

LESSON 2

Water and Sanitation for All: Bringing the Issue Home

An Elementary School Unit (Grades 3-5)

HOW DOES OUR WATER GET CLEAN, AND WHY DOES IT MATTER?

TOTAL TIME: 45 MINUTES

Objectives

Students will:

- Become familiar with the water cycle.
- Better understand the water treatment process.
- Better understand the dangers of unclean water.

Materials Needed/Setup

- U.S. Environmental Protection Agency: “Thirstin’s Water Cycle Adventure” found at http://www.epa.gov/safewater/kids/pdfs/graphic_grades_k-3_watercycle.pdf.
- Cotton balls and paper towels
- Two plastic cups per student—half of the cups pierced with small holes in the bottom
- “Dirty” water (water mixed with a combination of soil, food coloring, and/or vegetable oil)
- Handout #4: “Habu and Diana”

Directions

1. **(5 minutes)** Ask students where they think the water from their faucets and hoses comes from and where it goes when they pull the plug or flush the toilet. What can happen if your drinking water isn’t clean or you don’t have flush toilets?
2. **(20 minutes)** Tell students that they are going to learn about how water is made safe for people to drink. Put students in small groups. Distribute the U.S. Environmental Protection Agency handout “Thirstin’s Water Cycle Adventure.” Go over the diagram to define unknown terms and

As a whole class or small group activity consider watching an interactive explanation of the water cycle provided by the U.S. Environmental Protection Agency at http://www.epa.gov/safewater/kids/flash/flash_watercycle.html.

to familiarize students with the basics of the water cycle. Ask students to look at the places where the water comes from (rain, groundwater). What might the water in the well have in it? (Dirt, rocks, pollutants, animal feces) Tell students that before a person can drink water, it has to be cleaned and filtered. Students will now create their own water filter to see how it's done.

3. **(20 minutes)** Distribute cotton balls, paper towels, and plastic cups to each group. Take students through the following steps:
 - Line each pierced cup with a layer of paper towel and place each pierced cup about halfway down inside a nonpierced cup.
 - Add cotton balls to each pierced cup; these and the paper towel will act as the filter.
 - Add “dirty” water to each cup.
 - After the water has run through, students should pull out the “filter” cup and examine the water that's left in the other cup. They can pour the water through the filter again to see if the water gets cleaner each time.
4. Explain to students that even if the water looks clean, it still isn't safe for drinking. Microbes, or invisible particles in the water, can be cleaned with chemicals and other treatment methods. To purify their water, people in places where UNICEF works use filters that remove both solid substances and microbes. They know that even if water in a river or stream looks clean, they shouldn't drink it—just as the students shouldn't drink untreated water, even if it looks clean. Ask the students if they know how their water gets cleaned.
5. **Homework:** Distribute Handout #4, which includes two short stories about Habu and Diana. Instruct students to read the stories of Habu and Diana and draw pictures to illustrate one or more parts of the story.

With older students who might benefit from additional writing practice, have them write a story about their own water use during a typical morning.

Habu and Diana

Read the two stories below, and draw a picture to go with each one.

Habu

Habu lives in Niger, in Africa. When he wakes up in the morning, he gets dressed and walks to the outdoor water tap that his family shares with neighbors. He takes a drink of water. Habu puts a bucket under the tap and fills it. He carries the water back home to his family. Habu's mother pours some water into a large pan so that Habu can wash himself. When Habu is done, his mother uses the bath water to feed the plants in her garden.

Diana

Diana lives in Ohio, in the United States. When she wakes up in the morning, she walks to the bathroom in her house and turns on the tap. She takes a drink of water. Diana's mother turns on the water in the tub so that Diana can have a bath. She adds lots of bubbles to Diana's bath. When Diana is done, she pulls the plug, and the water goes swish down the drain.