

Leafy Spurge Activities

Science Project. Cork-like and Wax-like Plant Defenses.
Play Audio Track #3
(20 minutes)

Levels
Grades 4-8

Subjects
Science

Skills
Observing, Investigating, Comparing, Describing, Discussing

Concepts
Structure and functions of living things; interactions among technology, science and society

Objectives
Students will learn mechanisms that plants use to protect their physiology.
Students will learn how to conduct a scientific study.

Materials (20 student class-size)
What's in Your World? CD audio track #3 (inside the back cover) - 1 per class
water and dish soap
5 bowls - 1 for each small group
5 eye-droppers - 1 for each small group
wax paper

Time Considerations
Preparation - 30 minutes
Activity - 20 minutes

Lesson Overview
• Cork-like and Wax-like Plant Defenses (20 minutes)

Background
Plants and animals all over the world have various types of a defense system. Turtles carry a shell that protects them from predators. Some insect bodies look like the leaf they feed on and predators cannot see them. Sage brush forms a bitter taste in its leaves and animals don't like the taste and leave it alone. *Can you think of some others?*

Leafy spurge has a waxy coating on its leaves that helps it hold water--allowing it to grow in very dry areas. The waxy coating helps the plant repel herbicide which makes it very hard to control. When land managers try to stop leafy spurge from growing by applying herbicide--a soapy-like "surfactant" is added to the herbicide mixture so that it doesn't slide off the plant's leaves.

Let's test it!

SCIENCE PROJECT LESSON DETAILS

STEP ONE. Arrange the students into 5 groups and give each group a bowl of water, dish soap, 1 eye-dropper, and a piece of wax paper. Tell the students to lay their piece of wax paper flat on the table. Ask the students to select one person from their group. Tell the student to use the eye-dropper and drop one drop of water on one side of the paper.

STEP TWO. Ask each group to select a second student from their group. Tell the second student to add a few drops of dish soap to the water in the bowl. Ask the first student to turn the piece of wax paper over and use the eye-dropper to put several drops of soapy-water on the "other" side of the wax paper.

STEP THREE. Ask the students--*Is there any difference?* Next ask each group to describe what they saw and consider any differences between groups.

STEP FOUR. Next, if the experiment is successful, ask the students--*Why does the water stay in a droplet form? Why does the soapy water spread out?*

Explain to the students that plain water has a positive charge with surface tension and stays in a droplet form. When soap is added to water the charge changes from positive to negative. The soapy-water has a negative charge--breaking down the surface tension and allowing the water to spread.