

# Inspecting Virginia Pines

## Standards of Learning

Science 6.1, LS.1, LS.4, LS.5, LS.11

## Objective

Students will:

- Make observations of plants, trees, and leaves around the school
- Apply know of microscope use
- Make slides with Virginia pines using the wet mount method
- Observe leaf sample slides under a microscope
- Record and compare observations
- Identify plants and trees in the area
- Recognize the importance of trees to Virginia agriculture

## Materials

- Various leaves (including conifers [evergreen])
  - Use at least 1 type of Virginia grown pine
- Slides and covers
- Water
- Eye dropper
- Microscope

## Background Knowledge

Virginia's soil and climate are ideal growth conditions for certain varieties of conifers. These evergreens are used as cut Christmas trees as well as planted for planting in yards or forming wind breaks.

The Christmas tree industry is becoming a major aspect of Virginia Agriculture. These evergreens can be found throughout the state, as well as in your region. Some popular species grown in Virginia include:

<u>Costal Plain</u>	<u>Piedmont</u>	<u>Mountains</u>
White Pine	White Pine	White Pine
Scotch Pine	Scotch Pine	Scotch Pine
Virginia Pine	Virginia Pine	Virginia Pine
	Norway Spruce	Norway Spruce
		Fraser Fir

\*information found at [www.ext.vt.edu/pubs/forestry/420-082/table1.html](http://www.ext.vt.edu/pubs/forestry/420-082/table1.html)

The Virginia pine's needles occur in pairs. They are twisted and range from 1.5 to 3" in length. They are relatively short when compared to those of other pines. Loblolly needles, by comparison, are from 4 to 9" long. Individual needle clusters can remain for 3 or 4 years. They are then shed and replaced with new needles as the branches grow in length. The branches are stout and woody. The bark is typical for most pines. It forms plates that are reddish brown in color with shallow fissures or furrows. The bark has a coarse appearance. Cones begin forming



in about the fifth year. They are about 2 inches long and are protected by quite prickly scales. Pollination occurs in early June and cones mature in late September to early November of the following year. Open pollination is used in most Virginia pine seed production. Virginia pine responds well to trimming. And, on Christmas tree plantations their foliage can become extremely dense. As with other pines, these show a tendency to self pruning when grown with competition from other trees. This characteristic becomes apparent after about the sixth year as the lower limbs begin to wither. Virginia pine has been the staple for the Christmas tree industry in the south since its inception.

### **Procedure**

1. Take a nature walk with students and make observations about the trees and plants around the school.
2. Record observations and make sketches in their science journals about the type of trees and plants, leaves, size, etc.
3. Students should collect samples of leaves from the ground around the plants.
4. In the classroom, make slides with the leaf/needle samples.
  - a. Place leaf/needle sample on slide.
  - b. Cover sample with a drop of water.
  - c. Place a slide cover over the sample.
5. Use microscopes to view the leaf sample slides.
6. Record observations in science journals and compare microscope observations with “naked eye” observations from outside.
7. Have students rotate around the room to different microscopes to compare a variety of leaves.
8. Discuss how trees are important to Virginia agriculture – forestry, Christmas trees, plant products, etc.

### **Extension**

- Discuss the structure of the trees, plants, and leaves.
- Observe the plant cells.
- Research the types of trees grown in Virginia and locally in the region.
- Research the use of trees in Agriculture, including the products created from trees and plants.

### **References**

<http://www.ext.vt.edu/pubs/forestry/420-082/table2.html>  
[www.evergreen.ca](http://www.evergreen.ca)

