

Virtual Festival
Follow Up Activity



Wise Water Use

Theme: Water Conservation

Curriculum:

- Understanding Earth and Space Systems, Grade 2 (Air and Water in the Environment)
- Understanding Matter and Energy, Grade 2 (Properties of Liquids and Solids)
- Understanding Matter and Energy, Grade 3 (Forces Causing Movement)
- Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)

Activity Overview:

Students will learn about the importance of using water wisely and learn some tips they can apply at home. After a brief discussion on average daily water use around the world, students will participate/observe some experiments that demonstrate how much water can be wasted from leaky taps and leaving the tap running while brushing their teeth and washing their hands.

Key Messages:

- Canadians, on average, use more water per person than people in most other countries.
- Canadians should and can do better to use water more wisely.
- There are many simple ways of reducing the amount of water we use around the house.

Materials & Equipment:

Experiment 1	Experiment 2
Sink with working tap	Sink with working tap
Timer/clock/stopwatch	New Toothbrush & Toothpaste
Plastic container that will fit in sink	Plastic tub/container
Graduated cylinder/measuring cup	Graduated cylinder/measuring cup
	Hand soap

What Will I Be Doing? (Procedure):

Begin by providing the students with background information.

ASK: How do you use water around your house?

EXPLAIN: washing dishes, showering/bathing, washing hands, brushing teeth, flushing the toilet, watering houseplants, doing laundry, drinking, preparing meals are activities that all use water inside the house. Washing the car, watering gardens, watering lawn, washing the dog, in the swimming pool all use water outside around the house.

ASK: If we add all those uses around the house up, how much water do you think the average person in Canada uses each day?

EXPLAIN: The average person in Canada uses 335 L/day. That's about 163 big bottles of soda (pop).

ASK: How do you think Canada's average per person water usage rate compares to other Countries around the world?

EXPLAIN:

Country	Per Capita Water Use
Australia	200 L/day
Canada	335 L/day
United States	340 L/day
China	142 L/day
Switzerland	162 L/day
New Zealand	275 L/day
South Africa	235 L/day
India	135 L/day
Mozambique, Rwanda, Haiti, Ethiopia, and Uganda	15 L/day

These are just a few examples. Consider asking your students to research the per capita per day water use of a country of their choice.

Optional: Discuss why Canadians may have developed a culture that doesn't appear to value water as much as others.

EXPLAIN: 97% of the earth's water is found in the oceans (too salty for drinking, growing crops, and most industrial uses except cooling). 3% of the earth's water is fresh. 2.5% of the earth's fresh water is unavailable: locked up in glaciers, polar ice caps, atmosphere, and soil. 0.5% of the earth's water is available fresh water. Within our many lakes and rivers, Canada holds 7% of the entire world's freshwater supply. Perhaps it is the seemingly abundant freshwater resources that has led to the culture?

ASK: Can Canadians do better at conserving water?

EXPLAIN: YES WE CAN! We will learn more about what we can do at home to conserve water, but first, let's explore a bit on how much water we waste letting leaky taps leak and doing activities people do daily.

Experiment 1: Stop the drip!

This experiment will look at how much water a leaky tap wastes a day. Leaky taps can waste many litres of water a day and a relatively inexpensive repair can save the tap owner the cost of the repair many times over on the utility bill.

Step 1: Turn tap on so that it is just lightly running.

Step 2: Prepare the timer.

Step 3: Place plastic tub/container under dripping tap and start timer.

Step 4: Wait 10 min as the container collects water.

Step 5: Stop tap or remove plastic bin at the 10 min mark. (if time is a factor can reduce time to 5 minutes)

Step 6: Pour water into graduated cylinder or measuring cup and measure how many millilitres of water dripped in the allotted time (may have to add up multiple full graduated cylinders/measuring cups to get the total)

Step 7: Calculate how much water a leaky tap would leak in an hour. Depending on the grade level, students could calculate how much water would be wasted in a day/week/month/year.

Step 8: (optional) How many days would it take to fill an Olympic sized swimming pool (2,500,000 litres of water) if all of the students in the class had leaky taps. These steps can be explored to illustrate how much water can be wasted in a community.

Note: Inform the students that these values are only a guideline as no two taps leak at the same rate

Experiment 2: Turn off the tap!

In this experiment, students will look at how much water gets wasted when we leave the tap running while brushing our teeth or washing our hands versus when the tap is turned off. Most people don't realize how much water gets wasted while they leave the tap on. This is two experiments in one, but both will look at how much water is wasted while the tap runs.

Step 1: Place container under tap in the sink.

Step 2: Have students brush their teeth with the tap running.

Step 3: Take water from container and measure in the graduated cylinder/ measuring cup. This shows how much water was used while the tap was left running.

Step 4: Repeat step two with the tap is turned off so students can see the difference in how much water gets used.

Step 5: Repeat experiments but use hand soap this time (Ontario health unit suggest lathering for 15 seconds before rinsing).

Step 6: Post the times of each student in two columns – one for leaving the tap running and one for turning off the tap.

Step 7: Compare the results and discuss with the class.

This activity will not only show students how much water can be wasted but have them think about what they can do in their daily lives to conserve water.

Video

Grandfather Frog shows Jerry an example of a typical house, and how families can conserve water throughout it. From the bathroom to the kitchen to the garden, Jerry learns practical tips like "Stop the Drip", and "Don't pour F.O.G. down the drain" (Fat, Oil & Grease).

<http://www.grandfatherfrog.com/episode/82-2050-grandfather-frogs-water-conservation-tips>

Reflection and Extension:

1. To recap what they have learned, ask the students what simple things we can do around our homes to reduce water waste?
 - Stop the drip! On leaky taps
 - Take shorter showers
 - Install low flow toilets
 - Don't leave the water running when washing
 - Only run laundry and dishwashers when you have a full load
 - Turn the hose off when not using it
 - Use water control nozzle on the hose. When the hose is on and the nozzle is closed no water will come out of the hose
 - Wash car with a bucket of water instead of just the hose
 - Make sure sprinkler is only sprinkling the lawn and not driveway or sidewalk
 - Use a rain barrel to catch the rain water and use for flowers or garden
 - Water plants with watering can where possible
 - Cover swimming pool when it isn't being used to reduce evaporation
2. Have students select one of the water saving practices and create a water conservation poster.