

Pocomoke River Quest Worksheet



Tree ID on the Trail of Change

Today you're going to explore and identify the different types of Trees and Shrubs found here at Pocomoke River State Park.

To assist you in identifying the species, you're going to be using a **Dichotomous Key**. A Dichotomous Key is a tool that allows users to determine the identity of items in nature by going through a series of choices that lead the user to the correct item.

In this Park Quest activity, you will be using your Dichotomous Key to identify SEVEN (7) species of trees or shrubs you come across on the Trail of Change.

Before you get started we'll go over a few basic plant characteristics and give you a glossary of terminology to help you along the way.

So let's get started

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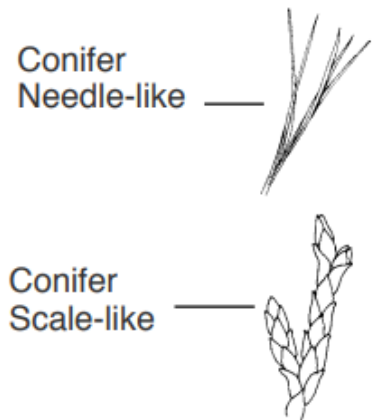
Tree ID on the Trail of Change

When scientists classify trees they start by dividing trees into two main groups.

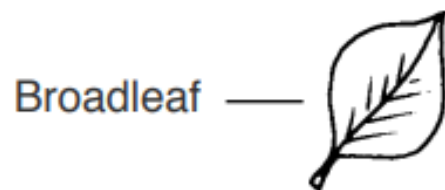
1. CONIFERS – Conifers are cone bearing trees and most are evergreen. Conifers have needle-like or scale-like leaves.

A. Conifers with needle-like leaves

B. Conifers with scale-like leaves



2. BROADLEAF TREES – Broadleaf trees have thin, flat leaves that are usually shed annually (deciduous). Broadleaf trees bear a variety of fruit and flowers.



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BROADLEAF TREES

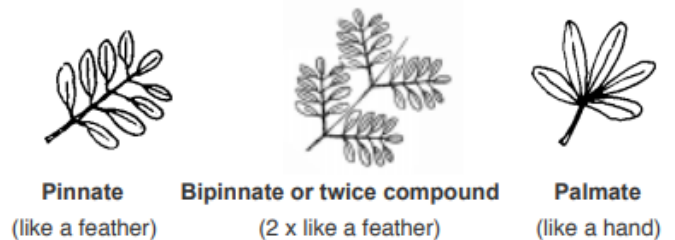
A. Simple leaves OR Compound leaves

If there is just one blade on the leaf stalk, it is a **SIMPLE LEAF**.
If there are many blades on the leaf stalk, it is a **COMPOUND LEAF**. The multiple blades of the compound leaf are called **LEAFLETS**.

Examples of Simple leaves

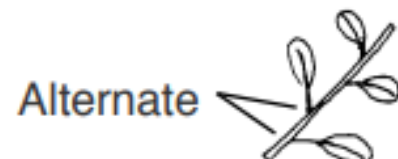


Examples of Compound leaves



B. Opposite Arrangement OR Alternate Arrangement

When two or three leaves are arranged directly across from each other on the twig it is called an **OPPOSITE ARRANGEMENT**.
When leaves stagger up the twig and are not located directly across from each other on the twig that is called an **ALTERNATE ARRANGEMENT**. This refers to how the **LEAVES** are arranged on the **TWIG**, not the way the leaflets are arranged on the leaf stalk.



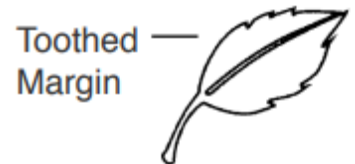
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C. Margin

The MARGIN of a leaf is the leaf edge. Some broadleaf trees have leaves with smooth edges or ENTIRE MARGINS. Some broadleaf trees have LOBED LEAVES, leaves with projections that shape the edge of the leaf. Some broadleaf trees have TOOTHED MARGINS characterized by a saw-like edge on the leaf.



D. Other Characteristics

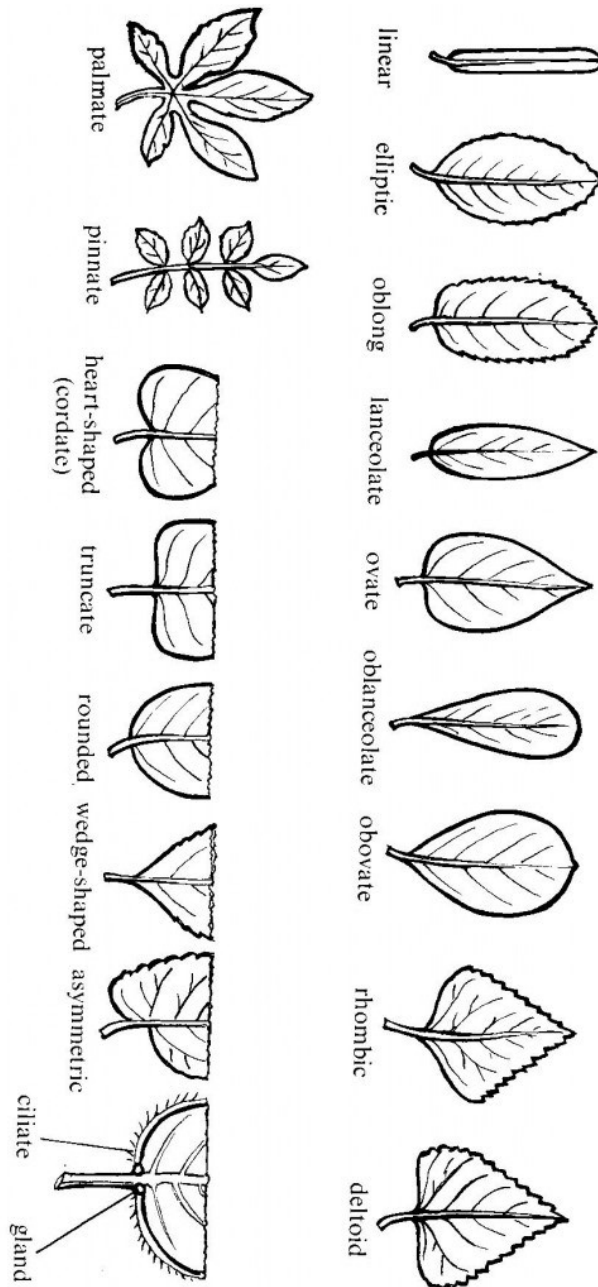
Many other factors are important in tree identification. Other things scientists look at are the bark, the seeds/fruits, the shape of the tree, the shape of the leaf and the leaf veins.

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Other Characteristics Leaf Shape

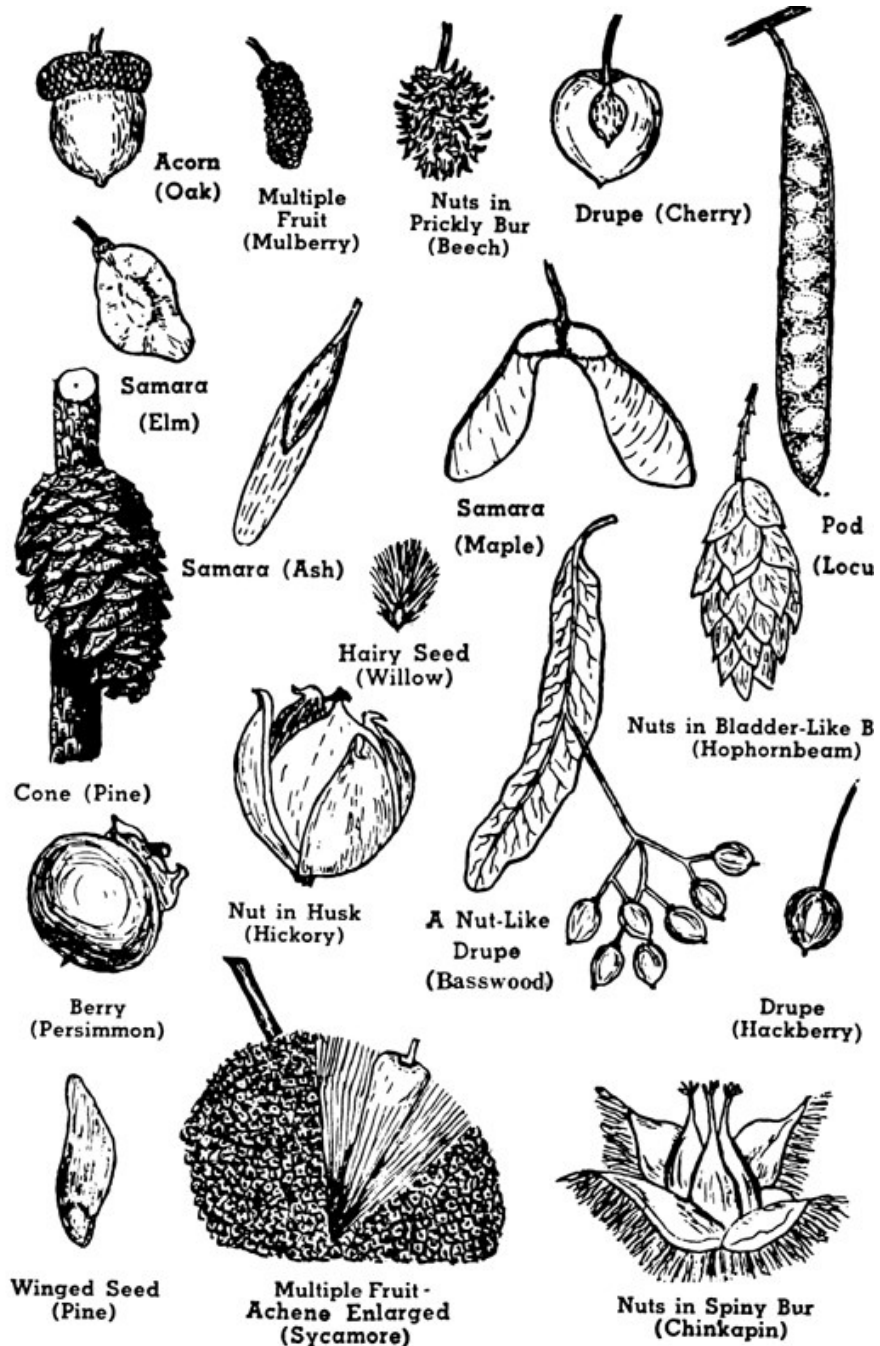


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Other Characteristics Fruit types

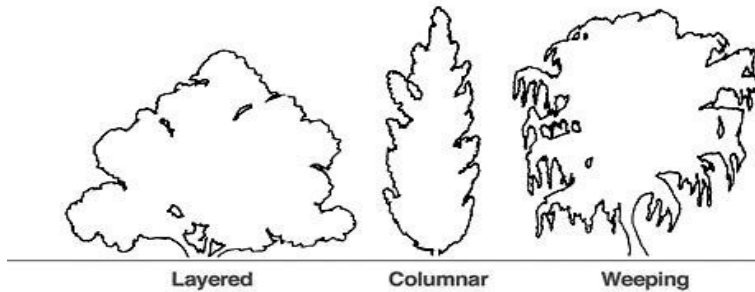
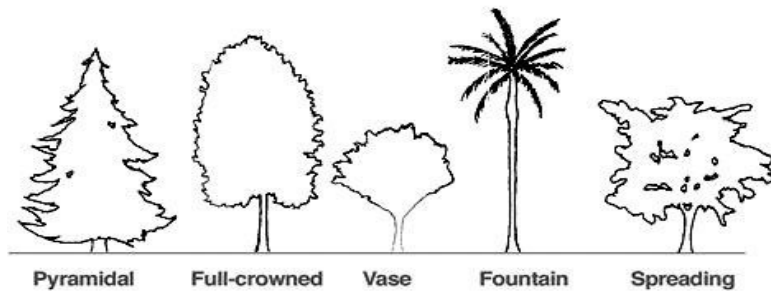


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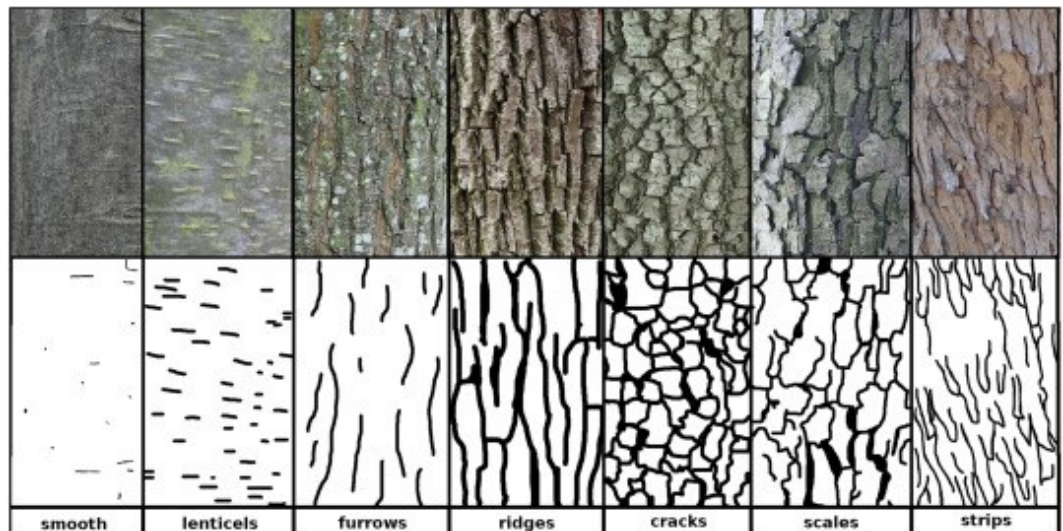


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Other Characteristics Tree Shape



Other Characteristics Bark Types



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GLOSSARY

Alternate – leaves that are staggered, not placed directly across from each other on the twig.

Blade – The flat part of a leaf or leaflet, characteristic of broad-leaf trees.

Bract – a modified leaf that bears a flower/seeds. Broadleaf – a tree with leaves that are flat and thin, and generally shed annually.

Compound leaf – A leaf with more than one blade. All blades are attached to a single leaf stem. Where the leaf stem attaches to the twig, there is a bud. Conifer – a cone bearing tree.

Deciduous – shedding all leaves annually.

Entire – a leaf margin with smooth, untoothed edges.

Evergreen – trees with needles or leaves that remain alive on the tree through the winter and into the next growing season.

Lobes – projections that shape the edge of a leaf.

Margin – the edge of a leaf.

Opposite – 2 or 3 leaves that are directly across from each other on the same twig. Palmate – arranged like fingers on the palm of a hand.

Petiole – the leafstalk that connects the blade(s) to the twig.

Pinnate – arranged like the vanes of a feather.

Samara – winged fruit Simple leaf – a single leaf blade with a bud at the base of the leaf stem.

Teeth – saw-like notches on the outer edge of a leaf.

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Now that you've gone over a few features of plants you can put that knowledge to good use and identify some trees!

START HERE 1.

Do you have a.... **BROADLEAF** (tree with leaves that are thin, flat & usually shed annually)? Broadleaf If so, **GO TO #2.**

OR

CONIFER (tree that bears cones and has needle-like or scale-like leaves)? If so, **GO TO #3.**

2. Are the leaves **SIMPLE** (one blade attached to the leaf stalk or petiole)? If so, **GO TO #10.**

OR

Are the leaves **COMPOUND** (more than one blade attached to the leaf stalk or petiole)? If so, **GO TO #21.**

3. Does the conifer have... **NEEDLE-LIKE LEAVES**? If so, **GO TO #4.**

OR

SCALE-LIKE or **AWL-SHAPED LEAVES**? If so, **GO TO #5.**

4. Are the needles attached...

SINGLY, each needle attached directly to the twig? If so, **GO TO #6.**

OR

In **BUNDLES** OR **CLUSTERS** of needles? If so, **GO TO #7.**

5. You have an Eastern Redcedar or Juniper.

The wood of this tree is especially noted for its ability to resist the effects of moisture. The wood is also notable for its fragrance and it is often used in cedar chests.

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6. You have a Bald Cypress.

Bald Cypress is a deciduous conifer. It is notable for its wide bases and protruding “knees.” The northern limits of this species’ range is Sussex Co. DE.

7. Are the needles bundled...

In groups of two and 1.5 to 3 inches long. If so, GO TO #8
OR

In groups of three and 6 to 9 inches long. If so, GO TO #9

8. You have a Virginia Pine.

This species commonly has a scrubby appearance because it retains dead branches and needles. The needles have a distinct twisted appearance.

9. You have a Loblolly Pine.

Loblolly Pine is one of the most widely planted and valuable species for lumber in the Southeast. It was commonly used for ship masts, because of the long and straight trunks.

10. Do the SIMPLE leaves have an OPPOSITE arrangement?
(Leaves located directly across from each other on the same twig.) If so, GO TO #12 .

OR

Do the SIMPLE leaves have an ALTERNATE arrangement?
(Leaves that are staggered, not located directly across from each other on the same twig.) If so, GO TO #13.

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11. Do the COMPOUND leaves have an OPPOSITE arrangement? (Leaves located directly across from each other on the same twig.)* If so, GO TO #14.

OR

Do the COMPOUND leaves have an ALTERNATE arrangement? (Leaves staggered, not located directly across from each other on the same twig.)* If so, GO TO #15.

**Remember to look at how the leaves, not the leaflets, are arranged on the leaf stalk.*

12. Are the simple, opposite leaves LOBED? If so, GO TO #16.

OR

Are the simple, opposite leaves NOT LOBED? If so, GO TO #17

13. Are the simple, alternate leaves LOBED? (Lobes are projections that shape a leaf) If so, GO TO #18.

OR

Are the simple, alternate leaves NOT LOBED? If so, GO TO #19.

14. You have an ASH, (Most likely Green Ash)

There are a number of species of ash in the United States including green ash, white ash, and blue ash. Ash wood is hard and durable; it is often used for tool handles and for baseball bats.

15. Are the Fruits on the tree indehiscent (One solid shell with no seams), GO TO #24

OR

Are the fruits on the tree dehiscent? Seed pods have seams allowing fruit to split when ripe) If so, GO TO #25

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16. These are Maple trees. (Most likely Red Maple)

Maples have winged seeds, called SAMARAS, that flutter to the ground like little helicopters. Maples usually have lovely fall color. The wood of the maple is prized for its strength and beauty. A number of different maple species can be found in the United States.

17. You have a Dogwood.

Many species of dogwood are planted as ornamental trees because of their lovely spring flowers. In the fall these trees have berries that are food for woodland birds.

18. Is the seed or fruit an ACORN in a cap? If so, go to #26.

OR

Is the seed or fruit NOT an ACORN? If so, go to #27.

19. Are the LEAF MARGINS ENTIRE (SMOOTH EDGED)? If so, GO TO #21.

OR

Are the LEAF MARGINS TOOTHED (JAGGED EDGED)? If so, GO TO #20.

20. You have an American Beech

The smooth steel-grey bark, long pointed winter buds, and leaves that remain on the tree throughout the winter are distinguishing characteristics of this species.

21. Are the leaves heart-shaped, is the fruit a small pod and are the spring blooms purple? If so, GO TO #22.

OR

Tree leaves, fruits and flowers are not as described above, if so GO TO # 23

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22. You have an Eastern Redbud.

These small trees welcome spring with a burst of vivid purple color. These trees grow well in a shaded location. (Your eastern redbud sample is just one example of a wide variety of trees that have simple, alternate, non-lobed leaves with entire (smooth edged) margins. Some of these trees include magnolia, Russian-olive, redbud, Osage-orange, pawpaw, magnolia, live oak, madrone, black tupelo, and persimmon...to name just a few.)

23. Are the leaves leathery, are the flowers showy, and are the plants large thicket-forming shrubs? If so, GO TO #34

OR

Leaves, flowers and growth pattern are not as described above, if so GO TO #35

24. You have a Hickory. (most-likely a bitternut or pignut)

Hickory trees are a source of food for many of our local species. They are excellent at providing shade and an important source of timber

25. You have a Black Walnut.

Black Walnut is one of the most valuable tree in North America. The wood is strong and durable with beautiful, distinct coloration. The fruit is commercially marketable for its flavor.

26. These are oak trees. 58 species of oak are native to North America. Some oaks do not have lobed leaves, but all oaks bear acorns. Its amazing strength, beauty and long life have made the oak a central part of American history.

Southern Red Oak– Varying greatly in lobe pattern

Water Oak– Tardily deciduous, leave half as wide as long

White Oak– Rounded lobes, deep sinuses

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27. Tree has distinct exfoliating bark (it has been described as similar to camouflage), if so, GO TO #28

OR

Tree has bark not as described above, if so GO TO #29

28. You have an American Sycamore.

Sycamore is one of the largest American Hardwoods. It prefers lowland wet areas but can be planted as an relatively pest-free ornamental or shade tree.

29. Tree has three different distinct leaf shapes, if so GO TO #30

OR

Tree leaves are not as described above, if so GO TO #31

30. You have and Sassafrass

The leaves of this species are variably lobed and aromatic when crushed. The oil is often extracted and used in a variety of applications including in the pharmaceutical industry.

31. Leaves are palmately lobed in a distinct star-like shape, if so, GO TO #32

OR

Leaves are not as described above, if so GO TO #33

32. You have a Sweetgum Tree.

The deeply lobed and star-shaped leaves rarely cause difficulties in identifying this species. In winter the distinct spiky fruits remain on the branches, falling in early spring much to the dismay of barefooted children.

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33. Your tree is a Tuliptree, also called Tulip poplar or Yellow poplar.

Not only an important timber tree, the tuliptree is prized for its beautiful, yelloworange, tulip-like blossoms that appear in early summer. Its leaves have a T-shirt shape and its winged seeds grow in an upright cone-like container.

34. Your species is a Mountain laurel.

If the thin scaly bark doesn't give this species away, its tendency to form thickets and wildly fragrant blooms in spring certainly will. This plant is one of the most showy and beautiful species in our area.

35. Bark is dark reddish, flowers white fragrant turning into dark purple drupes in summer. Leave have distinct fuzz (pubescence) surrounding petiole towards the bottom of leaves If so, GO TO #37

OR

Tree does not fit above description, trunks often buttresses at base if so, GO TO #36

36. You have a Black gum or Tupelo tree

Tupelo trees are important timber species for plywood and veneer stock. Tupelo honey is a prized commodity and talked about in popular country songs.

37. You have a Black Cherry.

Black Cherry is a rapidly growing tree that occupies a wide range and a variety of habitats. The wood is of great value for furniture and the fruits, although bitter are used in winemaking and for preserves.

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Please complete your worksheet as follows

Example:

Mystery Tree Number	These are the clues I went through (Always start at #1)	Mystery Tree Species
1	1 > 3 > 4 > 9 > 17 > 18	Loblolly Pine

Your Worksheet

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		