

LESSON PLAN

How Bad is Your Bark?

Caritas Mission Statement

Caritas Creek's mission is to help young people discover the connection between all living things; to build bridges between diverse socio-economic and ethnic groups; and to foster in youth a deeper connection to the natural environment, to self, to the spirit of love, and to community.

Objectives

Students Will:

1. Develop an understanding of the inner workings of a Redwood tree.
2. Discover similarities between humans and trees and the challenges we all face.
3. Develop empathy for Redwood trees by gaining knowledge about what they face.

Method

Students will participate in an activity that will help them relate to Redwood trees.

Background

California's North Coast provides the only environment in the world to successfully grow Coast Redwood trees. The cool, moist air created by the Pacific Ocean keeps the trees continually damp, even during summer droughts. These conditions have existed for some time, as the redwoods go back 20 million years. Exactly why the redwoods grow so tall is a mystery. Many of the trees still standing today are 600 to 2,000 years old.

Resistance to natural enemies such as insects and fire are adaptations of a Coast Redwood. Because of tannin in the bark, diseases are virtually unknown and insect damage insignificant. Thick bark and foliage that rests high above the ground provides protection from all but the hottest fires.

The redwoods' amazing ability to regenerate also helps in their survival as a species. New sprouts may come directly from a stump or downed tree's root system as a clone. Burls, hard, knotty growths that can grow branches or new trees on a living tree, can sprout a new tree when the main trunk is damaged by fire, cutting, or topping.

The complex soils on the forest floor contribute not only to the redwoods' growth, but also to a diversity of greenery, fungi, and other trees. A healthy redwood forest usually includes Douglas-firs, Western Hemlocks, Tan Oaks, Madrones, and other trees. Among the ferns and leafy redwood sorrels, mosses and mushrooms help to regenerate the soils. Redwoods themselves eventually fall to the floor where they can be returned to the soil.

The Coast Redwood environment recycles naturally: because the 100-plus inches of annual rainfall leaves the soil with few nutrients, the trees rely on each other, living and dead for their nutrients. The trees need to decay naturally to fully participate in this cycle, so when logging occurs, the natural recycling is interrupted.

The main purpose of this activity is to help students learn more about these amazing trees and some of the challenges they face.

Materials

None needed.

Procedure

Toneset: Introduce the activity by asking the students what some of the challenges are that humans face in order to survive. What do we need? Explain that just like us, Redwoods face certain survival challenges. What do Redwoods need? What do they need to protect themselves against? (Forest fire, insects, weather etc.)

1. Students split into groups of 5. One student stands in the middle of the circle to represent the xylem and cambium. Three students represent the bark and make a circle holding hands around inner layers of the tree. 1 student represents either fire or an insect, trying to get into the middle of the tree.
2. On the count of 3, the fire/insect tries to tag the cambium. The job of the bark is to prevent this ...

Cabin Leader Role

The cabin leader can easily play this game are also needed to facilitate and or even out the groups.

Extensions

Pre-Activity

*Build a Tree

*Forest Fire Ecology

Post-Activity

*Redwood Family Circle

Assessment

Group Discussion:

1. What did you learn in this activity?
2. Which role was the hardest to be? The easiest? Why?
3. What tactics did you use?
4. The bark helps to protect the cambium while it grows. Who in your life is your "bark"? How can you be someone else's bark?
5. How does this activity relate to Self, Others, Nature and God?

Age: Grades 5-8

Subjects: Social Studies, Science

Skills: Observation, Invention, Application

Duration: 10 minutes

Group size: 10-30 students

Setting: anywhere

Catholic Social Teaching Principle: Stewardship of God's Creations

Archdiocese Religious Standards:

California Science Standards:

5th grade (2.f, 2.g) –Life Sciences

6th grade (5.a) –Life Sciences

7th grade (5.a) –Structure and Function in Living Systems

8th grade (6.a, 6.b) –Life Sciences

Key Vocabulary: Redwood, Cambium, Tannic acid, Heartwood, Xylem