Objectives
Students will:
  • Discover how much water is lost through a leaky faucet

Background
Water leaks cause big problems to water systems, communities, households and other water users. Every year millions of gallons of water are lost through leaks. If a leak is underground, as in the case of our community water system lines, the leaks could go undetected for a long time, and in the process, cost the water system or water user money. For example, when developing a water system, project planners will calculate a 10% to 20% water loss factor to adjust for unaccountable losses (leaks). This means that a water system would be able to meet water needs.

The amount of water that can leak from a faucet or toilet over a day or week is sometimes quite sizable. Leaks cost water systems (the people that sell water) and water users money.

For example, if your faucet(s) leaks 50 gallons a day (4.5 oz per minute) for one month (30 days), 1,500 gallons will be wasted. If your water costs $2.00 per thousand gallons of water consumed, you will pay $3.00 more on your monthly water bill than you would pay without the leak. Looking at the bigger picture, that is $36.00 a year or 18,000 gallons of water. These amounts are the equivalent of a new video game or 72 days (Over 2 months!) supply of water for a family of 4.

Procedure
• Display an eight-ounce container of water in front of your class. Explain that the water in the container was collected from a leaking faucet.
• To illustrate this point, turn on a faucet just far enough to get a steady drip. Ask your students to observe the dripping faucet and then estimate how long they think it would take to fill an eight-ounce container. The container should be filled with water within 30 minutes.
• Compare the students’ estimates against your results. Explain that the size of the drops, frequency that the drops occur, and the length of time that a faucet is allowed to leak all affect the amount of water wasted.
• Provide each student with the "Water Down the Drain Worksheet.

Adapted with permission from Teaching Aquifer Protection, South Carolina Cooperative Extension Service, Clemson, SC.
Student/Family Worksheet
An Activity to Do at Home or School

Name ___________________________ Date ______________

Objective:
Learn how much water can be wasted or lost through a leaky faucet.

Materials:
1. Container to collect water
2. Water faucet
3. 8-ounce measuring cup

Procedure:
Compute the following based on the time it takes a leaky faucet to fill a cup:

Length of time to fill an 8-ounce cup (1/2 pint) ________________________

Length of time to fill a 1 gallon container_____________________________

Amount of water lost from a leaky faucet in 1 hour _______________

Amount of water lost from a leaky faucet in 24 hours ________________

Amount of water lost from a leaky faucet in 365 days ________________

How many days would this supply a family of four, when the daily rate of use
is 250 gallons per day? _______________

If the wasted water cost $2.00 per 1000 gallons; how much money could
be saved in a year? _________

What could you buy with the money saved by repairing the leaky faucet?

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