



Water: One Pager

Background and concepts

Water: How can I reduce water use?

Our drinking water comes from the river. It is treated and filtered and then pumped to our homes. All this uses energy and generates greenhouse gas emissions.

Take photos of the actions you are taking to save water or keep a list or journal of what you are doing to reduce water use. Do the math. Share your actions with your teacher, family, and friends.

I take shorter showers:

- There are 2 ways we can save water when showering
 - We can install a low flow showerhead which uses between 4 and 6 litres of water per minute. That's changing **technology**.
 - We can take a shorter shower – reducing the amount of time we are in the shower. That's changing our **behaviour**.
- **Compare:**
 - 15-minute shower using a 6 litre per minute showerhead = 90 litres of water
 - 5-minute shower using a 6 litre per minute showerhead = 30 litres of water
- If you reduce your showering time daily from **15 minutes to 5 minutes**, you could save **33,000 litres of water per year**, and **\$120 each year**.
- **Find the flow rate:** Using a large measuring cup, a stopwatch or the timer on your phone you can figure out how much water your showerhead uses. Turn your showerhead on full and capture the amount of water that flows in 10 seconds with the measuring cup. Multiply by 6 to find out litres per minute.



I drink tap water:

- Drinking water from the tap saves in a few ways.
 - Tap water is a lot less expensive than bottled water. It costs cents per glass compared to the cost of a bottle of water.
 - Tap water is tested for quality much more often than bottled water.
 - Single use plastic bottles can be recycled, but many end up in the landfill. In Canada, about **29,000 tonnes of plastic** end up as litter which can contaminate rivers and oceans.





I turn off the tap while I am brushing my teeth:

- Try this experiment.
 - **Brush while running the water the whole time.**
Place a container in the sink. Run the water the whole time you are brushing your teeth. Measure the water you collected.
 - **Brush with the tap off.** Now collect and measure the water if you brush your teeth without running the water. Only turn on the tap to wet and rinse the brush and to rinse your mouth.
 - How much water did you save by turning off the tap?



List other ideas to reduce water use and create your action plan below:



Curriculum connections

Grade 4 Mathematics: N4.3 Demonstrate an understanding of multiplication of whole numbers (limited to numbers less than or equal to 10) by: applying mental mathematics strategies, explaining the results of multiplying by 0 and 1. **Social Studies: RW4.3** Assess the impact of Saskatchewan resources and technological innovations on the provincial, national, and global communities.

Grade 5 Mathematics: N5.2 Analyze models of, develop strategies for, and carry out multiplication of whole numbers. **P5.1** Represent, analyse, and apply patterns using mathematical language and notation. **P5.2** Write, solve, and verify solutions of single-variable, one-step equations with whole number coefficients and whole number solutions. **SP5.1** Differentiate between first-hand and second-hand data.

Science: MC5.3 Assess how the production, use, and disposal of raw materials and manufactured products affects self, society, and the environment.

Social Studies: RW5.1 Explain the importance of sustainable management of the environment to Canada's future. **RW5.2** Hypothesize about economic changes that Canada may experience in the future.

Grade 6 Social Studies: RW6.2 Contribute to initiating and guiding change in local and global communities regarding environmental, social, and economic sustainability.

Grade 7 Science: IE7.3 Evaluate biogeochemical cycles (water, carbon, and nitrogen) as representations of energy flow and the cycling of matter through ecosystems. **IE7.4** Analyze how ecosystems change in response to natural and human influences, and propose actions to reduce the impact of human behaviour on a specific ecosystem. **MS7.2** Investigate methods of separating the components of mechanical mixtures and solutions, and analyze the impact of industrial and agricultural applications of those methods. **Social Studies: RW7.2** Investigate the influence of resources upon economic conditions of peoples in circumpolar and Pacific Rim countries. **RW7.3** Assess the ecological stewardship of economies of Canada and the circumpolar and Pacific Rim countries.

Grade 8 Health Education: USC8.6 Examine and assess the concept of sustainability from many perspectives, and develop an understanding of its implications for the well-being of self, others, and the environment. **AP8.10** Design, implement, and evaluate three seven-day action plans that establish multiple supports for responsible health action related to family roles and responsibilities, non-curable infections/diseases, violence and abuse, body image, sustainability, and sexual health. **Science: FD8.1** Investigate and represent the density of solids, liquids, and gases based on the particle theory of matter. **FD8.4** Identify and interpret the scientific principles underlying the functioning of natural and constructed fluid systems. **WS8.1** Analyze the impact of natural and human-induced changes to the characteristics and distribution of water in local, regional, and national ecosystems.

Social Studies: RW8.3 Critique the approaches of Canada and Canadians to environmental stewardship and sustainability.