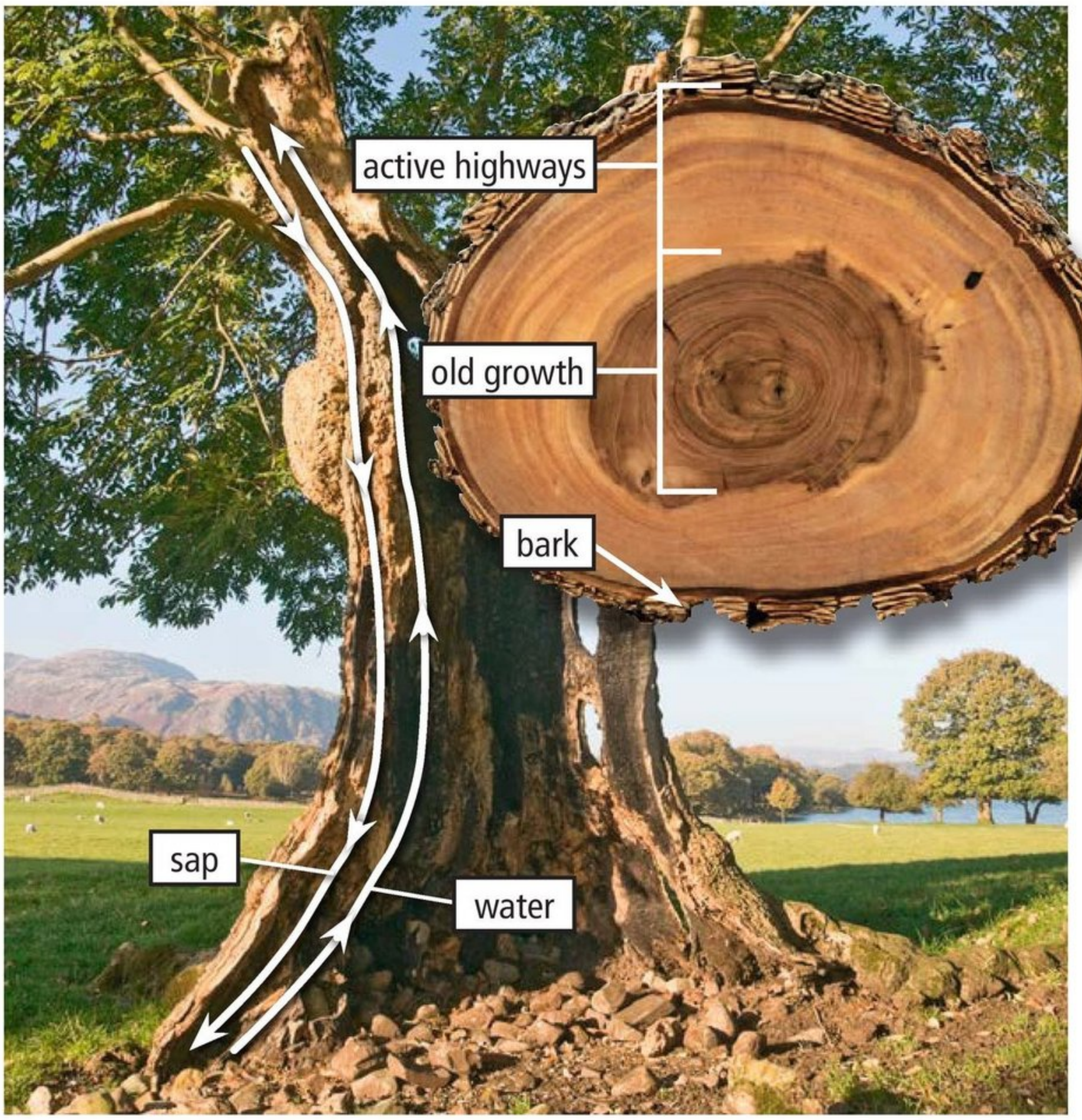
Branches start out as twigs, then they grow thicker each year. As a tree grows, its **bark** cracks open so the branches and trunk can expand. New bark is always growing under the old, ready to **protect** the tree. If new bark gets stripped away, a tree can die.



Trunk

Tubes in the tree's trunk carry water from the roots up to the leaves. They also carry **sap**, or food, down from the leaves to the roots. These tubes are like highways, carrying traffic back and forth. They are close to the outside of the tree, just under the bark.

Layers of bark protect trees.



This hollowed out ash tree continues to grow.

A tree doesn't need the middle of its trunk to live. The middle is made of rings of old growth, not active highways. That's why a tree can keep growing even if the middle is hollowed out after a lightning strike. All it needs is enough bark to protect its highways.

Tree roots reach deep into the ground.

Roots

Trees need soil to keep growing. Roots are part of the highways. They soak up water and **nutrients** from the soil. Roots also keep the soil in place when it rains. Without the roots of trees and plants, soil washes away.

Trees are stuck in the soil because their roots reach deep into the ground. It's a good thing they can make their own food, since they can't move to get it.

Sap

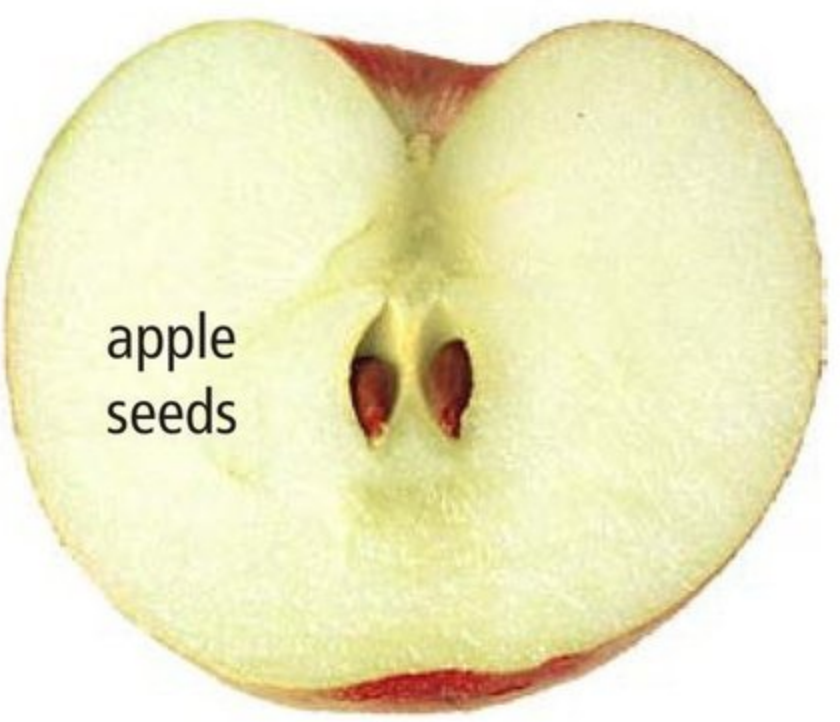
Leaves use water plus sunlight and air to make food for the tree. This food is in the form of liquid sugars. Sometimes people eat some kinds of tree sugars for food. You've probably had tree sugar for breakfast—pouring it over your pancakes or waffles. Have you guessed what tree sugar this is? It's maple syrup, and it comes from the food, or sap, of a sugar maple tree.

A bucket collects sap from a tap in a maple tree.

Pancakes swim in maple syrup.

Seeds

Deciduous trees grow flowers, which make seeds that are inside fruit or nuts. Conifers make cones instead of flowers. The cones do the same job for conifers that flowers do on other trees. They make seeds to grow more trees. Each seed holds its own supply of food to keep it alive until it's ready to **sprout**.



apple fruit

apple blooms

pine nuts

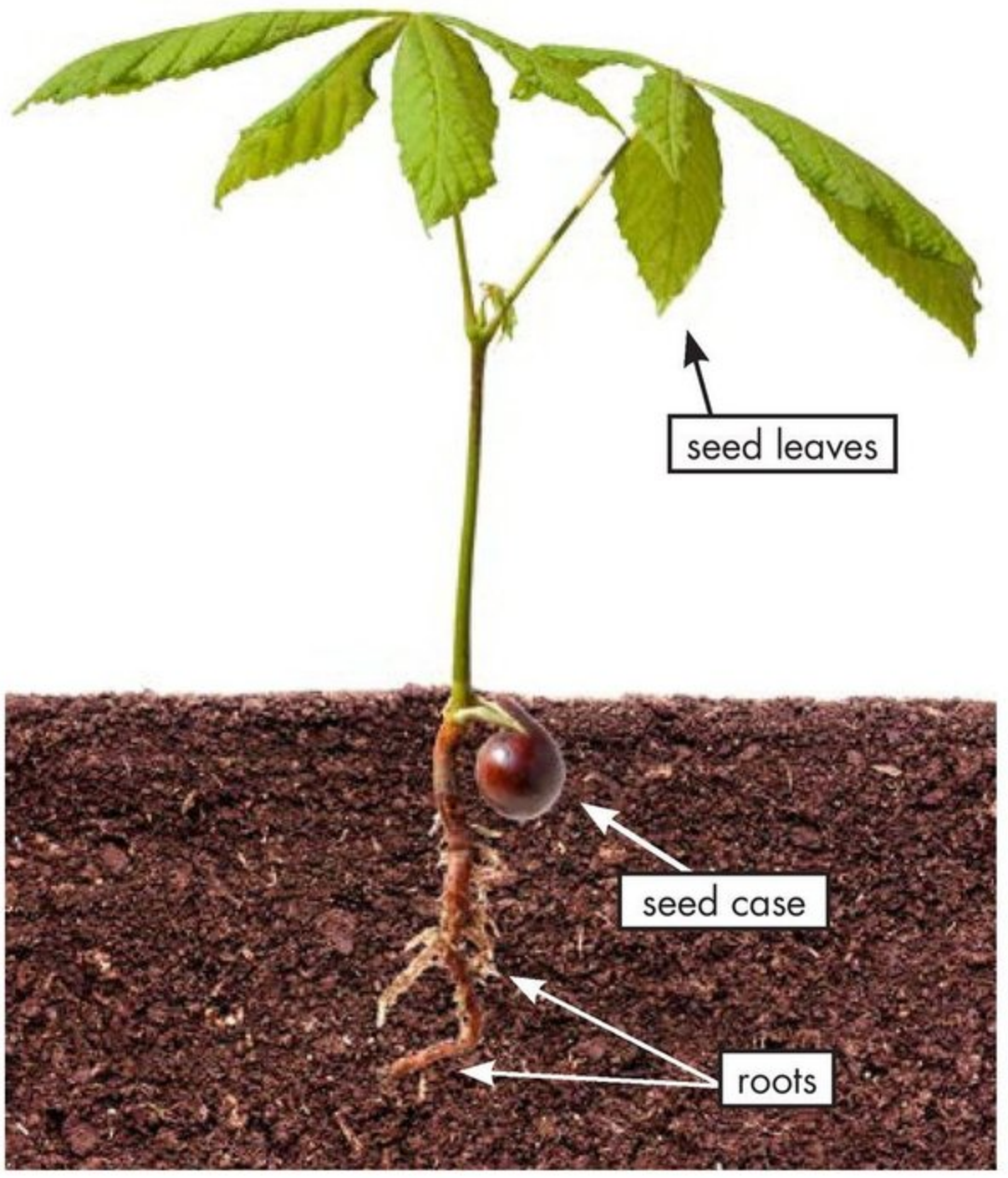
pinecone

acorn

Growing

How does a tall tree grow from a small seed? The seed soaks up water until it can send out a root. With more water, leaves inside the **seed case** grow until they push up and out. Once this has happened, we say the seed has sprouted.

Now the sprout can make its own food and no longer needs the seed's store of energy. The seed leaves will make food for the new sprout.



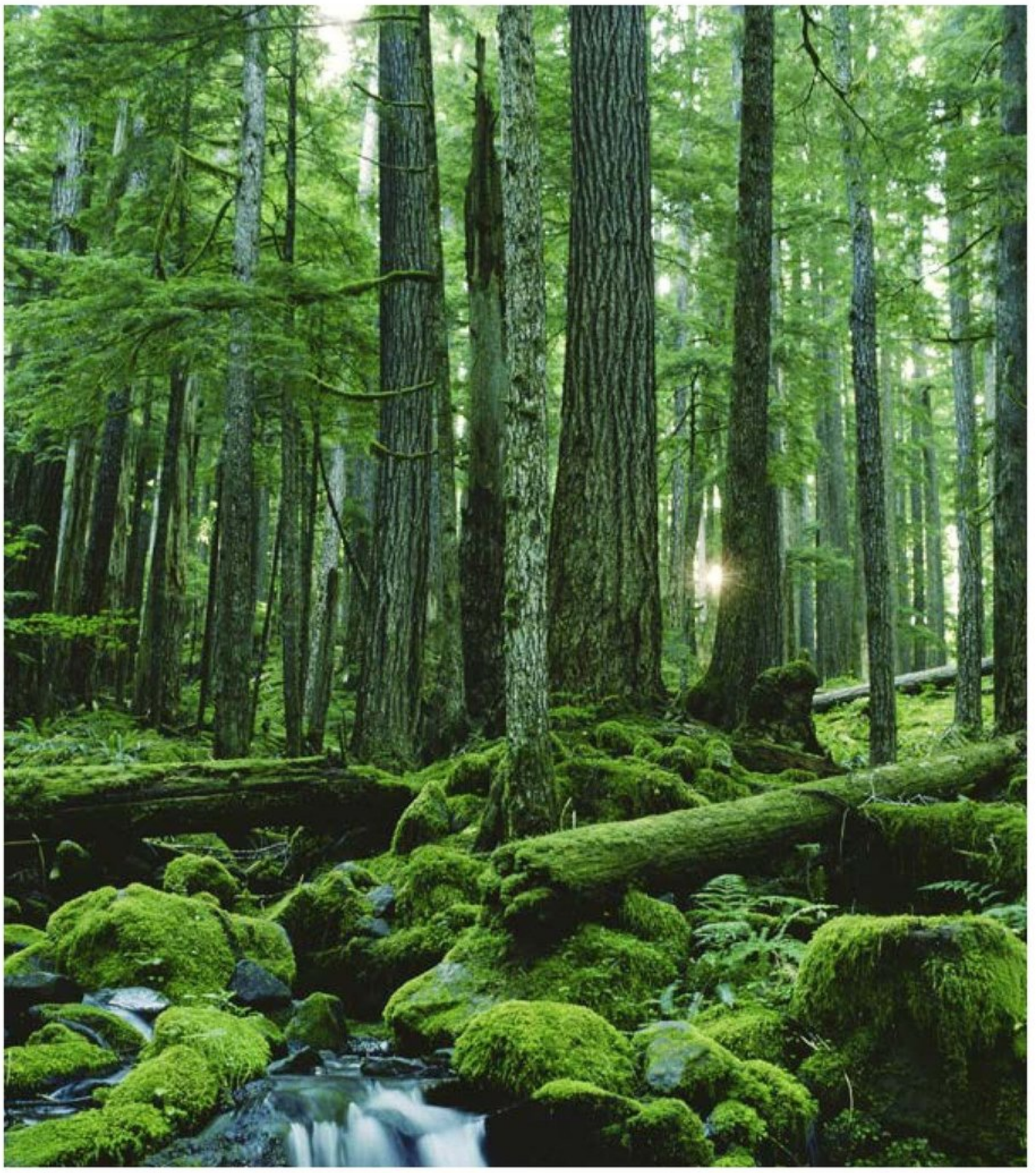
This shows how a sprout grows from a seed.

Conclusion

While trees look like they aren't doing much, they are working. They make their own food by changing sunlight and air into sugars. This helps keep the air clean, too.

Trees are homes and food for birds and other animals. Look to see which animals make homes in trees near your home. Some animals, including humans, eat sap, fruit, and seeds from trees. Others eat bark and leaves.

Holes in trees make safe homes for many owls.



Trees do many things. Tree leaves shade us on sunny days. They also shade new sprouts from the heat of the sun so they won't burn. Tree roots hold the soil in place that trees and other plants need to grow. From saplings to mighty giants, trees stand tall.

Glossary

bark the rough covering on a tree's branches and trunk (p. 7)

chlorophyll a material in green plants that can turn water, air, and sunlight into food (p. 5)

conifers trees, such as pine and spruce, with needle-like leaves (p. 5)

deciduous trees that lose their leaves in the fall and grow them in the spring (p. 5)

nutrients things from soil and food that living things use to stay healthy and grow (p. 10)

protect to keep something from harm (p. 7)

sap the liquid sugars trees make for their food (p. 8)

seed case the outer covering of a seed (p. 13)

sprout to begin growing (p. 12)

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