



HOME WATER AUDIT

BACKGROUND:

When we turn on a tap in our homes, the water that comes out of it has come a long way from its source. It has been pumped from a river, lake or well, and then filtered, treated and pumped to our homes. When it leaves our homes it is pumped, filtered and treated again before being sent back to the river or another surface water body. That whole process uses a lot of energy and chemicals.

PROCEDURE:

1. Does your home have low flush or dual flush toilets? (3-6 litres) If not, check how much water your toilet uses per flush. Look for numbers printed on the toilet like "13 lpf" (litres per flush).
 - Estimate how many times toilets are flushed in your house each day and multiply that by the lpf. How much water is your family using to flush toilets every day?
 - Do older toilets have water saving features like tank water level regulators? E.g. a brick or jug that displaces water.
2. Check your toilets for leaks. Put 4-5 drops of food colouring in the toilet tank and wait 5-10 minutes. If the water in the bowl becomes coloured, the toilet is leaking.
3. Does your home have low-flow shower heads? (9 l/min or less)
Estimate how much water your family uses for showering.
 - **Method 1:** Estimate how many showers your family takes each day and how many minutes they shower for. Calculate how much water is used by each person and by all showers. (Volume = Flowrate x Time)
E.g. Shower #1: 5 minutes: 9 litres x 5 mins = 45 litres of water
Shower #2: 10 minutes: 9 litres x 10 mins = 90 litres of water
Total water used: 45 litres + 90 litres = 135 litres of water.
 - **Method 2:** Put the plug in the tub as you start running water for your shower. When your shower is done, measure how much water is in the tub. (Volume = Length x Width x Depth). Have each member of your family do the same thing.
E.g.: (1.10m x 0.5m x 0.1m) x 1000 litres/m³ = 55 litres of water
4. Are there aerators on taps in bathrooms and kitchen? (Aerators increase the pressure of the water while decreasing the flowrate.)



5. Do family members turn off the water while brushing their teeth?
 - Brush your teeth with the water running. Plug the sink or collect the water in a large bowl. Measure the water you collected. (For a less messy experiment, try this without using toothpaste)
 - Now brush your teeth again, only turning on the water to fill a cup or rinse your toothbrush. How much water did you collect this way?

6. Is laundry done only with full loads? Is laundry washed in cold water? Is laundry hung to dry? (These last two save energy.)

7. Is the dishwasher only used with full loads?

8. How much water does your family use outdoors?
 - How often is the lawn watered in summer? (Tip: place a Frisbee on the lawn, when it is full, the lawn has had enough water for the week – 2-3cm/week.)
 - Do you have a rain barrel to collect rainwater from downspouts? The water can be used to water your lawn or garden, instead of using tap water.

9. What could your family do to further reduce their water consumption?

10. If you want to calculate greenhouse gas emission reductions, add up what your water savings would be over a year from the changes you are making. (Greenhouse gas emissions (kg CO₂) = Water Volume x Emission Factor.) The greenhouse gas emission factor varies between communities. For an average, you can use 0.00057 kg CO₂/litre water.
 E.g.: 135 litres/day x 365 day/year x 0.00057 kg CO₂/m³ = 28 kg CO₂/year

CURRICULUM CONNECTIONS

Grade 2 Science: Outcome: AW2.2 Assess the importance of air and water for the health and survival of living things, including self, and the environment.
Grade 7 Science: Outcome: HT7.1 Assess the impact of past and current heating and cooling technologies related to food, clothing, and shelter on self, society, and the environment.
Grade 8 Science: Outcome: WS8.1 Analyze the impact of natural and human-induced changes to the characteristics and distribution of water in local, regional, and national ecosystems.