

It's A Small World

OBJECTIVE: To explain the concept of an ecosystem and how pollution affects our environment.

MATERIALS: 2 aquariums or large restaurant type jars, gravel, soil, blooming plants, snails or insects (such as towbugs, millipedes, and earthworms), water, contaminants (such as: vinegar, salt, motor oil or other non-hazardous items), **HANDOUT:** Ecosystem at Work (A33)

VOCABULARY: ecosystem, pollution, transpiration, condensation, percolation

BACKGROUND:

Our environment is a complex web of air, water, soil, plants, animals and a host of other resources. Through direct and indirect links if one resource is affected all others are too. If a tree is cut down a home is lost for small animals, a source of oxygen is gone and a barrier against soil erosion is removed. These ramifications in turn create even more troubles.

Pollution travels along links in the environment creating more pollution. Certain air emissions rise into the atmosphere to become air pollution. Some of the pollution attaches to water droplets then falls back to the ground as rain. The polluted rain falls on the land creating, through percolation, soil pollution and into bodies of water creating water pollution. It is important to think about the widespread problems pollution or other environmental change can cause.

PROCEDURE:

1. Ask the children to search for an article in newspapers or magazines about pollution. A parent or guardian should help the children. Give them a week to find an article.
2. Each child should read the article with an adult and be able to explain what caused the pollution (oil spill, air emissions, nuclear power), where the pollution occurred (Canada, Atlantic Ocean, atmosphere, etc.) and what kind of pollution it was (air, water, soil, etc.).
3. Discuss pollution with the class. Ask a number of children to explain what they read about in their article. Now explain the idea of an ecosystem. Be sure to mention how plants, animals, people, air, water and soil are all interconnected in an ecosystem. Use the **HANDOUT: Ecosystem at Work** (A33). The Biosphere in Arizona is a good example of an ecosystem.
4. The class now builds two mini-ecosystems. Two aquariums are the ideal containers; the children can see the project in cross section. Place 3 cm of gravel at the bottom of each container and then add soil to a depth of 5-10 cm. Add healthy plants to each ecosystem. Blooming plants are preferred as they will better illustrate the difference between the two ecosystems. Snails or bugs could be added to the first container. It is not suggested to add these organisms to the second container as they will be killed by the next step.