

The Big Drip

Fourth Grade

Activity: 14

Time: 1 Class Period

General Description

Students will investigate how much water is wasted by a dripping faucet. Students will identify other areas where natural resources are wasted and then brainstorm ways to conserve water and energy.

Objectives

Students identify natural resources that are being wasted and then propose a solution.

Arizona State Standards

SC04 S4C3 PO2 Differentiate renewable from non-renewable resources

SC04 S4C3 PO3 Describe ways in which resources can be conserved (e.g., by reducing, reusing, recycling, finding substitutes)

W04 S1C1 PO1 Generate ideas through a variety of activities (e.g. Brainstorming, graphic organizers, drawing, writer's notebook, group discussion, printed material)

W04 S1C1 PO5 Maintain a record (e.g. lists, pictures, journal, folder, notebook) of writing ideas

W04 S3C2 PO1 Record information (e.g. Observation, notes, lists, charts, map labels, and legends) related to the topic

W04 S3C4 PO1 Write persuasive text (e.g. Advertisements, paragraph) that attempts to influence the reader

M04 S2C1 PO3 Interpret graphical representations and data displays including single-bar/circle graphs, two-set Venn diagrams, and line graphs that display continuous data

M04 S4C4 PO1 Identify the appropriate measure of accuracy for the area of an object (e.g., sq. feet or sq. miles)

M04 S4C4 PO3 Select an appropriate tool to use in a particular measurement situation

Teacher Information

Fixing a leaky faucet is just one example of a variety of ways to save energy in a home. This activity is designed as a springboard to motivate students to investigate other ways to save energy in a home.

Materials

Water

Measuring cup

Activity Card 4-14

Procedures/Exploration

1. Have the students brainstorm the difference between renewable and non-renewable resources.
2. Discuss conservation. Here are some questions to start the discussion with:
 - a. Ask if anyone has ever had a leaky faucet in their household. If yes, ask them to describe the rate of water flow. Was it the hot water or cold? Does a leaky hot water faucet waste energy? How?
3. Discuss the activity on Activity Card 4-14 and tell students they will do this at home. Suggest they get help from family members.
4. Have the students return with the data the next day and complete the calculations as a group.
5. Students will calculate the rate of the dripping water and then calculate the amount of energy lost if the water was from a hot water faucet.
6. Discuss the results of the activity. Have students investigate other ways to save energy in the home.

Extension

Have the students create brochures on how to conserve water and energy based on what they learned during this activity and others.

The Big Drip

Fourth Grade
Activity: 14
Activity Card: 4-14

Student's Name: _____

Date: _____

Directions

1. Turn cold water on so that it just drips.
2. Place a measuring cup (use a clear cup with ounces marked) under the leaking faucet. Start timing for 15 minutes.
3. Turn off the water after 15 minutes and record your finding in the chart below.
4. Bring data back to school where you will calculate the amount of water that would leak in 1 hour, 1 day, 1 week, and 1 year.

Time	Amount of Water (ounces)
after 15 minutes	
in 1 hour	
in 1 day	
in 1 week	
in 1 year	

5. Divide the total number of ounces produced by a leaky faucet in one year by 128. This gives the number of gallons wasted in one year. Record below.
Number of gallons wasted in one year _____
6. If you did this with a hot water faucet, calculate the amount of energy that would be wasted in one year (by type of water heater):
OIL Heater - Divide the total number of gallons wasted in one year by 110.
Number of gallons of oil-heated water wasted _____
GAS Heater - Multiply the total number of gallons wasted in one year by .84.
Number of cubic feet of gas-heated water wasted _____
ELECTRIC Heater - Multiply total number of gallons wasted by .25.
Number of kilowatt-hours wasted _____
7. What other resources do you use that you could conserve?

How would you conserve those resources?