
Give drinking water a hand.

# CLASSROOM ACTIVITY: WATER CONTAMINATION

The following activity is offered to help students understand how they can give drinking water a hand.

### Objective
Students will create a miniature well so they can observe the effects of ground water contamination.

### Taxonomy Level
Comprehension

### Time Needed
30 minutes

### Teacher's Notes
Approximately 53 percent of the population in the United States gets its water from underground aquifers. An aquifer is a geological (created by rocks) formation containing water. Like the holes in a sponge, an aquifer has openings or pores that can store water. Water for drinking is drawn up to the surface by a well or spring. The world's largest aquifer is the Ogallala Aquifer which extends from Nebraska to Texas.

Since water seeps down through soil into the aquifer, the soil filters the water. But, many activities threaten the safety of this source of drinking water. Gasoline and other harmful liquids have been allowed to leak from underground storage tanks into the ground water supply. Pollutants can seep into ground water from poorly constructed landfills or septic systems. Ground water can also be polluted by runoff from fertilized fields or livestock areas. Homeowners unknowingly contribute to ground water contamination by dumping toxic chemicals down the drain or pouring them on the ground.

### Materials Needed
Cup for each student
6 inches (150 millimeters) of nylon net per student
Plastic tie for each student
One eyedropper for every three students –
One bottle of vegetable-oil food dye (red, green, or blue) for every three students
Enough water to fill each student's cup
Enough potting soil to fill each student's cup
Pencil for each student

### Activity Directions
Students should wrap the nylon around their pencil and secure it with the plastic tie. Put the nylon-wrapped pencil in the middle of the cup, so it can act as a "well." Carefully place the soil in the cup around the nylon-wrapped pencil. Finally, untie the plastic tie and slip the pencil out of the soil (allowing the nylon to remain in the hole) and pour water into the cup.

After a few minutes, the water should appear in the opening of the well. Students should remove water with the eyedropper and see that it is clear in color. After returning the water to the well, students can add a drop of food dye to the surrounding soil to represent contamination. After a few minutes, remove water again with the eyedropper. This time the water should have color in it from the dye.

### Questions to Expand Students' Thinking
What would happen to the lakes and rivers that are fed by water from this aquifer?

What types of things in your household, if poured on the ground, might contaminate drinking water?

Should you throw toxic household items in the trash?

Source: Intermediate Te 3DX, American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235.