

Let's Identify Common Native Trees

The Basics of Using a Two-Choice Dichotomous Key

Learning to use a tool, like a dichotomous key, can enhance any walk in the forest. It is especially useful when your young companion asks, "What tree is that?"

A dichotomous key is a series of questions for which there are only two choices. Each answer differentiates the options and guides the user through complex biology (in our tree example) to narrow the candidates from hundreds to a few.

Botanists use five features to identify trees: leaf, fruit, twig, bark, and form. To start our tree identification journey, we are going to focus on leaves, one of the easiest ways to identify, or get close to identifying, most species of trees.

Three leaf features are important:

- **Type of Leaf:** Is the leaf broad, needle, or scales?
- **Arrangement:** On a branch are the leaves found opposite each other or alternating?
- **Shape:** Are the leaves simple in shape, that is a single leaf attached to the branch with a stalk? Or compound, that is a group of leaflets on a central stalk?

The questions in this simplified key allow you to become familiar with the questions used to identify common native trees.

This simplified key is a companion teaching tool to the "FCMGA Guide to Tree Identification and Common Native Trees."

It is based on two sources:

- **The On-Line Dendrology** (the study of trees) tool from Virginia Tech at <https://dendro.cnre.vt.edu/dendrology/ldit.htm>. The VTree app will work on your mobile device.
- The on-line "**What Tree is That?**" available at <https://www.arboday.org/trees/whattree>.

Other resources:

- **Key to Leaves of Virginia Trees**, Virginia Tech, <https://dendro.cnre.vt.edu/forsite/key/intro.htm>
- And the **dichotomous key from the Arbor Day Foundation**. What tree is that? <https://www.arboday.org/trees/index-identification.cfm>
- **Native Tree Choices for Northern Virginia**, Plant NOVA Natives, <https://www.plantnovanatives.org/native-tree-choices>

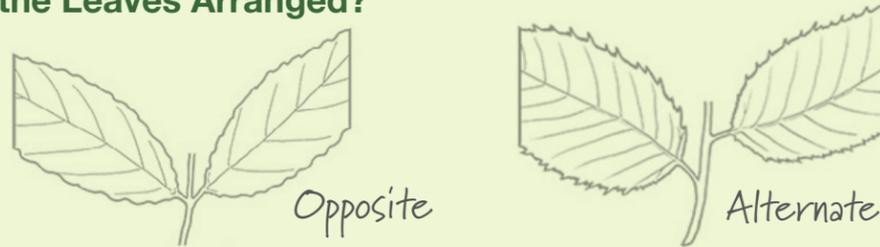


Let's get started.

Step 1. What is the leaf shape?

Leaf Shape: Broad, Flat	Leaf Shape: Needle-Like Or Scale-Like
Go to Step 2	Go to Step 3

Step 2A: How Are the Leaves Arranged?



Leaf Arrangement:

Opposite	Alternate
Your tree is a maple, ash, dogwood, Caprifoliaceae family (viburnums, honeysuckle) or horse chestnut. Use the acronym "MADCap Horse" to remember the trees with opposite leaf arrangements.	Go to Step 2B

Simple Shape Single Leaf on a Petiole (Stalk)	Compound Shape Central Stalk with Multiple Leaflets
Does the leaf have lobes?	Ash trees (<i>Fraxinus sp</i>) Buckeyes (<i>Aesculus sp</i>) Elderberry (<i>Sambucus sp</i>) Horsechestnut (<i>Aesculus hippocastanum</i>) And more
Yes, lobed leaves	
No, but might have teeth on margins	

And has serrated leaf margin. . .	
Red maple (<i>Acer rubrum</i>) Silver maple (<i>Acer saccharinum</i>) Striped maple (<i>Acer pensylvanicum</i>)	Blackhaw

And has smooth leaf margin. . .	
Black maple (<i>Acer nigrum</i>) Sugar maple (<i>Acer saccharum</i>) And more	Flowering dogwood (<i>Cornus florida</i>) Fringetree (<i>Chionanthus virginicus</i>) Northern catalpa (<i>Catalpa speciosa</i>) And more



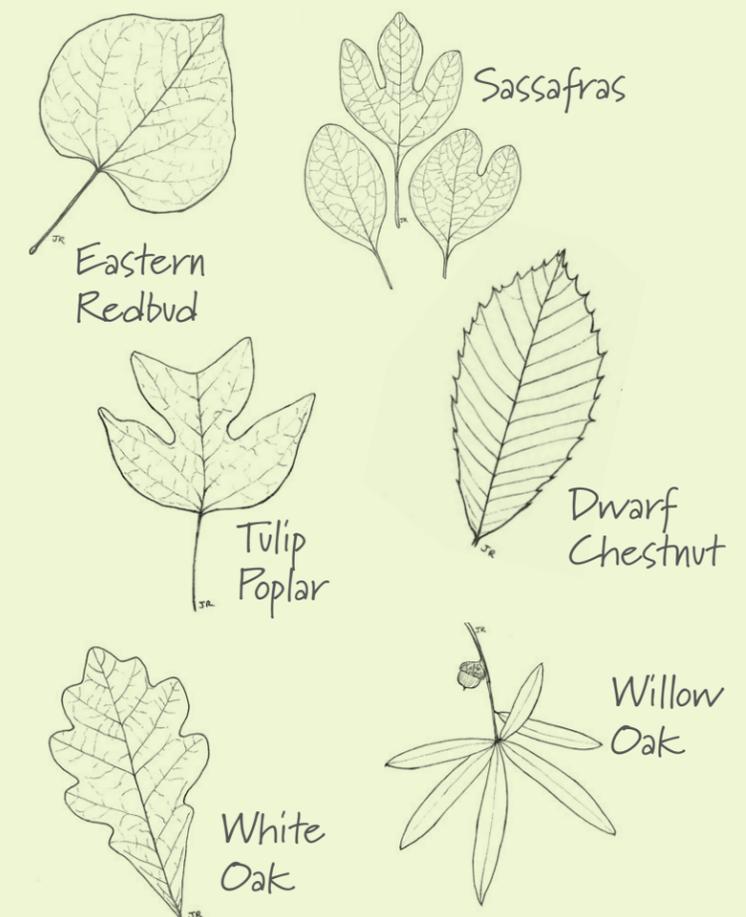
Step 2B: Alternate Leaves, Buds, Branches (not in pairs or whorled)



Leaf Shape:

Simple Shape	
• Heart Shaped. . . ?	
And no obvious lobes (but may have teeth) Eastern cottonwood (<i>Populus deltoides</i>) Eastern redbud (<i>Cercis canadensis</i>)	
• Long & Narrow . . . ?	
And with serrated teeth American chestnut (<i>Castanea dentata</i>) Black cherry (<i>Prunus serotina</i>) Black willow (<i>Salix nigra</i>) Dwarf chestnut (<i>Castanea pumila</i>) And more	And with smooth leaf margin Sweetbay magnolia (<i>Magnolia virginiana</i>) Willow oak (<i>Quercus phellos</i>) Invasive: Russian olive, Autumn olive And more
• Oval, widest above midpoint. . . ?	
And lobed Hawthorn (<i>Crataegus spp</i>) Oaks: white oak (<i>Quercus alba</i>), northern red oak (<i>Quercus rubra</i>), swamp white oak, scarlet oak And more	And no lobes but may have teeth... American elm (<i>Ulmus americana</i>) Oaks: chestnut, chinkapin oak, live oak Pawpaw (<i>Asimina triloba</i>) Serviceberry (<i>Amelanchier canadensis</i>) Sweetbay magnolia (<i>Magnolia virginiana</i>) Witch-hazel (<i>Hamamelis virginiana</i>) And more
• Round (in outline). . . ?	
And with obvious lobes American sycamore (<i>Platanus occidentalis</i>) Sassafras (<i>Sassafras albidum</i>) Sweetgum (<i>Liquidambar styraciflua</i>) Tulip poplar (<i>Liriodendron tulipifera</i>) And more	And no obvious lobes Roundleaf birch (<i>Betula uber</i>) Sassafras (<i>Sassafras albidum</i>) Sparkleberry (<i>Vaccinium arboreum</i>) And more
• Oval, widest at/below midpoint. . . ?	
And with obvious lobes Hawthorn (<i>Crataegus spp</i>) White oak (<i>Quercus alba</i>) Other oaks: swamp white oak, bear oak, bur oak, chestnut oak And more	And with no obvious lobes but may have teeth Alternate-leaf dogwood (<i>Cornus alternifolia</i>) American beech (<i>Fagus grandifolia</i>) American elm (<i>Ulmus americana</i>) American persimmon (<i>Diospyros virginiana</i>) Downy serviceberry (<i>Amelanchier arborea</i>) Hophornbeam (<i>Ostrya virginiana</i>) Hornbeam (<i>Carpinus caroliniana</i>) Pawpaw (<i>Asimina triloba</i>) River birch (<i>Betula nigra</i>) Some hollies, including deciduous holly, mountain holly, American holly Some magnolias, including sweetbay, bigleaf, and Fraser magnolia And many more
• Wedge-shaped. . . ?	
Hawthorn (<i>Crataegus spp</i>) and Blackjack oak (<i>Quercus marilandica</i>)	

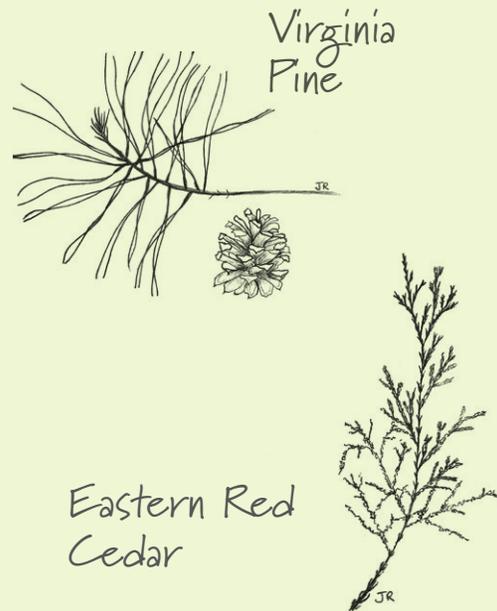
Compound Shape	
Has a central leaf stalk with several leaflets (pinnately compound). . . ?	
And the leaflet is long and narrow Some hickories, including mockernut hickory (<i>Carya tomentosa</i>), shagbark hickory, bitternut hickory, pignut hickory Some sumac, including smooth, winged, and staghorn sumac Invasive: Tree-of-heaven (<i>Ailanthus altissima</i>) And more	And leaflet is round (in outline) Black locust (<i>Robinia pseudoacacia</i>) Poison sumac (<i>Toxicodendron vernix</i>) Yellowwood (<i>Cladrastis kentukea</i>) And more
Has a central leaf stalk with several leaflet-bearing leafstalks that branch off . . . ?	
Bipinnately compound Honeylocust (<i>Gleditsia triacanthos</i>) And more	



Step 3. Needle-Like Or Scale-Like

What shape are the slender or scale-like leaves?

Needle Like, Long, Slender		Scale-Like or Awl-Like (short, sharp, stiff)	
Needles Appear in Clusters Pines	Single Needles, not in Clusters	Leaves Arranged in Rounded or 4-Sided Pattern on the Twig	Leaves Arranged in Flat Sprays
How many needles in the cluster?	How are the leaves attached to the twig?	Common juniper (<i>Juniperus communis</i>) Eastern red cedar (<i>Juniperus virginiana</i>) And more	Atlantic white cedar (<i>Chamaecyparis thyoides</i>) Northern white cedar, Eastern arborvitae (<i>Thuja occidentalis</i>)
2 Needles per Cluster Red pine Shortleaf pine (<i>Pinus echinate</i>) Virginia pine (<i>Pinus virginiana</i>) And more	With Woody Pegs Spruce <i>sharp-pointed needles often 4-sided or diamond shape, with four whitish stripes; whorled equally around branch (looks like bristly brush); cones grow downturned</i>		
2 and 3 Needles per Cluster Shortleaf pine (<i>Pinus echinate</i>)	Red Spruce (<i>Picea rubens</i>) Invasive: Norway spruce (<i>Picea abies</i>)		
3 Needles per Cluster Loblolly pine (<i>Pinus taeda</i>) Longleaf pine (<i>Pinus palustris</i>) Shortleaf pine (<i>Pinus echinate</i>) And more	With Suction Cup Firs <i>Soft, flat, needles attached directly to branch, looks like suction cup; narrow cones are cylindrical and upright or horizontal</i>		
4 Needles per Cluster Loblolly pine (<i>Pinus taeda</i>)	Balsam fir (<i>Abies balsamea</i>) Fraser fir (<i>Abies fraseri</i>)		
5 Needles per Cluster Eastern white pine (<i>Pinus strobus</i>)	With Tiny Leaf Stalks (petioles) Hemlock & Cypress <i>Shape, size and growth of cone are needed to identify tree</i> Bald cypress (<i>Taxodium distichum</i>) Carolina hemlock (<i>Tsuga caroliniana</i>) Eastern hemlock (<i>Tsuga canadensis</i>) Pond cypress (<i>Taxodium ascendens</i>) Invasive: European larch (<i>Larix decidua</i>)		



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