

# Water Contamination Experiment

**The following experiment is designed to help young people understand how drinking water counts on them to prevent water pollution.**

**Objective** *Young people will create a miniature well so they can observe the effects of groundwater 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 groundwater supply. Pollutants can seep into groundwater from poorly constructed landfills or septic systems. Groundwater can also be polluted by runoff from fertilized fields or livestock areas. Homeowners unknowingly contribute to groundwater contamination by dumping toxic chemicals down the drain or pouring them on the ground.



# Water Contamination Experiment

## 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 a 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?

## Count on Blue Thumb for More

If your class or youth group wants to learn more about how drinking water counts on everyone to use their Blue Thumbs to protect our water resources, visit our Web site:

<http://www.awwa.org/bluethum.htm>

or write to:

**Blue Thumb Club**  
**American Water Works Association**  
 6666 West Quincy Avenue  
 Denver, CO 80235  
 (303) 794-7711, ext. 6284



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