

## Old Growth, New Mediums

Total Time: 75 minutes

### Overview:

This station introduces students to the unique structural diversity that is a key component of old-growth forests. Students will be able to describe the complex and dynamic nature of an old growth forest and identify dominant species, such as Douglas-fir, western hemlock, salal, and Oregon grape that can be found there. Through art and hands-on activities that emphasize their various senses, students will be able to expand their knowledge of old growth forests while developing a personal connection and appreciation for the organisms that can be found there. This station also helps students expand their listening, observational, and creativity skills, as well as formulate a hypothesis about the role of vegetation in their local forests.

### Rationale:

This station is designed to teach students about the complex structure of old growth forests and how this complexity aids in increasing species diversity. Through place-based activities students will learn some of the major tree species that can be found in Pacific Northwest forests and how the composition of these species varies across forests. By practicing observation and critical thinking while using the senses, students will perceive their surroundings from a new perspective, building skills that aid in empathy and inclusion. Using the arts as an avenue to learning about the environment, students are able to create a connection with the forest that makes a lasting personal impression resulting in caring relationships with nature and environmental stewardship.

**MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.**

### Learning Outcomes:

At the end of this station, middle-school students will be able to:

1. Describe physical characteristics of trees found in old-growth forests developed to adapt to disturbances such as fire.
2. Use sensory observational skills to differentiate trees based on their bark.

3. Describe the ecological and cultural importance of at least two species found in old-growth Douglas-fir forest.

*Framing: We're doing this activity because we primarily use sight as our dominant sense to interact with the world around us. Through this activity we will be able to explore our other senses and how they can be valuable when interacting with a forest. When we use our other senses, we are able to discover characteristics that we might not have otherwise noticed which can be useful when identifying differences between plants and how they have adapted to their environment.*

**Meet a Tree:** 20 minutes

This activity will occur at clearing by the river along the Discovery Trail.

Step One: Have students choose a partner.







Step Two: Demonstrate the activity by using a chaperone.







- Show students how to tie a surgeons knot.
- Define a boundary for the students to use.
  - Have a chaperone stand at one end of the trail and instructor at the boundary along the river during the activity.
  - Remind students not to go off the trail.
- Put blindfold on partner using surgeons knot. Ensure that they cannot see.
- Partner without blindfold leads the blindfolded partner by guiding them with hands on shoulders to a tree within the boundary and on the trail.
  - Discuss ROSE and safety of partners.
- Blindfolded partner will use all their senses to interact with their tree. They will get 1 minute to get to know their tree.
- Sighted partner will lead the blindfolded partner back to the starting point and spin partner gently three times.
- Remove the blindfold and have the partner find their tree by using the sensory observations made. Encourage students to name and hug their tree, as this will help connect them to their tree.
- Switch after the 3 minutes have passed.

Step Three: Run the activity

Step Four: Sharing circle

- Ask each student to share their experience with Meet a Tree activity. What did their trees bark feel like? What do you notice about it now that you are not blindfolded? Did they name their tree?
- Have each student stand next to the tree they picked during Meet a Tree.
- Ask each student if they recognize their tree.
  - Have students examine each element of their tree (bark, leaves, needles, thickness of tree, height, etc.)
    - What differences do the students notice between trees?
    - Certain characteristics, such as thick bark on the Douglas Fir, are adaptations. The thick bark is an adaptation to fire and serves as protection for the Douglas Fir.
- Use this time to introduce students to each tree that they stood next to, learning the names of them( use field guide below).
  - The major trees to cover are: Douglas fir, big leaf maple, Pacific yew, Western hemlock, and vine maple - the field guide has characteristics for each of these trees.

Yew	Western Hemlock	Douglas Fir
		
		
<ul style="list-style-type: none"> <li>● Thin, purple/red, scaly bark</li> <li>● Pointed needles, but not sharp to the touch</li> <li>● Chemical in bark used to treat some cancers</li> </ul>	<ul style="list-style-type: none"> <li>● Thin, brown, finely scaled bark that becomes darker with age.</li> </ul>	<ul style="list-style-type: none"> <li>● Thick gray/brown bark with deep grooves</li> <li>● 1 inch long needles with soft points</li> <li>● Cones have 3-pointed bracts sticking out of scales.</li> </ul>

	<ul style="list-style-type: none"> <li>Glossy needles about ½ inch long</li> </ul>	
<p><b>Western Red Cedar</b></p>   <ul style="list-style-type: none"> <li>Thin, scaly, cinnamon red to brownish bark that tends to shed</li> <li>Tiny, pointed, scale-like leaves</li> </ul>	<p><b>Big Leaf Maple</b></p>   <ul style="list-style-type: none"> <li>Deeply lobed 8-12" leaves</li> <li>Greenish yellow clustered flowers in spring</li> <li>Seed has wing like structure</li> </ul>	<p><b>Vine Maple</b></p>   <p>Grows multiple trunks Blooms with white flowers in the spring Usually only 10-20 feet tall Leaves lobed 7-9 times</p>

- If time allows, use mouse and fire story to learn the different trees and their characteristics.
  - Example story:
    - <https://www.bonsainut.com/threads/the-mice-and-the-douglas-fir-story.24504/>
    - Change tree types for the ones present in HJA.

Move from the clearing by the river along the Discovery Trail to the fork in the trail, away from the river.

**Sit Spot:** 40 minutes

*Framing: This activity is important because just like the scientists and artists at HJA, we are making observations within the forest and synthesizing them to create something, in this case a poem. Poetry is often a challenging form of creative expression, so by creating a haiku, students are able to push their*

*edges and interact with the forest around them in a new way. We also encourage you to take a moment to think about what in this forest you see that you use in your everyday life (say thank you!).*

Step One: Getting started.

Share a short story of a time when something magical happened during a sit spot.

- “You will be sitting along the trail by yourself for 20 minutes, making observations of the forest around you. I want you to sit as quietly as you can so that the critters that are normally afraid of you may show themselves. Try and focus on a few different things around you and see what kind of magic you can find in the old growth.”
- Communicate a signal (crow call, train whistle, etc.) you will use to let them know when to get back together as a group.
- Make sure each student takes a pencil and a blank sheet of paper with them to their sit spot to record any observations through writing or drawing.
- Assign students a sit spot one by one as we walk away from the fork in the trail into the old growth forest. Ensure that there is enough space between each student (ideally, they would not be able to see each other).
- Give examples of what to pay attention to during their time:
  - Can you identify OWLS around you?
  - Pay attention to the sound of the river, is it consistent or is it changing?
  - Can you match the debris on the ground to the plant they fell off of?
  - Are there signs of life around you? Is there more at the beginning of your sit spot or at the end?
  - Try and find something that no one else will have at their sit spot.

Step Two: Run the activity

- After 20 minutes, signal to bring group back together.

Step Three: Bring the group back together

- As students come back into a circle, go around the circle asking students to share their observations or any reflections that occurred during their sit spot time.

Step Four: Write haiku.

- Once students are back together as a group, have them write haikus, on the blank sheet of paper, using the observations they made during the sit spot, either individually or as a group, depending on time.
  
- Share haikus and move to the next station. On the way to the next station, as a transition, go over some plant ID along the trail i.e. Oregon grape, salal, trillium
  - Gather students around plant
  - Have each student share an observation about the plant i.e. for Oregon grape the leaves are opposite (botanists use the terms opposite and alternate - frame) and have toothed margins.

The last 15 minutes are dedicated to walking to and from this station since it is farthest from the pavilion.