**ID That Tree**

**Objective**

Students will use a scientific key to identify trees by their leaves.

**Standards of Learning:**

Science 4.8, 5.1, 5.5, 6.1, LS.5, BIO.1, BIO.7

**Materials**

⬩ Single-page keys to trees of this State Forest

⬩ Laminated photos of trees from the key

(⬩ For older students - *Common Native Trees of Virginia* books)

**Background** (Can be done in the forest or, ideally, at school before the field trip)

For many reasons, people need to be able to identify trees. Knowing which trees are growing on a site can tell us about the soil, climate, and other environmental conditions there. Certain trees make good lumber, paper, medicines, food, or other products that people need. Some animals depend on particular tree species for survival. Other plants in a forest may grow best in the shade of certain types of trees. Some invasive types of trees can be harmful to the environment and might need to be removed. If you want to plant a tree in your yard, it’s helpful to know which trees might grow best there, and what their specific requirements are so that you can take the best care of your tree.

Trees are generally easiest to identify when you can look at the leaves. Other characteristics you can use to identify trees are bark, twigs, reproductive parts, overall form, and growing site.

A scientific key provides a step-by-step method to identify leaves or other natural objects. If possible, review use of a key ahead of time. Teach students that when using a scientific key, they should always start at number one, read both choices carefully, and proceed as the key tells them. Skipping ahead may miss important details and lead to the wrong ID.

Before giving students a key, review some identification features of leaves. It is helpful to show the students some example leaves when reviewing these features. An identification guide with drawings, found near the front of *Common Native Trees of Virginia,* can help you understand these features better.

Look for these features of tree leaves:

* Are they deciduous (falling off in winter) or evergreen (on the tree all year)?
* How are they arranged on the stem? Are they directly opposite each other, or do they alternate with each other in a zigzag pattern?
* Are they simple (having only one part) or compound (having more than one part)?
* Are the veins and/or leaflets pinnate (branching off from different places along the main vein or stem) or palmate (branching from a single point at the base)?
* What do the leaf margins (edges) look like? Are they smooth, jagged, wavy, or do they have tiny teeth? Are there lobes (parts of the leaf that stick out from the main part, like your ear lobe)? If so, are the lobes pointed or rounded?
* How would you describe the shape of the leaf base and the leaf tip?
* Do the leaves have any special features, like a strong smell or interesting texture?

**In the Forest**

During a walk on the trail, look around for trees that seem to be fairly common. (You don’t have to know what they are yourself – teachers and students can identify them together.) Stop in an area of your choosing, and choose several of the common trees for students to identify. Younger students should use the one-page key. Older students or those who already have experience with keying may use the key in *Common Native Trees of Virginia*. Have students work in pairs to identify the trees. They can check answers using the laminated pictures or the books.

**Questions for Review and Discussion**

- What are some reasons it may be important to be able to identify trees?

- What was the hardest part of using the key? How did you handle any problems?

- What other natural objects could be identified using a key?

- If you did not have a key, what are some other ways you could identify trees?

- How might the tree you identified be useful to wildlife? To people? To the surrounding environment?

- Why do you think these particular trees are common on this State Forest?

**Key to Common Trees of Matthews State Forest**

This key will help you identify some of the trees on this State Forest. To use the key, always start with # 1, and choose the better of the two statements. Follow the directions to other numbers, reading both choices carefully each time. When you get to the name of a tree, stop, and you’ll have the name of the tree. Check the picture and description in the book to see if you are right.

1- Tree has needles in bunches of 5 -- Eastern white pine (Pinus strobus) OR

1- Tree has leaves – go to 2

2- Leaves opposite each other on the twig – go to 3 OR

2- Leaves alternate with each other along the twig – go to 4

3- Leaves oval; bark gray, with small blocks – Flowering dogwood (Cornus florida) OR

3- Leaves with 3 to 5 main points, toothed edges; bark gray, smooth or with ridges – Red maple (Acer rubrum)

4- Leaves simple (having only one part) – go to 5 OR

4- Leaves compound (divided into several parts); nuts may be on the tree – Hickory (Carya species)

5- Leaves basically oval, with a pointed tip – go to 6

5- Leaves with rounded or pointed lobes (parts that stick out, giving the leaf a unique shape) – go to 8

6- Leaves more than 6 inches long, wavy-edged; bark light gray-brown and flaky – Cucumbertree (Magnolia acuminata) OR

6- Leaves less than 6 inches long, with teeth along the edges – go to 7

7- Leaves have tiny teeth along edges; twig smells bitter when scratched; bark may look like burnt corn flakes – Black cherry (Prunus serotina) OR

7 – Leaves have jagged teeth; twig smells like wintergreen when scratched; young bark shiny, with slashes; old bark black, rough – Black or sweet birch (Betula lenta)

8- Leaves with smooth, rounded lobes – go to 9 OR

8- Leaves with pointed lobes – go to 10

9- Bark pale gray, loose and shredding, especially high on the trunk – White oak (Quercus alba) OR

9- Bark thick, brown, deeply cut into ridges – Chestnut oak (Quercus prinus)

10- Leaves with 4 to 6 pointed lobes, the last two even with each other; bark light gray and furrowed – Yellow-poplar (Liriodendron tulipifera) OR

10- Leaves with 7 or more pointed, bristle-tipped lobes – Scarlet, black or northern red oak (Quercusspecies)