Plant Diversity

Objectives:

1. Students will collect and identify 2 plant samples using a plant chart and plant identification guide.
2. Students will construct a plant press to flatten and dry their collected plant samples.
3. Students will determine and compare plant diversity at 2 different locations by counting the number of different plant species observed at each site.

Materials:

- 2 Cardboard Pieces
- 2 Blotting sheets
- 2-4 rubber bands
- Newspaper (optional)
- Instructions
- Data Sheet
- Scissors (optional)
- Writing Utensils

Activity:

❖ **Watch the Plant Diversity Video**

➢ Use the **Vocabulary** to review new words

❖ **Building a Plant Press: (Indoors, At Home)**

➢ Gather all of your materials together from the **Materials List**

➢ Trace the cardboard on your blotting sheets and/or newspaper

➢ Cut out or fold and tear the traced cardboard shape on your blotting sheets. The cut sheets should be the same size as the cardboard.

➢ Place the cut sheets in between the cardboard pieces to make a cardboard sandwich. If you have newspaper sheets too, the newspaper pieces should be in the very middle. When done, the cardboard should be on the outside.

➢ Wrap the rubber bands around each edge of the cardboard sandwich to keep everything in place.

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- ➢ Add your name to the top cardboard piece and decorate if you want. (Make sure not to poke holes through the cardboard!)

❖ **Collecting Plant Samples: (Outside at yard, park, school yard)**

- ➢ Make Sure to Bring:
  - Activity Instructions
  - Plant ID Key and Plant Guide
  - Vocabulary
  - Data Sheet
  - Writing Utensil
  - Plant Press.
  - Scissors (optional)

- ➢ **IMPORTANT!!! Do Not Pick Poison Oak or Poison Hemlock! Check the photos below or check with an adult to make sure the plant you want to collect is not Poison Oak or Poison Hemlock.**

- ➢ **Only pick plants from your property or public property, like a park.**

- ➢ When picking plants, make sure your sample will fit entirely within the plant press.

- ➢ You will only need to collect the leaves, stem and leaves, or flower of a plant. Leave the roots alone.

- ➢ Each plant sample must come from a different place. Choose 2-3 different places. These places can be your yard, a park, a schoolyard, or wherever you are allowed to pick plants.

- ➢ After you have picked a sample, use your **Plant Identification Key** and the Plant Identification instructions below to identify your plant sample. (If you cannot match your sample to anything on the key, you can continue this part at home.)

- ➢ At each place after you collect a sample, stand in one spot. On your **Data Sheet** write down the location and how many **different** plants you can see, standing in that spot. (Be sure to look in all directions to find as many different plants as you can!)

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- ➢ After identifying the plant sample at each location (if you can), place your sample the way you want it to be flattened in between the sheets of the press.

- ➢ Label on the press sheet the place where you collected the sample.

❖ **Identifying Plants: (Outside or At Home)**

- ➢ Use the **Plant Key**, **Diagrams**, **Plant Guide**, and **Vocabulary** to help identify your plant samples.

- ➢ To identify your sample use the **Plant Identification Key** first. Follow the directions on the key to find out what plant species your sample is. This is best to use when you are collecting the sample so you can use the key on the entire plant.

- ➢ If you cannot find the correct identification of your sample, you may need to look online or try iNaturalist (directions on the Plant Identification Key)

- ➢ Once you have identified your plant, label it on the plant press paper and the day's date. Then look it up in the Oregon Plant Guide.

- ➢ Write down one fact you found interesting about the plant on your data sheet.

- ➢ When you are finished close the press using the rubberbands and place it under something heavy, such as a book, for 1-2 weeks so your samples can dry and flatten.

- ➢ After 1-2 weeks you can remove your samples to keep for art projects, creating a plant collection, and more.

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Watch Out for Poison Oak! Leaves of Three Leave Them Be! Poison Oak has leaves grouped together in threes. In the fall, the leaves are changing colors. Poison Oak can grow low on the ground, appear shrubby looking, and can also grow up along trees.

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Watch Out for Poison Hemlock! Poison Hemlock can be confused with Queen Anne's Lace. Every part of this plant is poisonous. Poison Hemlock has smooth stems with purple-red blotches. The flowers are in an umbrella formation, but are in small clumps.

Poison Hemlock

Queen Anne's Lace

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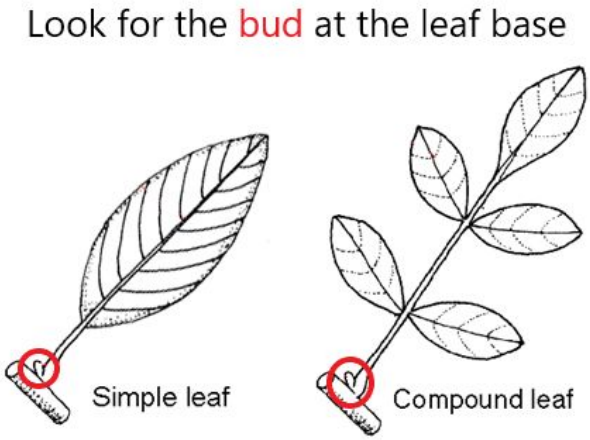
Vocabulary

Biodiversity: the variety of living organisms, habitats, communities, and ecosystems
Areas with high biodiversity will have higher numbers of different living organisms, habitats, and communities.

Botany: The study of plants

Botanist: A person who studies plants

Compound Leaf: A leaf of a plant that has multiple leaflets connected to the same stem (petiole)



Diversity: a variety, a range of different things

Habit: The way a plant grows and its structure (as seen on leaf chart)

Invasive Plant: a non-native plant that can cause harm to ecosystems where they are introduced.

Margin: The edge of a leaf

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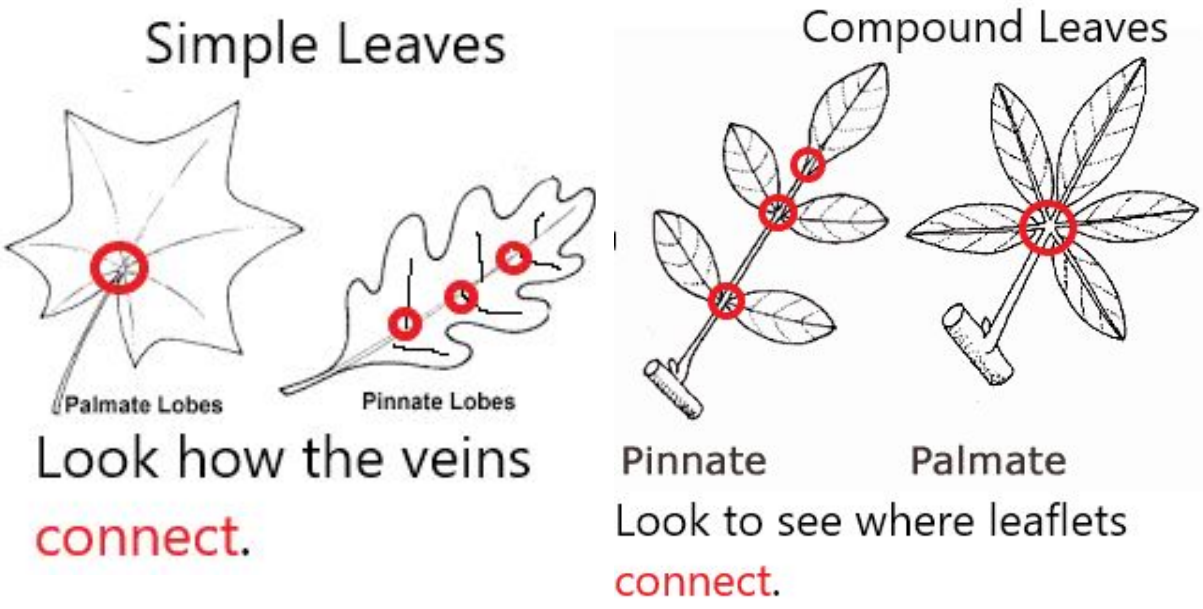
Palmate: Leaf veins or leaflets that originate from a common point, like fingers originate from the palm of your hand



Pinnate: Leaf veins or leaflets along the sides of the leaf

Leaflet: Part of a compound leaf that looks like a simple leaf, but it does not have a bud at the stem. Leaflets are sometimes mistaken for simple leaves.

Native Plant: a plant that developed over hundreds or thousands of years in a particular region or ecosystem.
Oregon Grape is a native plant because it has lived adapted naturally in the Pacific Northwest for hundreds or thousands of years.

Non-Native Plant: a species of plant that was introduced to an area where it does not grow naturally.

Plant Press: A set of equipment used to dry and flatten plant samples

Serrated: Having a jagged or “toothy” edge

Simple Leaf: A leaf that is not broken into multiple parts. A simple leaf only has one solid blade along the veins.

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Data Collection

Site #	Location	# of Plant Species
1		
2		
3 (optional)		

Site #	Plant Sample ID	Plant Fact
1		
2		
3 (optional)		

Questions

1. Which site had more plant diversity?

2. How does plant diversity affect biodiversity?

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Questions (continued)

3. Which site do you think has more **biodiversity**? Why?

4. What is something you can do to help preserve **biodiversity** or increase biodiversity?