

# What Color Is Your Fall?

## Try It Out

Take a census of the fall colors around you. If you see a leaf on the ground that catches your eye, pick it up and put it in the container that most closely represents its color.

## What's Going On?

Three pigments contribute to the beautiful fall colors you see.

- *Chlorophyll* - Gives leaves their basic green color and is necessary for photosynthesis.
- *Carotenoids* - Produce yellow, orange, and brown colors in things such as corn, carrots, and daffodils.
- *Anthocyanins* - Give red or purple color to familiar things like cranberries, red apples, and concord grapes.

The shortening days and cool nights of autumn trigger the growth of a corky membrane between the branch and the leaf stem. This membrane interferes with the flow of nutrients into the leaf, which stops the production of chlorophyll in the leaf. This causes the green color of the leaf to fade. If the leaf contains carotene, as do the leaves of birch and hickory, it will change from green to bright yellow as the chlorophyll disappears. In some trees, as the concentration of sugar in the leaf increases, it reacts to form anthocyanins. These pigments cause the yellowing leaves to turn red. Red maples, red oaks, and sumac produce anthocyanins in abundance and therefore the brightest reds and purples in the autumn landscape.

Sources: [fs.fed.us](http://fs.fed.us), [chem.wisc.edu](http://chem.wisc.edu)



## Wonder While You Walk...

If the same pigment causes the same green color in all trees, what makes different trees display different *shades* of green in the summer?



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