

Teacher's Guide

Activity 3 – Grades 6th – 8th

GOAL:

To learn about forest health

VOCABULARY:

forestry, forester

BACKGROUND:

Oregon is a great place to grow trees! In Oregon we use our forests for many purposes: recreation, habitat for wildlife, wilderness preserves and growing trees for use by future generations. Many professionals are involved in the many aspects of growing trees in healthy forests. Forestry is the science of developing, caring for, cultivating and managing forests. In Oregon we have an internationally recognized School of Forestry at Oregon State University. Foresters work for industry and federal, state and city agencies using the latest technology to grow the best possible trees under the best possible conditions

Each year in Oregon more trees are lost to fire, insects and disease than are harvested for commercial purposes. Oregon has strict environmental regulations that require replanting whenever trees are harvested. These regulations are called Oregon's Protection Laws.

In the past few years, fire has become an increasing issue in our state. Fires need heat, fuel and oxygen to burn. Fire can be caused by nature or set intentionally. Foresters also use fire as a management tool.

STUDENT ACTIVITIES:

Define forestry, foresters.

Discuss forest fires.

- How do they start? (lightning, carelessness, intentionally set for management purposes)
- What are the three elements that a fire needs to burn? (heat, fuel and oxygen)
- What is the fuel for forest fires? (dry trees and grass, dead trees, leaf litter)
- How does weather effect the spread of fire? (Hot temperatures and winds can dry out the forest, creating fuel. The stronger the winds, the more rapid the drying of vegetation. Wet springs encourage hardy growth. When a wet spring is followed by a hot summer, more fuel is available to burn.)

Using a candle, demonstrate the three elements that are needed to keep a fire burning.

- Place a small lighted candle (a birthday candle works well) in a jar. Have a student seal the jar with a lid. This will cut off the oxygen supply and the fire will go out. One way of suppressing a fire is to remove the oxygen.
- Light the candle again. Have a student start to seal the jar with the lid, but this time remove the lid at the last moment. This is similar to a gust of wind re-igniting a dying fire.
- Take the lid off the jar and let the candle burn until the fuel (the candle) is consumed. When the fuel is gone, the fire will go out. Have students predict how long it will take for the candle to use all it's fuel. The most common way to manage a forest fire is to remove the fuel. This would include setting a backfire or creating a fire line by clearing all the potential fuel.
- Place a second candle in the jar. Rest a toothpick against it. Predict if the toothpick will catch on fire. Light the candle. Let it burn. Does it consume the toothpick? This illustrates how trees catch on fire in stands.
- Light a third candle in the jar. Have a student extinguish the fire by adding water, thus removing the heat. Water is still the primary means for extinguishing forest fires.

Discuss forest fires. Does every tree in a given area burn in a fire? Discuss the issue of salvage logging. What are the benefits to harvesting dead trees? Ask the students to write an opinion paper based on research about salvage harvesting.

EXTENDED ACTIVITIES:

- Invite a forester to visit your classroom. Larger cities have urban foresters, or contact your local state forestry office.
- Learn more about attending college and studying forestry. Visit: www.napfsc.org
- Invite a firefighter to visit your classroom.

- Learn more about forest fires. Visit: www.keeporegongreen.org
- Learn more about Oregon's Forest Protection Laws. Visit: www.oregonforests.org