More Fun with Autumn Leaves

Predicting Fall Foliage

West Virginia is one of the most beautiful places during fall foliage season! However, it can be hard to see the hues of red, orange and gold if you don't know where or when to go to see them. A lot of factors can affect the timing of peak viewing season: tree species, drought and temperature. For example, black gum (scientific name *Nyssa sylvatica*) is one of the first tree species in our area to change color and will often be bright red in a sea of green. Drought and temperature regulate how much moisture is in the leaf cells, influencing the length of time that a healthy full-pigmented leaf stays on the tree.

In order to plan your next family fall foliage "leaf peeping" trip, it can be helpful to learn about the basic fall color influencing factors. This site offers a wonderful fall foliage prediction map for the entirety of the US. This offers a range of dates from August 30th to November 15th for you to see how foliage will be affected in the country. NOAA, the National Oceanic and Atmospheric Administration, also provides data and maps on the monthly temperature and precipitation of the US. This can help predict the changing of fall foliage for your leaf-peeping adventure.

So biologically, what makes leaves change color? Less rain and colder temperatures lead to death of the internal organelle responsible for green pigment, the **chloroplast**. This causes other pigments, called **accessory pigments**, to shine through. **Anthocyanins**, the pigments that cause red coloring, and **carotenoids**, the pigments that cause yellow and orange coloring, are the two main accessory pigments that are responsible for the colors in the fall foliage. These accessory pigments are constantly in the plant but are masked by the abundant chlorophyll in each leaf during spring and summer.

Seeing the fall leaves is an amazing event that you can witness every year if you can plan accordingly!

Photo by Savin Madeleine

Smoky Mountains 2021 Fall Foliage Map
How to Predict the Peak Time for Fall Leaf Foliage
How to Predict Fall Color | A Fruitful Discussion
National Temperature and Precipitation Maps
Why Do Leaves Change Color in Autumn?

Do all Trees Change to the Same Color?

No! Depending on the tree species, they can show an array of colors! With the high diversity of trees in West Virginia, you are able to see the full range of colors trees offer in the fall, ranging from yellow to purple. This makes our state one of the most beautiful during the fall season. Our state tree, the sugar maple (scientific name *Acer saccharum*), can create a mixture of a beautiful pink, yellow and orange. Learning individual tree species can help you predict locations for your leaf peeping road trip throughout the mountain state.

Photo courtesy of West Virginia Tourism

WV Fall Foliage
West Virginia Trees
West Virginia Has Amazing Fall Foliage — Here Are the Best Places to See It

Leaves are a Part of the Ecosystem!

Fallen tree leaves are a vital part of every ecosystem. They provide food and shelter to many species of plants and animals. Without these habitat features, ecosystems struggle. Small animals and arthropods, such as pill bugs and millipedes, feed on the rotting layer of leaves. Beetles, mollusks, and wolf spiders use leaf piles as a way to hunt by trapping prey in the maze of leaf layers. Many birds such as wild turkeys, blue jays, and thrushes also use the leaves to feed on during the winter months. Some other bird species use the leaves as nesting material, or even a place to hide nuts for winter. Caterpillars, like the beautiful luna moth, pupate in leaves in our yards to emerge next year as a beautiful green moth.

As you can see, leaving leaf piles is beneficial for many species of plants and animals. Spending your time to clear all of the leaves in your yard can be wasteful and harmful to the environment. Instead, leave some leaves for the animals to use and promote a healthy ecosystem. As an added bonus, doing so can be helpful in lowering your carbon footprint by not using leaf blowers or other devices that use electricity or by throwing out leaves in plastic trash bags.

Additionally, this is an excellent opportunity to study your ecosystem! Leave big piles of leaves until part of them are starting to decompose. Take this time to observe all of the organisms in your leaf pile. What are they doing? Why do you think they're there? Think about the ecosystem before you start raking up leaves this year!

Life in the Fallen Leaves – Loudoun Wildlife Conservancy
6 Excuses to Avoid Yard Work This Fall

Nature's Notebook

Nature's Notebook is a program of the USA National Phenology Network that allows you to *record observations about the plants and animals around you*. It uses **phenology**, the study of biological changes that are caused by seasonal and environmental factors, to better track data for plants and animals. Nature's Notebook has been adapted for many different regions and species and can help us better understand how phenology affects nature. All you need to do is sign up for a free Nature's Notebook account, select the species you're studying and start observing! This can provide information to scientists that can help understand and protect your local ecosystem.

How to sign up for Nature's Notebook:

Green wave | USA National Phenology Network
Nature's Notebook Activities | USA National Phenology Network

Fun Art Projects with Fall Foliage!

Autumn leaves can be used as creative and fun decorations for home and the classroom. It can also help teach others about the things around you. Just gather leaves from your backyard and get to crafting! You can make leaf crowns, wreaths, and almost anything you can think of. You can also use autumn leaves to learn about nature's symmetry.

Tree leaves have **bilateral symmetry**, meaning that if they were split in half or folded in the correct orientation the two sides would be identical to each other. A lot of things in nature have this symmetry such as dogs, sharks, and even humans!

How are these West Virginia native tree species' leaves *bilaterally symmetrical?* Draw a line to best show where the leaves are symetrical.

tulip poplar
(*Liriodendron tulipifera*)

Photo by Derek Ramsay

red maple
(*Acer rubrum*)

Photo from The Original Garden

black walnut
(Juglans nigra)

Photo by NYC Street Tree Map

[Autumn Leaf Crown]
[How to Make an Easy Autumn Leaf Wreath for Kids]
[Mirror Leaf Drawings: Nature Art]

Leaf Pile Observation Log

What do you think you will see? (Insects? Amphibians? Eggs? What else?)

_____
_____
_____
_____

Where are you observing? _____

What date & time did you start and end your observation?
Date: _____Start time: _____ End time: _____

What did you see in your observation? Why do you think it's there? Describe this in as much detail as you can.

_____
_____
_____
_____

Draw anything you're not sure how to describe

How is this different from what you thought you would see?

_____
_____
_____
_____