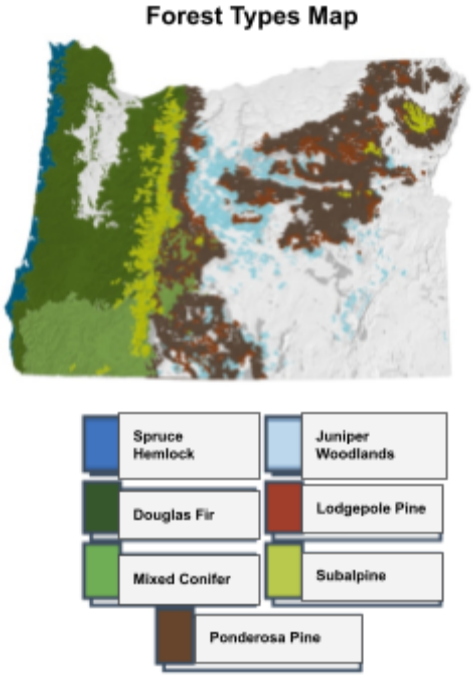
Oregon's Forests

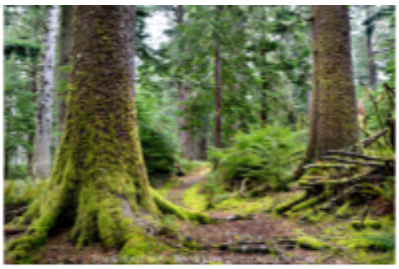
LaCuKnoS Language Booster

Forests are places with many trees where different kinds of plants and animals live. Did you know that in Oregon, nearly half of the state is covered in forests and that Oregon's forests are among the most diverse in the world?

There are two main types of trees in forests: **broadleaf trees** and **conifers**. Conifers are the most common type of tree in Oregon forests. They grow in places with cold, wet winters and have needle-shaped leaves that stay on the tree all year and do not fall off in all conifers but Western Larch. Broadleaf trees are also called **deciduous** trees. They have wide, flat leaves that change color and fall off each autumn and are regrown in the spring.



Differences in **elevation**, climate, wind, rainfall, and **soil** composition determine the forest type typical in each region. In Oregon, along the coast (dark blue on the map) there is a lot of rain and mild temperatures, so a forest of *sitka spruce, and western hemlock* is most common in this area. In the Cascades Mountains above 4500 feet (lime green on the map), where there is cold weather with heavy winter snows, a *subalpine forest* is common. And, in northeast Oregon (brown on the map), where the climate is dry all year and cold in the winter but hot in the summer, there is *ponderosa pine forest*.



Sitka Spruce/Western Hemlock Forest

Subalpine Forest

Mixed Conifer Forest

In contrast, there are no forests in the southeastern portion of Oregon (gray on the map). This area is sagebrush country. It is Oregon's driest region without enough rain or snow for forests to grow. Finally, in cities and towns, where many of us live, we plant different kinds of trees, mainly broadleaved trees, along streets, in parks, and in your own backyard for recreational

Sagebrush country

Urban Forest

and decoration purposes. We called these *urban forests.*

Forest Fact Break: Forest Types
This 90-second animated video looks at forest types in Oregon. Go to this link:
https://oregonforests.org/FOREST-FACT-BREAK-FOREST-TYPES

After watching the video, talk with your partner about these questions, then write your answers.

1. What kind of forest is most common where you live? How is this forest type related to the local environmental conditions (climate, elevation, rainfall)? If there are no forests near where you live, discuss why it is like that.

2. Describe one way that you and your family have used forest land. If you have not used forest land, is there something you would be interested in doing in the forest?

Tree Detective

LaCuKnoS Science Investigation

In this investigation you will learn to identify characteristics of leaves on the different kinds of trees that are present around your school. You will play the role of a **dendrologist** - a scientist who studies trees - and will learn how to use different characteristics of trees such as leaves, bark, flowers, fruits, seeds and buds to learn how to identify them. Knowing about the different trees that live in a certain place can help you understand other important things about that place, such as the climate, wildlife, and human uses.

Materials (per small group):

- Clipboard, marker and pencil
- 2 Tree Detective identification sheets
- 3 labeled resealable plastic bags
- map of the site
- Oregon Forests Map
- Access to the website Tree's of Oregon Forest -https://oregonforests.org/node/21

Procedure:

1. Your teacher will give you a map that shows the study site where you will observe trees.
2. You will go to this area to record observations of trees and to collect leaves and needles.
3. With your group, choose a tree to study. Choose the physical tree and then match it to the same tree on the map. The tree on the map has a number that is the Tree ID.
4. Observe the tree you selected and fill out the Tree Identification Sheet with information about that tree. Note: You can draw or trace the leaves. Or you can make a print of the leaves using the instructions below in page 5.
5. Collect a few leaves or needles from the tree, put them in the bag and add the Tree ID.
6. Next, repeat steps 2-4 for one or two additional trees depending on time.

7. Back in your classroom, work in your group to examine the leaves you collected and sort them into categories. You can use the leaf characteristics hand-out to learn some more characteristics of leaves.

8. These questions can help you make categories of leaves based on similar and different features:

    - Do any leaves have teeth (jagged edges)?
    - Do any have hairs? Where?
    - What do the leaves feel like?
    - Who found the biggest leaf? The narrowest leaf? The smallest leaf?
    - Have any leaves been eaten by insects? How can you tell?
    - Can you trace the veins on your leaves with your fingers?

Put your leaves in categories in the space below

9. In the website Tree's of Oregon Forest (see the materials list), choose the geography (where you are) and the type of tree you want to identify (coniferous or deciduous), and using your drawing of the shape of the tree, look for the picture of the tree that resembles it. Then look at the picture and information of the tree, and using the leaves you collected, see if it is the tree you saw

In your small group, use your Tree Identification Sheet, your leaves, and the Oregon Forestry Map to discuss and answer the following questions.

Tree Detective

LaCuKnoS Investigation Summary

Practice: Construct an argument from evidence

Based on the Oregon forest map, what kinds of trees would you expect to find in your community?	Based on the leaves you collected, what kind of forest do you think you have around your school?	How can you explain any differences between the map and leaves you collected?

What language would you use to describe to your family the different characteristics of leaves you learned about in this activity?

What language would a Dendrologist use to describe the different characteristics of leaves you learned about in this activity?

STEAM Extension Activity: LEAF PRINTS or LEAF RUBBINGS

Materials: Inked stamp pad, paper, crayons.

Directions:
Create an art project with the leaves you collected. Try making leaf prints by pressing the back of a leaf in the stamp pad two or three times and then pressing it onto a piece of paper. You can also make leaf rubbings with a crayon and piece of blank paper by placing the paper over the leaf and rubbing with the side of a crayon.

Be creative and see what other art projects you can think of that use your leaves!

Resources

Common Trees of the pacific Northwest
http://treespnw.forestry.oregonstate.edu/
The purpose of this site is to help you identify common conifers and broadleaves in the Pacific Northwest.

Oregon's Forest map:
https://oregonforests.org/node/86;
and poster:
https://oregonforests.org/sites/default/files/2020-04/OFRI_forest-types-poster-2017_WEB.pdf

Trees to know in Oregon and Washington.
By Edward C. Jensen (2020)
Oregon State University

Oregon Urban Forest
https://www.oregon.gov/odf/forestbenefits/Pages/urbanforests.aspx

Tree Detective
LaCuKnoS Concept Cards

Broadleaved trees/ árboles de hoja ancha

Trees with wide, flat leaves. The leaves change color and drop off each autumn and regrow in the spring. They produce their seeds from pollinated flowers.

Árboles con hojas anchas y planas. La mayoría cambia el color de sus hojas, las deja caer cada otoño y las vuelve a crecer en la primavera. Producen sus semillas a partir de flores polinizadas.

Tourists often visit forests with broadleaf trees in autumn to watch the leaves change colors.

Concept Card

Conifers/coníferas

Trees that have needle-like leaves that produce hard oval-shaped fruit called cones. Most of them never lose all their leaves and stay green year-round.

Árboles que tienen hojas en forma de agujas que producen conos, una fruta dura de forma ovalada. La mayoría de ellos nunca pierden todas sus hojas y permanecen verdes durante todo el año.

Oregon forests are famous for their large conifers.

Concept Card

Deciduous/caducifolio

Trees or shrubs that lose their leaves during part of the year.

Los árboles o arbustos que pierden su hoja durante una parte del año.

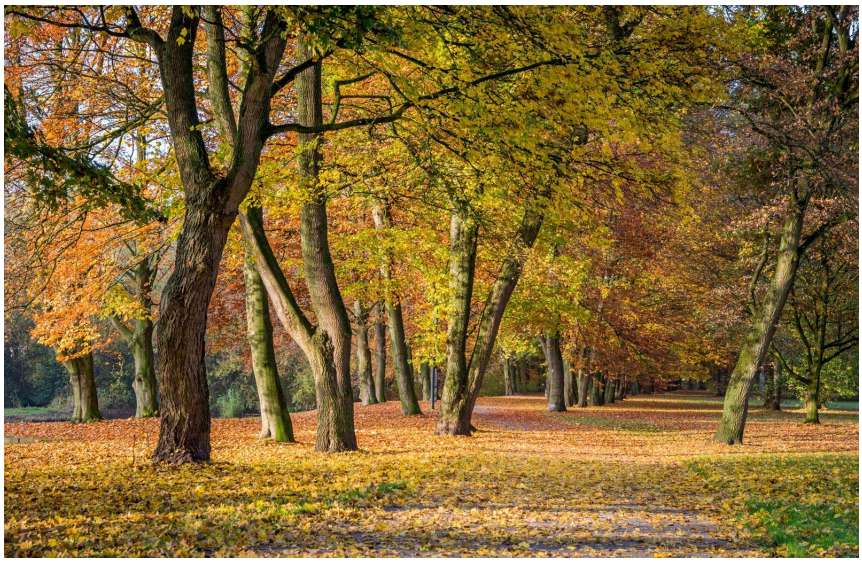


Image: © tomikk/Fotolia

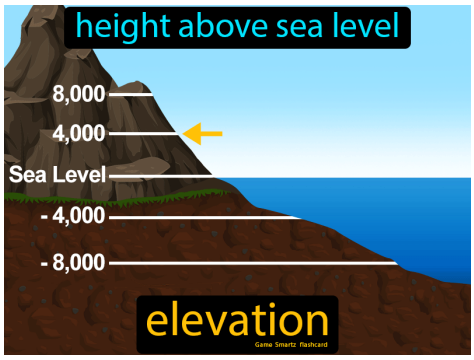
People often plant deciduous trees in their yards and neighborhoods.

Concept Card

Elevation/elevación

Height above or below sea level.

Altura por encima o por debajo del nivel del mar.



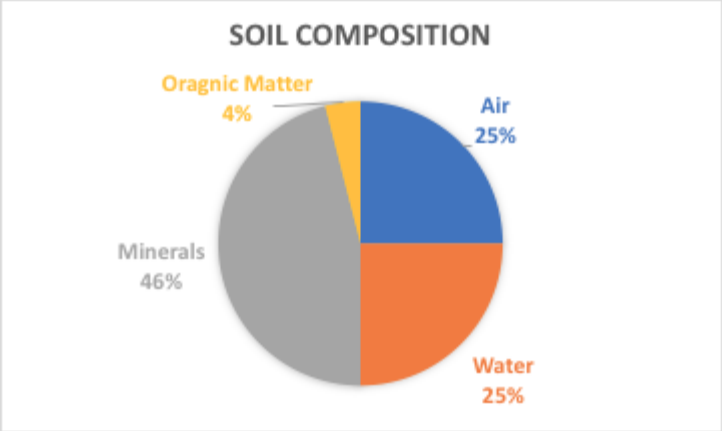
The elevation in Oregon changes from zero feet along the coast to many thousands of feet in the mountains.

Concept Card

Soil/suelo

The top layer of the Earth's surface that supports and nourishes plants. It is a mixture of organic material coming from plants, animals, and microorganisms, and minerals, water, and air.

La capa superior de la superficie de la Tierra que sostiene y nutre a las plantas. Es una mezcla de material orgánico que proviene de plantas, animales y microorganismos, y de minerales, agua y aire.



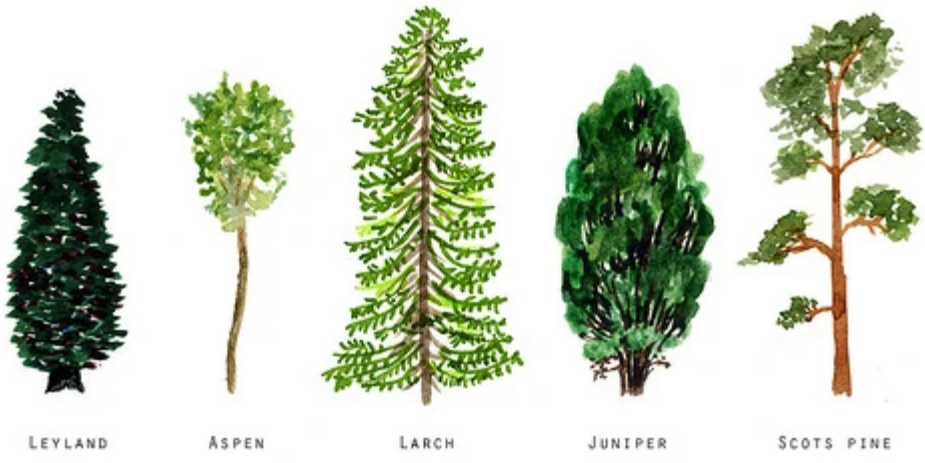
Farmers often add fertilizers to their soil to help their crops grow.

Concept Card

Dendrologist/dendrólogo

A dendrologist studies the identification, distribution and classification of trees and shrubs and their woods.

Un dendrólogo estudia la identificación, distribución y clasificación de los árboles y arbustos y sus maderas.



Carmen's mother is a dendrologist who works for the Forest Service.

Concept Card

Tree Detective

Tree Identification Sheet

Tree ID

Draw leaf

Draw shape of tree

Broadleaf or needles: _____

Color and texture of the bark/trunk: _____

Fruit, flowers or cones: _____

Tree ID

Draw leaf

Draw shape of tree

Broadleaf or needles: _____

Color and texture of the bark/trunk: _____

Fruit, flowers or cones: _____

Leaves' Characteristics