

Activity 68: Name That Tree

Overview

Tree species can be identified by looking at several different features: leaves, bark, twigs, flowers, fruits, and seeds. Even the overall shape of a tree can give clues to the tree's identity. In this activity, your students will learn more about trees by identifying features. Afterward, they can play an active game that tests their knowledge of different types of trees.

How to Use This Information

This supplement replaces the information provided in the Background section of this activity. Use this material in place of the information contained on page 288 of PLT's Pre K-8 Activity Guide.

Resources

Campbell, Christopher S., Fay Hyland and Mary L. F. Campbell. *Winter Keys To Woody Plants of Maine*, University of Maine Press, Orono, Maine, 1975. Although this is titled as a Maine reference, many of the species included in it are also found in New Hampshire.

Little, Elbert L. *National Audubon Society Field Guide to North American Trees, Eastern Region*, Alfred A. Knopf, Inc., New York, 1998.

Petrides, George A. and Janet Wehr. *Peterson Field Guide: Eastern Trees*, Houghton Mifflin Company, Boston, 1998.

Wildlife Habitat Activity Kits for New Hampshire. Durham, NH: UNH Cooperative Extension, 1999. This kit contains an extensive reference library and animal tracks, skins, skulls, and puppets. All or part of the kit may be borrowed from the NH Fish and Game Dept. in Concord. www.wildlife.state.nh.us

Online dichotomous tree identification key provided by the Arbor Day Foundation www.arborday.org/trees/whattree

Correlations to NH Frameworks

Science:

Life Science: LS1.1

Science Process Skills: SPS1.1, SPS3.1, SPS4.6

Correlations found at www.nhplt.org/Correlations.htm

How to Classify

There are many ways to classify trees. The following is a summary of characteristics people use to identify different species. For more information, refer to the background information in PLT's Pre K-8 Activity Guide for "Bursting Buds" on page 277 and "Germinating Giants" on page 279.

Needles or Broad Leaves

In the simplest sense, two kinds of trees grow in New Hampshire: softwoods and hardwoods. Softwoods have needle-shaped leaves. Pines, spruces, hemlocks, and firs are all examples of softwoods. They are also coniferous. Conifers have seeds that develop inside cones. For the most part, conifers with needle-shaped leaves are evergreens. That means they do not lose all of their leaves each year and, instead, stay green year-round.

Hardwoods have broad leaves. Oaks, maples, beeches, and ashes are examples of hardwoods. Their seeds are usually in fruits or nuts. Generally they are deciduous, which means they lose all of their leaves each year.

Classifying trees as softwoods and hardwoods can be misleading because the wood of some softwood trees (conifers) are harder than that of a hardwood (broad leaf). For example, red pine is harder than aspen.

It can be equally confusing to classify trees as coniferous and deciduous. For example, larches grow cones and needles, but lose their leaves every year. This makes them a deciduous conifer. By contrast, a holly is a broad leaf tree that is also an evergreen.



needles of the
red spruce

Common Trees in New Hampshire

New Hampshire has many common examples of both softwoods and hardwoods.

Softwoods

eastern white pine
pitch pine
red pine
red spruce
white spruce
black spruce
northern white cedar
balsam fir
eastern redcedar
eastern hemlock



Hardwoods

silver maple
striped maple
mountain maple
white birch
yellow birch
black birch
gray birch
red oak
white oak
sugar maple
red maple
American beech
basswood
black cherry
aspen (poplar)

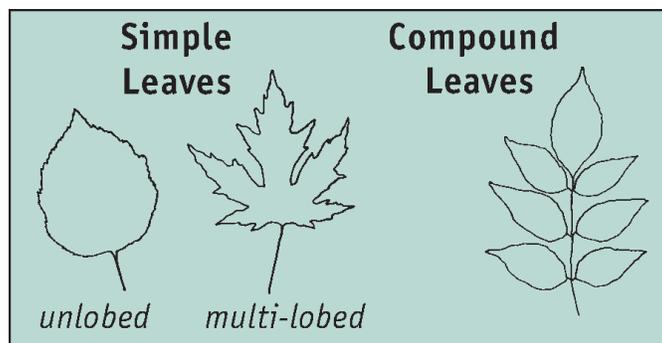


All hardwoods listed are deciduous.

All softwoods listed are evergreen.

The Shape of Things

The overall shape of a leaf gives clues to the tree's identity. For example, willows have long, slender leaves; alder and cherry trees have oval-shaped leaves; and poplars and gray birch have triangular-shaped leaves. Similarly, fir needles tend to be flat, pine needles are rounded, and spruce needles are squarish. Other variations on a leaf shape affect the tips and bases. The tips may be notched, pointed, rounded, tapered, and so on. Beech and black cherry leaves have tapered tips. The tips of black gum leaves are rounded. The bases may be squared, rounded, heart-shaped, and so on. Basswood has a heart-shaped base, while the bases of yellow and paper birch leaves are rounded.



Simple and Compound

When most people think of leaves, they think of simple leaves. Simple leaves have only one piece to them. Maple, oak, aspen, sycamore, and many other trees have simple leaves. Compound leaves, on the other hand, are made up of several leaflets. Ash, walnut, hickory, and sumac trees all have compound leaves.

Margins

The edges or margins of leaves also provide clues to a tree's identity. For example, some leaves have teeth or serrated edges along their margins, such as beech and paper birch. Some leaves have lobed margins, as on red oak and sugar maple. Still others—alder and black gum—have leaf margins that are entirely smooth.

Textures

Some leaves are completely hairy (staghorn sumac). Others have hairs on only one side (sycamore and yellow birch), while others are completely smooth (young black cherry). By contrast, a mature black cherry has hairs along the mid vein only. Leaves may also be thick or thin, rough or waxy.

Leaf Arrangements

Another characteristic to identify a tree is the way its leaves are arranged on the twigs. Many trees have alternate leaves that are staggered along the twig, such as oak, hickory, and beech. Other trees have opposite leaves that grow in pairs along the twig; for example, maple, ash, and dogwood. And some leaves grow in whorls, or are whorled, like pines. The leaves on pines, spruces, firs, and other needle-leaved trees also grow in patterns. For example, leaves on pines grow in clusters. Red pine needles grow in clusters of two, pitch pine in clusters of three, and white pine in clusters of five.

Twiggy Clues

If you know what to look for, even leafless twigs on a tree can tell you the tree's identity. This is especially helpful when identifying deciduous trees in the winter. By looking at where the leaf scars or buds are on the twig, people can tell if the leaves grow in an alternate, opposite, or whorled pattern. (Leaf scars are the places on twigs where leaves were once attached.) The size, color, and shape of buds can also help to identify trees. For instance, beech has cigar-shaped buds and walnut has monkey-face shaped leaf scars. Spines and thorns on twigs also help to identify a tree. For more investigation of tree twigs, go to "Bursting Buds," page 277, in the PLT Activity Guide.



cherry have berries for fruit. Common trees that produce nuts are beech and oak. The black locust sheds its seeds in pods.

Bark Basics

Many people identify trees just by looking at the color and texture of tree bark. For instance, bark may be shaggy (shagbark hickory and white oak), smooth (American beech and young red maple), or rough (red oak and eastern white pine). Bark may have deep furrows or markings (white ash). Paper birch is an example of a tree easily identified by its white peeling bark. When using bark to identify a tree, look at the bark growing on the trunk rather than on branches and twigs, because the bark on

a branch is thinner and newer and may look quite different from that on the trunk. Bark also looks different as a tree gets older. For more information on bark types, please refer to "The Closer You Look" on page 263 in the PLT Activity Guide, and pages 4 of this supplement.

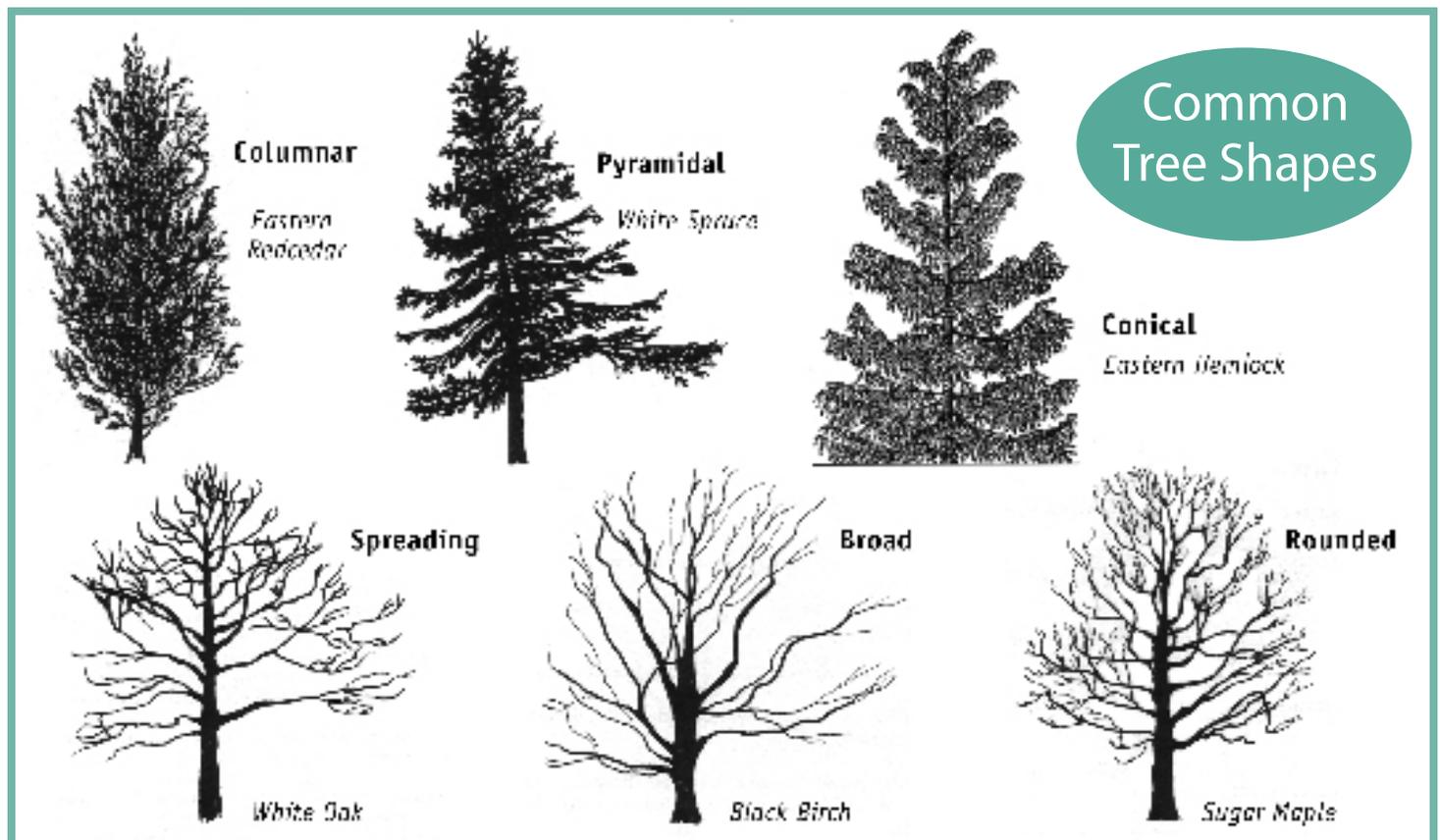
Fruit and Flowers

The shape, color, texture, size, and other characteristics of the fruits, cones and flowers can be used to identify trees. The seed-bearing structures of conifers are cones and their sizes and shapes vary widely. On hardwoods, seeds are encased in fruits.

Different trees produce different kinds of fruit, such as berries, winged seeds, nuts, pods, or some other type of fruit. Red, sugar, and silver maple are easy to recognize by their winged seeds called samaras. Both black cherry and pin

Shaping Up

Trees can be identified by their characteristic shapes. In fact, just by glancing at the shape of a distant tree, some people can tell what kind of tree it is. It is important to note, however, that a tree's shape may vary due to its location in open spaces versus dense woods and their exposure to continual windy conditions. Generally, trees growing in woods have more compact tops.



What's In A Name?

The very characteristics that enable us to identify and classify trees give rise to a variety of common names and tree lore. Each tree in New Hampshire may have three or more common names. These names offer clues about the special features of a particular tree. For example, the striped maple has green bark colored with gray and white stripes. This tree is also known as the moosewood, because moose like to chew on its branches for its sweet sap; the whistlewood, because the bark comes off its branches easily when making whistles; and goosefoot maple, because the leaves' wide, flat, three-lobed shape looks like a goose's foot.

Sometimes two different trees share the same common name, as with ironwood. There is smooth-barked ironwood, *Carpinus caroliniana*, also known as American hornbeam, blue beech, and water beech. And there is rough-barked ironwood, *Ostrya virginiana*, also known as eastern hophornbeam. Both species grow to about 30 to 40 feet in height with small trunk diameters. The wood of each is known for such hardness that it is preferred for levers, ax handles, and other tools. In fact, the shared name of hornbeam stems from "horn" for toughness and "beam," an old word for tree. As their names suggest, they differ in appearance. American hornbeam has smooth, blue-gray bark, while eastern hophornbeam has flaky, gray-brown bark. Their fruits and leaves differ, as well. Because of their small stature they are not widely harvested commercially.

Trees may be called different common or nick names in different parts of the state. In the North Country, all maples (except sugar maple) are called soft maple. Use of this generalized term is not shared in the southern part of New Hampshire. Given the confusion that arises from the use of common names, scientific names are necessary to ensure people are referring to the same species. Two interesting references for tree names and lore are *A Natural History of Trees of Eastern and Central North America* and *Red Oaks and Black Birches*. Both are listed in the resource section.

Here are some trees found in New Hampshire and their nick names.

COMMON NAME	NICK NAME(S)
red maple	soft maple, white maple, swamp maple
sugar maple	hard maple, rock maple
silver maple	river maple, cut-leaf maple
eastern hophornbeam	ironwood, lever-wood
American hornbeam	ironwood, muscle-wood, blue beech, water beech
red pine	Norway pine, hard pine
pitch pine	black pine, hard pine
white spruce	cat spruce (smells like cat urine)
eastern larch	tamarack, hackmatack, American larch
eastern redcedar	juniper
balsam poplar	Balm of Gilead poplar
pin cherry	fire cherry, bird cherry
basswood	linden, bee-tree
sycamore	buttonwood, button ball tree, plane tree, white wood
black gum	buttonwood, black tupelo, beetle-bung, sourgum, pepperidge

Non-Native Species

When exploring any landscaped area, be aware that non-native species are commonly planted for their aesthetic value or tolerance of stressful conditions. Examples include Norway maple, saucer magnolia, flowering crabapples, barberry, European buckthorn, and European mountain ash. Other common non-natives are apples, Colorado blue spruce, weeping willow, burning bush, and ginko. Although they provide living examples of many botanical characteristics for study, these species—and others—are not native to New Hampshire forests.

"Invasive" means a plant, animal, or other organism that is typically non-native to a particular ecosystem and where introduction causes—or is likely to cause—harm to the environment, human health, or the economy. Three species are prohibited in New Hampshire because of their invasive nature. They are burning bush, Norway maple, and Japanese barberry. For more information on non-native, invasive species, see "Guide to Invasive Upland Plant Species in New Hampshire," a document published by the NH Invasive Species Committee, NH Department of Agriculture, and UNH Cooperative Extension in 2005. A link to the document can be found at <http://extension.unh.edu/forestry/Docs/invasive.pdf>.