

# Parts of a Tree

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### ROOTS



1. Most trees have very large root systems.
2. Roots draw water and nutrients from below ground to cause growth above ground.
3. Because of root growth, the tree may be almost as large below the ground as above it.

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### LEAVES/NEEDLES



1. Once they sprout, trees make their own food in their leaves or needles.
2. Chlorophyll is the substance that gives needles and leaves their green color.
3. Needles and leaves convert energy from the sun, water drawn from their roots, and carbon dioxide from the air to produce the sugars they use for "food".

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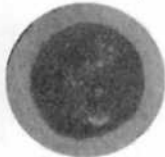
### BARK



1. Outer bark protects the tree from weather, insects, disease, fire, and animals.
2. Inner bark carries nutrients down from the leaves to the branches, the trunk, and the roots for growth.
3. Bark can be thick or thin: birch bark may be 1/4 of an inch thick; giant sequoia bark may be 2 feet thick.

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### CAMBIUM



1. Cambium is made up of layers of cells that divide and grow, producing new layers of wood.
2. These layers of cells allow us to "read the rings" to tell a tree's age.
3. A dark ring and a light ring are produced each spring and summer. We count the dark rings to tell a tree's age.

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### SAPWOOD



1. Sapwood transports minerals and water from the roots to the crown of the tree.
2. Sugars move down the sapwood from the leaves to feed the roots.
3. Chemicals in the sap determine the color the leaves turn in the fall.

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### SEED



1. Seeds carry the beginnings of life for a tree and also its food supply.
2. Seeds can be found in cones, nuts, or fruits.
3. Seeds fall in the autumn and are covered with a blanket of needles and leaves for the winter. They then sprout in the spring.