



Sprouting Pollution Classroom Activity



Water supplies can be polluted by substances that are disposed of improperly. Many ordinary and useful household products can be hazardous if they are present in the water used by plants, animals and people. In this experiment your students will observe the effects of various items on the growth of sprouting seeds.

SYNOPSIS

Students will conduct an experiment designed to test the effects of items commonly found at home.

OBJECTIVES

Students will be able to:

- explain that different substances can be pollutants.
- describe that some pollutants cause harm to organisms, while others have little or no effect
- follow the scientific method for conducting experiments.

VOCABULARY/CONCEPTS

- pollution

MATERIALS

- 8 identical small glass jars
- masking tape
- bean seeds
- scissors
- masking tape
- various liquid household products (orange juice, liquid soap, hydrogen peroxide, stain remover, olive oil, etc.)
- Lab Notebook Worksheet
- large sponge
- 1 tablespoon
- permanent marker
- 1/4 cup measure
- rubber bands
- water
- plastic wrap

PROCEDURE

Before the activity begins, discuss with students how scientists perform experiments. Scientists keep all variables constant with the exception of the one that they are testing. During this activity, students will be scientists and study how pollution can affect plants in the environment.

Display the household items you are going to experiment with and discuss what each item is used for and what might happen if it were dumped into the ecosystem.

As a group, set up and complete the following steps:

1. Carefully wash and dry jars.
2. Cut pieces of sponge to fit into the bottom of jars.
3. Prepare the water solutions by adding one tablespoon of product to a 1/4 cup of water. Be sure to wash the measuring cup and spoon after each use.
4. Pour just enough of the prepared solution into each jar to come half way up on the sponge.
5. Place three bean seeds on top of each sponge.
6. Label each jar with tape and a marker.
7. Cover each jar with plastic wrap and secure it with a rubber band. The wrap will not need to be removed until the experiment is finished.
8. Important: Two jars should have only water with no household products added to it. These are the “control” sprouts that the others will be compared against.
9. Place the jars in a sunny location and wait.

HANDS-ON ACTIVITY

Have students make predictions on which mixtures will be harmful to the bean sprouts, and which will not. Explain to them that they will be comparing the sprouts in the jars that contain mixtures to those in the pure water jars.

Decide at what intervals you will check the sprouts. The final observation should take place about two weeks after the start of the experiment. Have students observe the growing sprouts closely to look for differences.

Have students record their data on the Lab Notebook Worksheet.

CHECK FOR UNDERSTANDING

Discuss with students the effects of pollutants in the ecosystem. Encourage them to share their ideas on how the pollutants get into the water in their community and what can be done to help protect the plants and animals that use the water.

Lab Notebook Worksheet

Jar #	Substance	Prediction	Day ____ Results	Day ____ Results	Day ____ Results