

Northwest Conifer Identification

Age group: 12 and up

Objective: To learn Northwest native conifers. To learn how to identify conifers using a dichotomous key. Practice noticing details. Learn tree/branch physiology.

Materials:

- *Branch samples with cones (if possible) from as many conifers on the list as possible. The South Puget Sound Community College has most of these trees in the campus landscape.
- * Copies of the Northwest Conifer Key
- * Worksheet
- * A sample key from a book on local flora.
- *An apple for practice keying (optional)

Background: A dichotomous key is

Activity:

- 1) What is plant identification? Why is it important?
- 2) Practice with a simple dichotomous key. Write one using characteristics of people in the group. Start with 1a. Blue eyes 1b. Brown eyes. Then use hair color or height or hair length and so forth. Write the key on the board as you go or write it before hand. Or use the follow overly simplified fruit/vegetable dichotomous key. Show a picture of an apple cut open or bring in an apple. Lets say no one knows what the object in the picture is called, but you have a key that you can use to figure it out.

1a. Fruit

2a. Berry (contains many little pieces of fruit stuck together)

3a. Red.....Raspberry

3b. Blue or black.....Blackberry

2b. Other, not a berry

4a. Has a thick skin, you can peel with your fingers.....Orange

4b. Has a very thin skin

5a. Flesh inside is yellow-orange in color.....Peach

5b. Flesh inside is white.....Apple

1 b. Vegetable

6a. Root

7a. Orange.....Carrot

7b. Red.....Radish

6b. Leaf

8a. Grows in bundle called a head.....Lettuce

8b. Grows as individual leaves on a stem

9a. All leaves green.....Spinach

9b. Leaves and stems multi-colored.....Rainbow

Chard

3). Layout the branch samples with letters or numbers corresponding with each. Break the children into groups of two, three or four.

4). Groups rotate between stations working through the key. Provide lots of assistant at the beginning until the children really understand.

Reflection/ follow up: On walks through the park, stop at different native conifers and test the children's memory. Bring the key along so they can work through it together if they do not know right away. The key will be much easier to use the second time around. The children will quickly be able to identify seed cones or branches to the whole tree.

Ask the children to stay at one station longer, so they can practice drawing the details of the needles or the cone. This is a journal technique botanists use when they do not or cannot take the plant (if the plant is rare or protected) with them from the field to identify in the lab.

Notes on activity: This activity worked very well. I think the children were surprised at how easy the process was and felt successful in identifying the branches correctly. The children picked up using the dichotomous key after the first or second station. It was a morning activity when the children had more focus.

Northwest Conifer Key

- 1a.** Leaves scale-like resembling the skin of a reptile; twig hidden
 - 2a.** Leaf-covered twig flat; seed cone oval.....Western Red cedar
 - 2b.** Leaf-covered twigs round or squarish when cut in cross-section; seed cones spherical, berry-like.....Alaskan yellow-cedar

- 1b.** Leaves needle-like, twig not hidden
 - 3a.** Needles in clusters
 - 4a.** Needles in clusters of 5.....Western white pine
 - 4b.** Needles in clusters of 2.....Shore pine (Lodgepole pine)
 - 3b.** Needles not in clusters
 - 5a.** Needles without a stalk; naked branches smooth
 - 6a.** Branches with needles spreading in all directions, appearing rounded by needles; needles with white lines of stomata on both surfaces
 - 7a.** White rows of stomata on upper surface of the needles
are in a broad central band.....Subalpine Fir
 - 7b.** White rows of stomata on upper surface of the needles
are in 2 separate bands.....Noble Fir
 - 6b.** Branches with mostly horizontal spreading needles; needles with white lines of stomata on lower surface only
 - 8a.** Needles spread horizontally; upper twig bare; branches appear flat; needle notched at tip; pungent; seed cones light green.....Grand Fir
 - 8b.** Upper needles on twig point forward like a mohawk, more or less hiding the upper twig. needles 1-3 cm long;

seed cones purple.....Pacific

Silver Fir

5b. Needles stalked (petiole), leaving the naked twig bumped

9a. Large pointed bud at the tip of the branch.; seed cones with prominent 3- pronged bract which looks like a mouse tail and two legs; stalks fall with needles; needles with one groove on the upper surface and two white bands of stomata on lower surface.....Doug

las-Fir

9b. Stalks or part of the stalk remains on the twig after needles fall

10a. Needles 4 sided, stiff

with a sharp point.....Sitka

Spruce

10b. Needles 2 sided, not stiff

11a. Needles of equal lengths,

apparently alternate,

ending with a fine point,

red berry-like cone.....Pacific

Yew

11b. Needles opposite or spirally

arranged around twig; blunt needle tip

12a. Needles not equal in

length, green above, with

two white bands of stomata

on lower surface; seed

cones 2-3 cm long.....Western

Hemlock

12b. Needles equal in length,

not flattened, densely

covering twig on all sides,

whitish stomata on upper

and lower surface; blue-green

needles 1-3 cm.....Mountain

Hemlock