

## WATERSHEDS: THE CLEANUP JOB

**Grade level:** K-6

**Objective:** Students will explain the importance of soil and healthy watersheds in purifying water.

**Materials:** flowerpot, large clear bowl, cotton, clear jar or glass, 2 or 3 charcoal briquettes, enough soil to fill the flower pot, 2 cups of water, hammer, plastic bag.

**Background information:** A watershed is a land area that drains into a natural body of surface water. Any rain that falls or snow that melts in this land area runs off or drains into that body of water (unless it becomes groundwater). A healthy watershed both filters and stores water for a river or stream. As water percolates through the soil in the watershed and into the water table, the soil filters out many impurities it may carry.

We don't often think about where precipitation goes after it hits the ground. Runoff from precipitation can carry many pollutants with it, including motor oil, gasoline, antifreeze, and soil, among others. This runoff water either sinks into unpaved soil or is carried into a body of surface water somewhere downslope. The pollutants carried by the runoff then contaminate surface and groundwater.

Watersheds play an important role in filtering and storing water. A watershed with plenty of trees and other vegetation, but little pavement or exposed soil, can help filter out many nonpoint source pollutants in runoff before they reach bodies of surface water. They can also help prevent flooding by allowing water to soak into the soil.

### Procedure:

1. Block the hole in the bottom of the flowerpot with a ball of cotton.
2. Pour about a teaspoon of soil into a jar of water and stir. Add just enough soil to make the water muddy.
3. Put 2-3 charcoal briquettes in a plastic bag and crush them with a hammer.
4. Mix the crushed charcoal with the soil and fill the flowerpot.
5. Hold the flowerpot over the bowl and *slowly* pour about half of the muddy water into the pot.
6. Compare the water in the bowl with the water remaining in the jar. The water in the bowl should be relatively clean. NOTE: The water is still not drinkable.

Explain to your students that a healthy watershed, like the flowerpot model, can clean certain nonpoint source pollutants from water. Ask your students how a healthy watershed cleans water. (It does this by slowing down water and allowing it to filter gradually through the soil. It also cleans water by moving it through organisms such as plants.) Ask your students what characterizes a healthy watershed (e.g. lots of vegetation year-round, no pollution from industry, urbanization, or agriculture, minimal pavement and construction).

Taken from On the Trail of Nonpoint Source Pollution, produced by Two Herons Environmental Consulting for the Soil and Water Districts of Butler, Clermont, Hamilton, and Warren counties in Ohio. 1992.

