



## AUTUMN LEAVES

Lesson by Christine Vosseller



Did you know that little CELLS in a tree leaf work hard in the sunshine and heat of summer making food for its tree? As sunlight and TEMPERATURE decrease in Fall, the leaves stop production of food and eventually fade in color and strength as the season progresses. Every autumn we are greeted with a gentle dance in the trees that captures our gaze then loses our attention as Fall fades to Winter. We love Fall and AUTUMN leaves in the Mid-Atlantic United States!

What are we talking about today? LEAVES

What works hard in a tree leaf to produce food? CELLS

Sunshine and \_\_\_\_\_ help little cells in a leaf make food for its tree.

TEMPERATURE

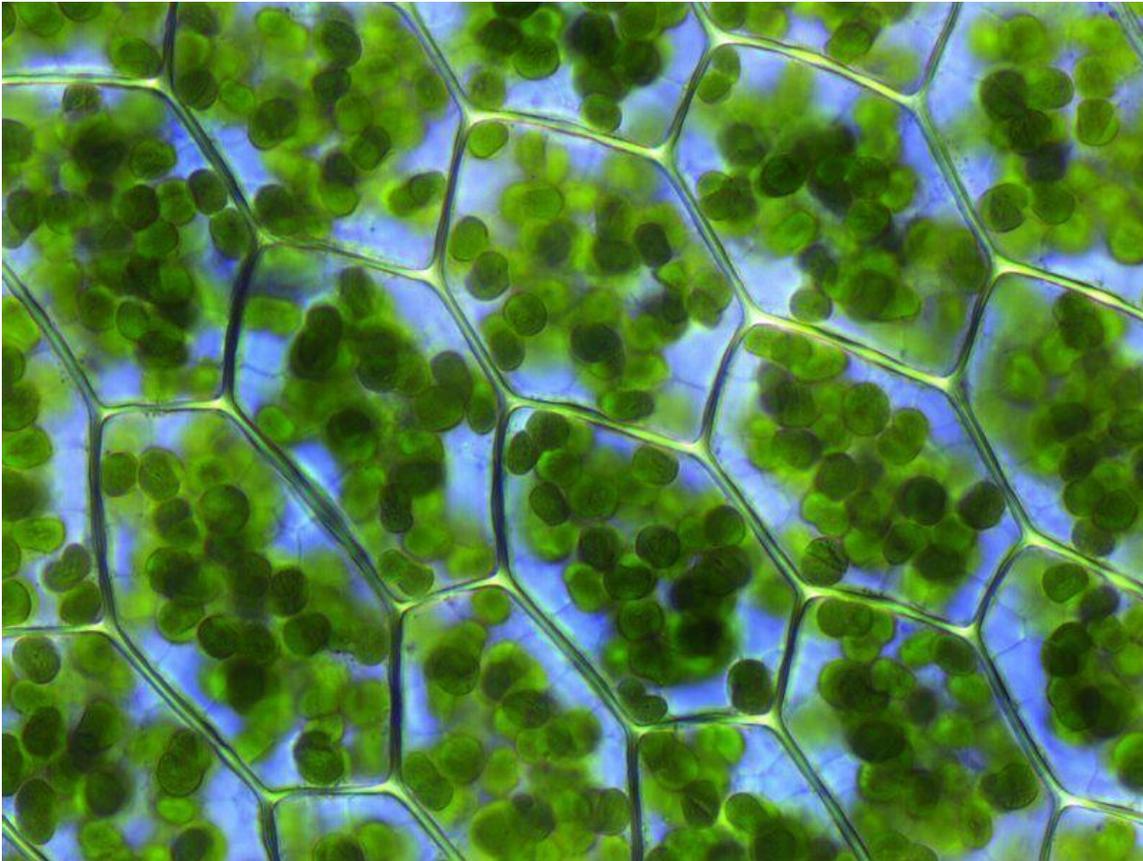
What happens when sunlight and temperature decrease in the fall and leaves stop making food? FADE IN COLOR AND STRENGTH

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The little cells in a tree leaf are filled with CHLOROPHYLL, which gives a leaf its green color. Chlorophyll absorbs sunlight; energy it uses to transform CARBON DIOXIDE and water to CARBOHYDRATES like starch and sugar. This feeds the tree! Green is not the only color on a leaf; it is just the dominant one during the production of food. Leaves also contain yellow CAROTENE and orange XANTHOPHYLL colors.



Magnified chlorophyll Nationalgeographic.org

What chemical is found in the little cells of a tree leaf? CHLOROPHYLL

What does chlorophyll absorb and use as energy? SUNLIGHT

What does food does the leaf produce for the tree? CARBOHYDRATES

Leaves also contain the color yellow \_\_\_\_\_. CAROTENE

Leaves also contain the color \_\_\_\_\_ xanthophyll. ORANGE

When fall hits with a change in temperature and length of daylight, leaves stop making food. As the chlorophyll breaks down, the green color of a leaf begins to

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fade. Eventually the yellow and orange colors become visible and produce a beautiful show in our trees! Sometimes a chemical called red ANTHOCYANIN is then produced which creates red and purple leaves. DOGWOOD and SUMAC trees can feature bright red and deep purple leaves. MAPLES are often at their peak in a brilliant orange color. MAPLES trees generally fade to shades of brown. Variation in color is a product of how much chlorophyll remains the leaf throughout fall.



What two things happen in fall that causes a tree to stop making food? LEAVES STOP MAKING FOOD, GREEN COLOR OF A LEAF BEGINS TO FADE

\_\_\_\_\_ anthocyanin is produced to create red and purple leaves. RED

Name a tree mentioned that features red and purple leaves. DOGWOOD, SUMAC

Name a tree that features orange leaves. MAPLES

Name a tree that features shades of brown on its fall leaves.

What determines variation in fall leaf color? OAK

So what determines the intensity or depth of color in a fall leaf? Water supply, temperature and light determine how deep the color will be, and how long the fall color will stick last. Rainy, overcast weather can intensify the BRILLIANCE of any fall leaf! Low temperatures above freezing will produce a bright orange/red

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maple leaf. If our first FROST arrives too soon, the color of all fall leaves will be weakened.

Name one of the three things that determine intensity or depth of color in a fall leaf. WATER, TEMPERATURE, LIGHT

Low temperatures that remain above freezing produce a bright orange/red leaf on what kind of tree? MAPLE

What will happen if our first frost arrives too soon? color of all fall leaves will be weakened

Why do you think rainy/overcast days intensify the color of any fall leaf?

So what kind of trees have leaves that change color in the fall? DECIDUOUS trees and SHRUBS lose their leaves seasonally. In fact, deciduous means “falling off at MATURITY” or “tending to fall off.” Trees that lose their leaves include maple, oak, ELM, ASPEN and BIRCH. Shrubs that lose their leaves include HONEYSUCKLE, POISON IVY and VIRGINIA CREEPER.



What kind of trees have leaves that change color in the Fall? DECIDUOUS

What does deciduous mean? lose their leaves seasonally; falling off at MATURITY; tending to fall off

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Name two trees that experience a change in Fall. MAPLE, OAK, ELM, ASPEN, BIRCH

Name two shrubs that experience a change in Fall. HONEYSUCKLE, POISON IVY, VIRGINIA CREEPER.

Not all trees lose their leaves. Most CONIFER trees found in the North and South are EVERGREEN. Conifer trees include PINE, SPRUCE, FIR and CEDAR trees. Evergreen trees have needle or scale-like leaves that remain green year round. Evergreen trees usually keep their leaves or needles 2 to 4 years.

What kind of tree does not experience a change in color or falling leaves?

EVERGREEN

Name at least two kinds of conifer tree. PINE, SPRUCE, FIR, CEDAR

Describe an evergreen tree leaf. have needle or scale-like leaves that remain green year round, usually keep their leaves or needles

How long can an evergreen keep its leaves or needles? 2 to 4 YEARS

### CREATIVE WRITING:

The best time to enjoy autumn, and brilliant fall leaves, is on a clear, dry and cool day (but not freezing) day. Tell me about an activity you would like to do with your family before autumn leaves begin to fall to the ground.



Christie Vosseller is not a practitioner but IS an ally of the nonspeaking community and a great lesson writer. She works in Human Resources and enjoys traveling with her wife, Elizabeth and taking long walks with her papillons puppies, Jacques and Henri.

*The mission of I-ASC is to advance communication access for nonspeaking individuals globally through [training](#), [education](#), [advocacy](#) and [research](#). I-ASC supports all forms of augmentative and alternative communication (AAC) with a focus on methods of spelling and typing. I-ASC currently offers [Practitioner training](#) in [Spelling to Communicate \(S2C\)](#) with the hope that other methods of AAC using spelling or typing will join our association*

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