Teacher's Note
It's a Small World

Canada probably has more lakes than any other nation in the world! The Great Lakes alone contain 25% of the world's freshwater. As a nation, 26% of us rely on groundwater for domestic use. The remainder relies on surface waters. We are very fortunate to have plentiful supplies of good drinking water sources.

Other nations are not so fortunate. The United Nations High Commission for Refugees estimates that an average human needs a minimum of 30 litres of water per day – 5 litres for drinking and cooking, 25 litres or more to keep clean. The average Canadian uses about 340 litres of water per day. Europeans use about 140 litres per day. In Africa, the average person uses 3 litres per day. Note that this does not include other water uses or technologies that use water at home or in the work place.

In developing nations, 80% of all diseases are related to poor water quality. It is estimated that 30,000 people around the world die each day due to contaminated water and poor sanitation. In Canada today, waste water treatment, enforced drinking water guidelines, education and public health practices have made water-related illnesses such as typhoid fever and cholera almost unknown.

Canada is blessed with an abundance of water. As Canadians we often misuse and abused water as a resource. Our household toilets use 20 litres per flush where they could use 6 litres. Some industrial plants and municipalities use water bodies as convenient sewers. Rapid growth of urban populations and the many chemical products that we use and dispose of daily are also factors that must be considered in the equation which equals increasing rates of surface and groundwater pollution. Our thirst for water and energy are ever increasing.

Water Conservation – Doing the Same with Less. By using water more efficiently, we will reduce pollution, health risks and water costs, as well as extend the useful life of existing supply and waste treatment facilities. Most importantly, we are protecting water supplies for present and future generations.

Source: Clean Water Life Depends On It! Freshwater Series A-3. Environment Canada. Ottawa. 1992
Water Conservation – Every Drop Counts. Freshwater Series A-6. Environment Canada. Ottawa. 1992
Water – Here, There, Everywhere. Freshwater Series A-2. Environment Canada. Ottawa. 1992

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Overview of Activity:
Students recognize the need to protect and conserve fresh water supplies by simulating and considering the implications of unequal water distribution in different countries in the world.

Outcomes:

- Consider implications of unequal water distribution
- Recognize human implications of limited water supplies and water pollution
- Use mathematical and research tools to draw a conclusion

Purpose:
Students investigate the amount of water available in different countries around the world. Groups are given a limited water supply with which they must perform daily functions. Students realize that unequal distribution of water can cause challenges that they must overcome to survive.

Materials Needed: • Global water distribution facts • Any material, that would represent water consumption (ie. Jelly beans, cotton balls, lego pieces, bingo chips, etc.) Method: 1. Students form into groups of 4. Each group will be a family of four in an assigned country. 2. Use 'Global Water Distribution Facts' to determine the amount of water that each family receives per day. 3. Copy the 'List of Daily Water Use Chart' and the 'Class Water Use Chart' for student use.	4. The teacher is the 'Global Water Supply'. Ask groups to collect their water supply one at a time. Have them state their country and give them their allocated supply. 5. Before starting, groups should place the 'List of Daily Water Use in the Home' in ranking order of importance from most important to human survival to least important to human survival. 6. Once groups have received their water supply they must allocate and record the appropriate amount of water they can use for each water use activity. 7. (Class Water Use Chart) 8. On a separate sheet they should record the challenges and problems they met during the assignment.

Daily Water Uses in the Home
(Note: add other water uses if desired)

- Flushing toilet
- Brushing teeth
- Bathing / showering
- Cooking
- Drinking
- Washing dishes
- Cleaning
- Watering lawn/ washing car
- Washing clothes

RULE 1: Place 5 jelly beans From your water supply aside. this is polluted water. It should not be used unless absolutely necessary.

RULE 2: Minimal Life Requirement per family

a) DRINKING -12 jelly beans/family
b) COOKING -10 jelly beans/family
c) BATHING- 12 jelly beans/family

RULE 3: The object of the activity is to have students use their daily Water supplies as efficiently as possible

Global Water Distribution Facts:

Amount of Water per Family per day
(# of jelly beans given to each family)

Canada	235
Croatia	76
Egypt	28
Brazil	30
India	27
Sweden	117
Zimbabwe	18

Discussion Questions:

1. Was your group able to perform all of the activities listed under 'Daily Water Use in the Home'? Why or Why not?
2. How did you rank the Daily Water Uses? Explain your answer.
3. Based on your class results, which countries waste water most? In which countries do you think people suffer because there is not enough water?
4. Make a chart identifying the amount of water used by each family for each daily use.

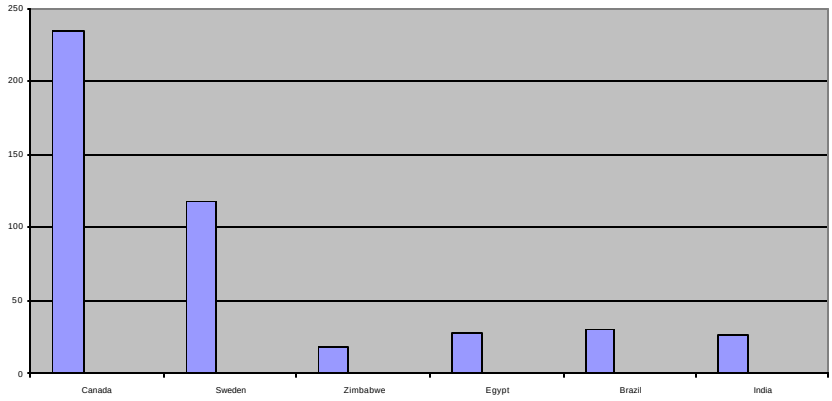
The Class Water Use Chart may look like:

	Drink	Cook	Bath	Wash Clothes	Wash teeth	Wash dishes	Water lawn	Wash car	Flush toilet	total
Canada	20	20	40	30	5	10	50	40	20	235
Sweden	15	20	15	15	2	5	15	20	10	117
Zimbabwe	5	6	3	1	1	1	0	0	0	18
Egypt	6	7	5	4	2	2	0	1	1	28
Brazil	7	7	5	5	2	2	0	1	1	30
Croatia	9	10	10	15	2	5	5	10	10	76
India	5	6	4	5	1	2	0	2	2	27

Note: The amount allocated to each family are not based on specific statistics but are estimated derived from a variety of information sources. The aim of the allocated amounts if for students understand that water is not distributed equally.

Based on our class results, what happens when water becomes polluted? Do you think that there is enough water on earth to keep polluting it?

5. Once the chart is complete, have students create bar graphs showing the total amounts of water each family used for each activity.
   Examples of what the bar graphs may look like.



Follow UP:
Research your assigned country. Write a 1 page report by answering these questions:

- What continent is it in?
- What countries neighbour your country?
- Is your country near any large bodies of water?
- Name large oceans, seas, rivers, lakes that are close to or in your country.
- What language do people in your country speak?
- How many people live in your country?
- Draw a map of your country.

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In some countries women and children spend most of the day fetching water for home use.

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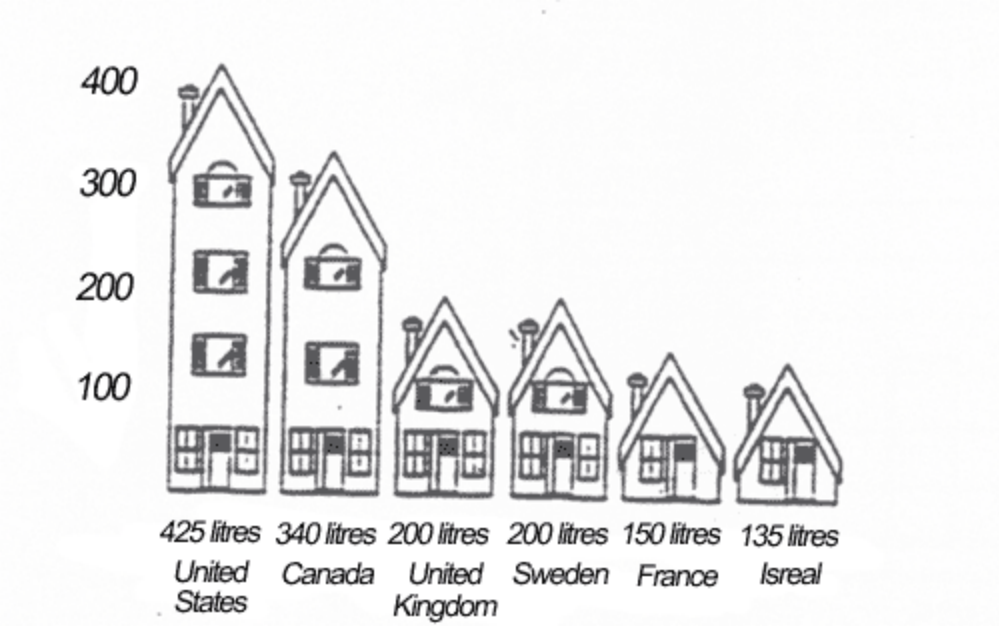
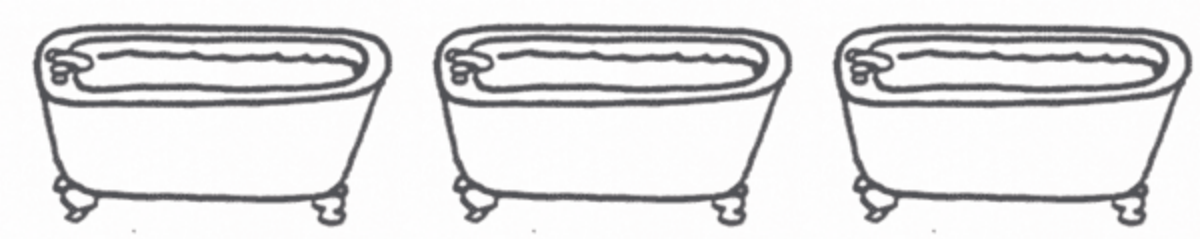
Average daily domestic water use (per capita)



In Canada, each person uses about 340 litres of water each day. That’s about 3 big bath tubs full of water!



In Africa, each person uses about 3 litres of water each day. That’s just a puddle in a bath tub!