

A Fall Look at Trees

Introduction: The Festival of Colors

The first sign of the fall festival of colors appears at the top of trees. The [maple tree](#) leads the way with a splash of color in its upper branches. Bush pilots looking down from their planes claim that, as early as mid-September, the forest looks like it's wearing a green suit with a gold-and-red cap.

But did you ever wonder what makes leaves change color in the fall? As the days get shorter, the sap in the trees flows more slowly, which affects the upper branches first. The leaves at the top of the tree, which get more sunlight, mature faster and complete their life cycle before the leaves further down the tree.

At the end of their life cycle, the leaves drop and accumulate on the ground.

But what happens to all the leaves that end up on the ground in the fall?

Tree Buds in the Fall

Buds aren't very apparent in the fall and throughout the entire winter. In the spring, however, they swell and are ready to open.

Tree Leaves in the Fall

Leaf Color

You've noticed that, at the end of summer, the days get shorter and cooler, and that the sun is lower in the sky. Trees also know this is happening. The chlorophyll in the leaves needs lots of sunlight to do its job correctly. As the days grow shorter, the chlorophyll



disappears. In the summer, there is so much chlorophyll in the leaves that it hides the other bright [pigments](#), such as yellows, reds, and oranges. The intensity of color in the leaves varies according to tree species, the health of the tree, and soil acidity.

The leaves of some trees--such as the [beech](#)--don't show a dramatic change in color in the fall; they simply turn brown. The leaves of the lilac and some other trees stay green until they drop. The most spectacular, however, are the trees whose leaves turn flashy shades of orangish red, such as the [sugar maple](#) and the [red maple](#), or golden yellow, such as the [elm](#) and birch.

When the Leaves Fall

The main role of leaves is to carry out [photosynthesis](#). When the chlorophyll disappears from leaves in the fall, they can no longer photosynthesize, so the tree drops them. The tree does this by growing a thin layer of a kind of cork between the leaf and where its stem attaches to the branch. The leaf then falls off. Even after they drop, however, leaves still have a role to play. The dead leaves form a blanket on the ground around the foot of the tree that protects its roots from the cold and freezing, while holding in moisture. Insects and fungi break the leaves down into [humus](#), which nourishes the roots of the tree.

Trees Flowers in the Fall

A tree starts preparing new flowers in the fall. It produces special buds called floral buds. The flowers that appeared in the spring have either disappeared or have turned into fruit or cones.

This is the best time of the year (August to October) to harvest seeds from just about every type of tree species. Seeds are harvested to produce lots of young trees, called seedlings, in nurseries. Seedlings are grown for planting in areas from which other trees have been harvested. This process is referred to as reforestation.

Have you ever seen a beech with its bark all scratched up? It's caused by bears who climb beech trees to eat their nuts, which ripen in October.



Fruit in the Fall

All trees have fruit, if not seeds. You should be able to come up with a number of fruit and their trees: the apple and the [apple tree](#); the pear and the [pear tree](#); the orange and the [orange tree](#), to name just a few. The seeds are found inside the fruit. If you plant an apple seed, an apple tree will grow. If you plant an apple from which the seeds have been removed, nothing will grow. The important part is the seed. The seed contains all the genetic information needed to grow a tree.

The fruit develops once the flower has been [fertilized](#) by pollen. Each species of tree has its own kind of fruit, which ripens at different times of the year.

The [red maple](#) and the [silver maple](#) rush to produce their fruit. It appears in the spring even before the leaves are fully developed. [Poplars](#) are also in a hurry to get out their fruit, which is scattered by the wind in early summer.



Tuft from the [cottonwood](#) Key from the [red maple](#)

Other trees take their time. Their fruit is usually larger, more [complex](#), and less abundant. It takes more time to [mature](#).





Acorn from the [bur oak](#)



Acorn from the [red oak](#)



[Key](#) from the [sugar maple](#)



Nut from the [bitternut hickory](#)

Roots, Trunk, and Branches in the Fall

Branches

A tree grows both in height and girth each year. The branches stretch skyward to get as much light as possible.

The trunk and branches grow to support an increasing number of leaves and branches.

Wood Cells



In late summer and early fall, trees stop producing wood cells. They would rather devote their energy to storing reserves and producing buds.

Bark

Bark's main purpose is to protect the tree. It's a little bit like our skin. The bark protects the tree against disease, insects, fire, [drought](#), injury, and animals.

