



Down the Drain



Objective: Given classroom experiments, the students will explore ways to conserve water.

Vocabulary

- conserve
- limited

Materials

- Water Usage cards on page 54
- Which Conserves More Water? worksheet on page 55
- access to a sink or faucet
- 2 plastic tubs or containers, one should fit in sink under faucet
- overhead projector, chart paper or interactive whiteboard, and appropriate markers
- measuring cups



Preparation

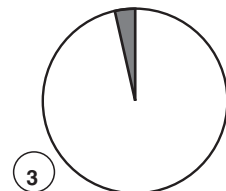
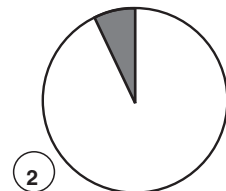
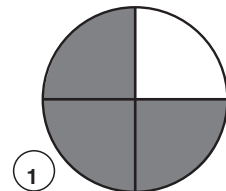
1. Enlarge the Water Usage cards as needed for a classroom display.
2. If a sink is not available in your classroom, arrange to use another one on site.
3. Copy the “Which Conserves More Water?” worksheet for each student or group of students.

Opening

1. Ask the students what it means to *conserve* water. Explain that to *conserve* means to save and not waste.
2. Write the following question on the transparency or whiteboard: “Why should we save water?” Guide students toward the following ideas.
 - Water is a *limited* resource—only so much of a resource is available to use.
 - People need to use water to grow food if there is not enough rain.
 - Water is an important resource.
 - People need water to live.
 - People use water to cook food.

Part 1

1. Draw a circle on the transparency or whiteboard. Tell the students that it represents our planet, Earth.
2. Ask the students if they know how much of Earth consists of water. (about three-fourths) See diagram 1.
3. Shade in a diagram to show three-fourths of Earth.
4. Ask the students if they know how much of this water is safe to drink.
5. Carefully erase most of the shaded “water” to indicate that about 3% is freshwater not salt water. See diagram 2.
6. Carefully erase most of the remaining freshwater to show that about $\frac{3}{10}$ of all freshwater is safe and available to drink. See Diagram 3.





Down the Drain *(cont.)*

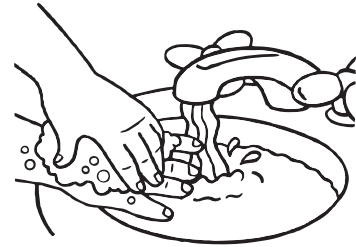


Part 2

Tell the students they will perform two experiments to compare different ways to do things with water to learn how to conserve it.

Experiment 1

1. Display the appropriate hand-washing water usage card. Ask a student to describe the process used to wash his or her hands.
 - a. *turn on water*
 - b. *get hands wet*
 - c. *apply and lather soap*
 - d. *rinse hands*
 - e. *turn off water*
2. Ask the students to estimate, or guess, how many cups of water that process uses. Record the estimate on the card.
3. Set up the experiment. Place a tub in the sink to keep water from going down the drain.
4. Have a student volunteer wash his or her hands following the process described above.
5. Have the students use measuring cups to measure the water in the tub. Pour the water into a second container after measuring and, if possible, pour that water on a plant, in the garden, on the lawn, or use it to rinse art supplies.
6. Record the amount of water used when washing hands and leaving the water running.



Experiment 2

1. Suggest that the students turn *off* the water while they are using the soap.
2. Have the students estimate how many cups of water they would use if they turned off the water for the soaping part of the process. Record the estimate on the appropriate water usage card.
3. Replace the plastic tub in the sink and have another student volunteer turn off the water while using the soap to wash his or her hands.
4. Have the students use measuring cups to measure the water in the tub. Pour the water into a second container after measuring and, if possible, pour that water on a plant, in the garden or on the lawn when finished with it.
5. Record the amount of water used when washing hands and turning off the water.
6. As a class, compare the two methods of hand washing and fill in the blanks on the appropriate water usage card.
7. Create a chart showing the amount of water used in each hand-washing situation. Fill in a cell for each cup of water used or draw a water drop in each cell. (See the table below.)

Hand Washing										
Water Running										
Water Turned Off										



Down the Drain *(cont.)*



Part 3

1. Hand out copies of the Which Conserves More Water? worksheet to each student or group of students.
2. Ask students to color the picture in each row that conserves more water.

Closing

1. Brainstorm with the students some ways we can conserve water at home and school. Use the suggestions below as prompts if needed.
2. Ask the students which idea they would like to try to put into practice this week. If possible, revisit the list periodically to incorporate another idea into the routine.

Tips for Conserving Water

- ◆ Keep tap water in a container in the refrigerator instead of running the water from the tap until it gets cold.
- ◆ Take showers instead of baths. Consider turning off the shower water while soaping.
- ◆ Turn off the water while brushing your teeth.
- ◆ Turn off the water while soaping up your hands when washing them.
- ◆ When cleaning paintbrushes and other school supplies, fill a tub of soapy water and let them soak instead of continuously running water over them until they are clean.
- ◆ Run full loads of dishes in the dishwasher.
- ◆ When getting water from a faucet, hold the cup or container you are filling under the faucet before turning it on. Do not remove the container until you have turned off the water.

Extension

If weather permits, set up a rain barrel to collect rain. Use the collected rainwater to water the class plants or garden. Use the rainwater for other class activities, including cleaning up art projects. Have the students measure the rainfall in a week or a month. Store the rainwater in empty reusable containers.

ELL Tip

Use an overhead projector or interactive whiteboard or copy the Which Conserves More Water? worksheet and work with the students to interpret the illustrations. Identify the method that conserves more water. Have the students take turns circling and explaining their choices for each activity.

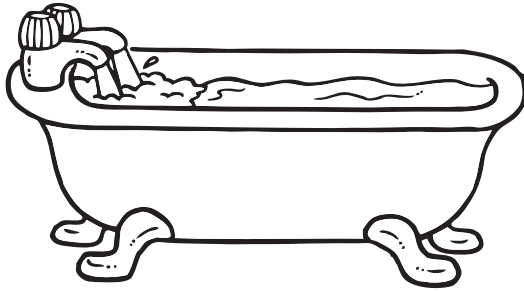


Down the Drain (cont.)



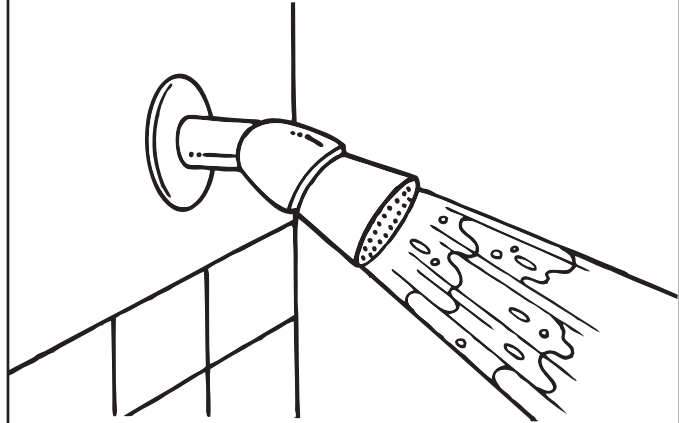
Water Usage Cards

Taking a Bath



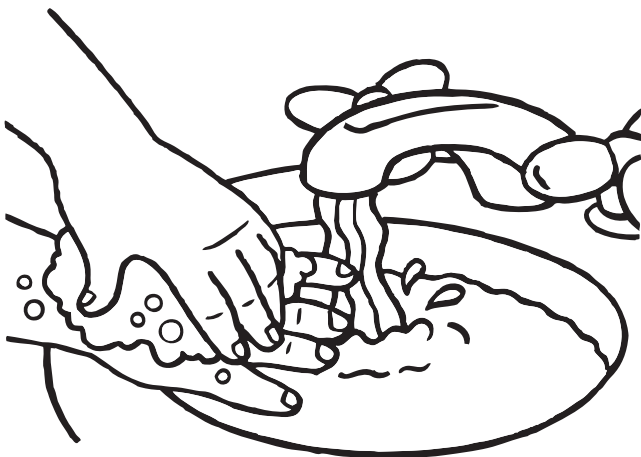
A half-filled tub uses 30 gallons of water.

Taking a Shower



A five-minute shower uses around 20 gallons of water.

Soaping Hands under Running Water



Estimate: _____ cups of water used
Actual amount of water used: _____

Soaping Hands with Water Turned Off



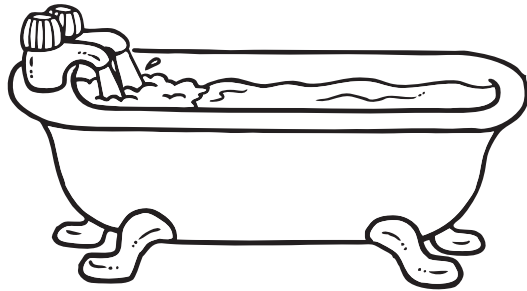
Estimate: _____ cups of water used
Actual amount of water used: _____



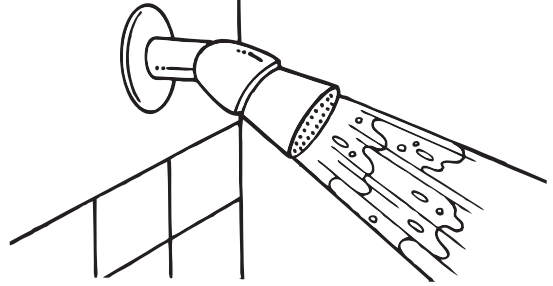
Down the Drain *(cont.)*



Which Conserves More Water?



bath



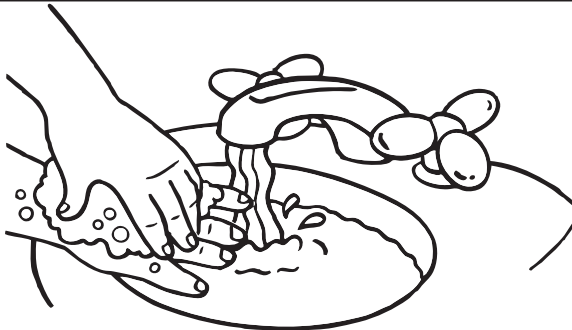
shower



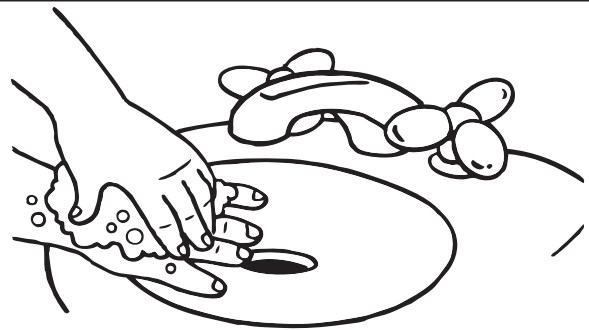
brushing teeth with running water



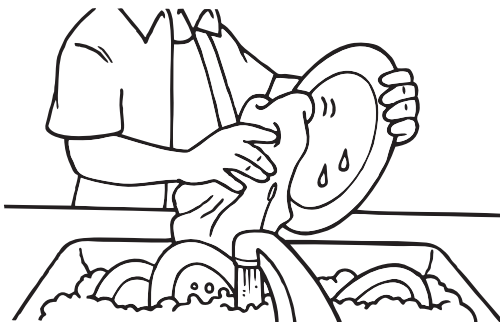
brushing teeth with water off



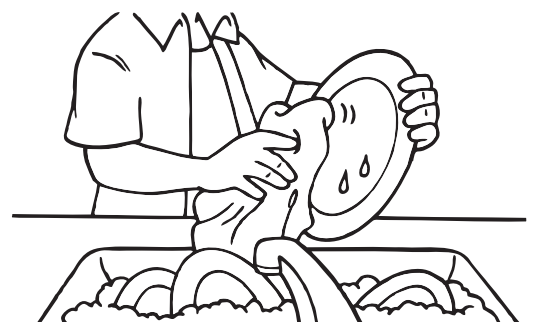
soaping hands with water on



soaping hands with water off



washing dishes with water on



washing dishes with water off