

Water on earth: WATER CONSERVATION



AREA BEST LINKED TO

City of Kawartha Lakes, County of Haliburton and District Municipality of Muskoka



OBJECTIVES

- Raise awareness about the importance of conservation of water
- Learn about how much of our Earth is water and how much is accessible to humans
- Understand the role humans play in the amount of water we have



CURRICULUM LINKS

GRADE FOUR:

Arts:

- D1.1: Create two- and three-dimensional works of art that express feelings and ideas inspired by their interests and experiences
- D1.3: Use elements of design in art works to communicate ideas, messages, and understandings

Science:

- 1.1: Analyse the positive and negative impacts of human interactions with natural habitats and communities (e.g., human dependence on natural materials), taking different perspectives into account (e.g., the perspectives of a housing developer, a family in need of housing, an ecologist)

GRADE SIX:

Arts:

- D1.1: Create two-dimensional, three-dimensional, and multimedia art works that explore feelings, ideas, and issues from a variety of points of view



MATERIALS

- 4 plastic tubs
- 4 small buckets/pails
- 4 label's
- 1 permanent marker
- 1 measuring cup



BACKGROUND INFORMATION

Water on Earth is composed of 97% salt water and 3% fresh water. Only 1% of the fresh water is accessible for human consumption and the rest is found in ice caps, air, soil, and underground water (Ward 2003). With only 1% of fresh water accessible for human consumption, it is a critical issue that needs to be addressed. The average Canadian uses approximately 350 litres of fresh water per day (Draper & Shrubsole 2007). If everyone only used the amount they needed then there would be enough for everyone, but the truth is that people use more water than necessary. The purpose of this activity is to show students how much water is actually available on earth for human consumption and how important it is for us to conserve it.



PROCEDURE

Teachers should start out by asking the students some questions.

Water comes in three forms: gas (vapour), solid (ice), and liquid (water). Identify as many places as possible where we can find water on earth.

- **Ask: What percentage of the water on Earth is available for humans to use?**

Have a discussion about this without telling them the answer as it will be demonstrated later on in the activity.

- **Ask: How much water does each of you use a day?**

The average Canadian uses approximately 350 litres of water per day (Saccoccio 2007). Explain how we use more water each day than we really should.

To visually demonstrate how much water is on earth to students. Use 4 small tubs to represent the percentage of water in oceans, in fresh waters (glaciers/lakes/river), and the amount of fresh water available for human consumption. This activity is best done outside since there is water involved and will provide more space for the activity. The steps are as follows:

1. Label 4 different small tubs: Salt Water (Oceans), Fresh Water (Lakes & Rivers), Fresh Water (Glaciers, Air & Groundwater), and Freshwater (For Human Use). Place each container a few feet apart from each other.
2. Split the class into 4 groups and give each group a bucket of water. Ask them to discuss within their groups how much water should go into each labelled tub. Then allow each group, one at a time, to pour the amount of water from their bucket into the 4 labelled tubs that they chose for each. After each group does this, ask them why they chose the amount they did for each labelled tub. Do this for all 4 groups.
3. After each group has gone, pour the water from the tubs back into the buckets.
4. Using a measuring cup, measure 970mL of water and pour it into the Salt Water Tub. This represents 97% of the Earth's water being salt water. Measure 30mL of water and pour it into the fresh water tub. From this tub take 10mL and pour it into the glaciers/river/lakes tub, and take 10mL from this and pour it into the fresh water for humans tub. Each of these 10mL's represents 1% of the Earth's fresh water.
5. Explain to the kids that each amount of water in the tubs represents a percentage of water, and all the tubs added together represent all the water on Earth. A discussion about what they have learned can then be done. Throughout this discussion or before you can give the kids some information:

Our bodies are approximately two-thirds water and all living things, fruit, and vegetables need water and it is home to all kinds of life forms (Environment Canada 2009). A non-renewable resource is something that could one day be gone forever with no way of bringing it back. The fresh water on earth could be seen as a non-renewable resource. This is why we need to use the small amount of water we do have available to us very wisely. There are many ways we can conserve water and it all starts with every one of you in your everyday lives. To help conserve water at home you can take shorter showers, not leave the tap on while brushing your teeth, and use the hose to water your plants a lot less. Living in Canada we are very lucky because every day we have clean, safe water that we can use, but there are people in other countries that do not have this luxury. Water is extremely important and we should not take it for granted by doing everything we can to conserve it.

After a discussion, have the children use the water to water plants or trees in the school yard. This will help them begin their new found journey of water conservation by using that water for something useful rather than pouring it down the drain. This could also be used as a brainstorming idea for re-using water. There are many instances in life where water can be re-used, for example instead of putting a glass of water or water from a bottle down the drain when you don't want any more you can water some plants with it or put it in your dogs water dish. Ask the children if they can think of any other situations where they can re-use water instead of wasting it.



RESOURCES/REFERENCES

- Draper, Dianne & Shrubsole, Dan (2007). Water Use and consumption in Canada. EAU Canada, Ed. UBC Press. Retrieved 20 March 2011. www.watgovernance.ca/Factsheet/pdf/fs_water_use.pdf
- Environment Canada (2009). Topic 6: Water Conservation—Every Drop Counts. Retrieved 19 March 2011. <http://ec.gc.ca/eau-water/default.asp>
- Saccoccio, Sabrina (2007). In Depth Water: What's in a glass of water? CBC News. Retrieved 12 April 2011. <http://www.cbc.ca/news/background/water/tapwater.html>
- Ward, Alan (2003). Weighing Earth's Water from Space. Earth Observatory. NASA Space Flight Centre. Retrieved 20 March 2011. <http://earthobservatory.nasa.gov/Features/WeighingWater/>



FEEDBACK

We appreciate your feedback! Please let us know...

- Did this activity continue the learning your students engaged in at the Water Festival?
- What curriculum requirements did this activity satisfy?
- Was the activity easy to facilitate to your class?
- Did students have fun and learn something new about water?
- Please send photos of your class using these activities!

Please send comments and photos to: iheaven@outtolearn.ca