

# My Water Use

Grade 7 – Mathematics



## Lesson Details

<b>Grade Level:</b>	7	<b>Curriculum Links:</b>	Mathematics, Science and Technology	<b>Time Needed:</b>	1 hour class time, 5 minutes per day at home
<b>Learning Goal</b>	To learn about the importance of water conservation and how that relates to turtles while also reflecting upon their own day-to-day water use.				
<b>Success Criteria</b>	By the end of this activity, students will have calculated their personal water use throughout one week and learnt the importance of water conservation, including how to conserve water themselves.				
<b>Specific Expectations</b>	<p><i>Mathematics – Determining Characteristics of Linear Relations</i></p> <ul style="list-style-type: none"> <li>Construct tables of values and graphs, using a variety of tools, to represent linear relations derived from descriptions of realistic situations;</li> <li>Describe a situation that would explain the events illustrated by a given graph of a relationship between two variables.</li> </ul> <p><i>Science and Technology – Understanding Life Systems: Interactions in the Environment</i></p> <ul style="list-style-type: none"> <li>Demonstrate an understanding of an ecosystem as a system of interactions between living organisms and their environment;</li> <li>Use scientific inquiry/research skills to investigate occurrences that affect the balance within a local ecosystem;</li> <li>Assess personal and family uses of water as responsible/efficient or wasteful and create a plan to reduce the amount of water used, where possible.</li> </ul>				
<b>Materials Needed</b>	Worksheet (attached), Pencil, Graph Paper, Colouring Pencils (optional), Appropriate Clothing and Footwear (Rainboots).				

## Lesson Description

<b>Overview</b>	Students will keep track of their water use at home over a week's time and learn about the importance of water conservation and how this relates to turtles by visiting a local water area.
<b>Activity</b>	<ol style="list-style-type: none"> <li>Begin by introducing students to water conservation, its importance, and relation to turtles.</li> <li>Explain the activity and hand out the attached worksheet to students asking them to complete the first page. This activity will take place over a week's time.</li> <li>At the end of the week, the students will complete the rest of the attached worksheet and create their graph.</li> <li>Discuss with the students their water uses and calculate the total water use by the class.</li> <li>Take the students to a local water area (E.g. wetland, pond, river, etc.) to see first-hand the importance of water to an ecosystem. Remind the students not to take anything from nature, and to take anything with them that they already brought themselves. Remember, be kind to the environment.</li> <li>Ask the students "what can we do to keep the waterways clean?" and "what difficulties would we (humans) face if we did not have enough clean water? What about an animal like a turtle?"</li> </ol>
<b>Background Information</b>	There are many benefits to conserving water – conservation limits the amount of water taken from the Earth and the amount which is used, polluted, and sent back into

## Lesson Description

	<p>nature. It is important to recognize that maintaining a healthy relationship with water and its use is necessary to the survival of humans, animals, plants, and ultimately ecosystems. To limit water use, it is suggested that people can avoid buying bottled water, turn off the taps when brushing your teeth, take shorter showers, use less bath water, use rain water to water plants, and to be aware of leaky faucets.</p> <p>Wetlands, for example, are crucial to the health of water systems. If a wetland was part of the human body, it'd be known as our kidneys. They filter water and regulate the distribution of its flow. Without wetlands, silt, sand, and pollutants would flow directly into our lakes, rivers, and oceans. It is important to note that wetlands are also a home to many species, not just plants. Turtles are most often found in wetlands. They are considered keystone species, in other words, incredibly valuable and integral to the health of the water. Likewise, wetlands provide a home for animals and contribute to their overall well-being. Wetlands teach us the relationships between the environment, plants, and animals.</p>
<b>Blacklist Masters</b>	<ul style="list-style-type: none"> <li>• Worksheet (attached)</li> <li>• Video Link(s): <a href="#">Wetlands and Turtles in Ontario</a></li> <li>• For more information, please visit <a href="https://www.turtleguardians.com/sample-page/turtle-habitats/">https://www.turtleguardians.com/sample-page/turtle-habitats/</a></li> </ul>
<b>Place-Based Learning</b>	Students will visit a water area, such as a wetland or river, to see in-person the importance of water to an ecosystem and learn the value of water conservation for nature.
<b>Inquiry-Based Learning</b>	<p>Using <b>Open Inquiry</b>, students will conduct their own research by collecting data about their personal water use.</p> <p>Ask the students:</p> <ul style="list-style-type: none"> <li>• What can we do to keep the waterways clean?</li> <li>• What difficulties would we face if we did not have enough clean water? What about animals, such as a turtle?</li> <li>• What can we do to decrease the amount of water we are using for some of the categories?</li> <li>• Which day of the week was the most water used? How about the least?</li> </ul>
<b>Turtle Stories</b>	Create a model diagram of a water system in your area. How are the lakes, rivers, and wetlands connected? Students are encouraged to share their experiences, pictures and worksheets on the Turtle Stories website, found here: <a href="https://www.turtlestories.ca/">https://www.turtlestories.ca/</a>
<b>Turtle Guardian Program Links</b>	After completing <b>Level 1</b> (Ontario Turtle Identification) of the <b>Turtle Guardian Program</b> , students can move onto <b>Level 2</b> (Wetland Watchers). In this level the students learn how to monitor wetland habitats, contribute to knowledge of wildlife-biology in the region, and are able to adopt a wetland to monitor for wildlife. For more information, please visit <a href="https://www.turtleguardians.com/what-is-a-turtle-guardian/">https://www.turtleguardians.com/what-is-a-turtle-guardian/</a>

## My Notes

## Discussion Questions

**1. What items use the most water in your house?**

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**2. What can we do to decrease the amount of water we are using for some of the activities?**

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**3. Where could you reduce the amount of water you use without compromising your health?**

To limit water use, it is suggested that people can avoid buying bottled water, turn off the taps when brushing your teeth, take shorter showers, use less bath water, use rain water to water plants, and to be aware of leaky faucets.

**4. Which day of the week was the most water used? Why?**

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**5. Which day of the week was the least amount of water used? Why?**

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**6. What can we do to keep waterways clean?**

Reducing pollution in the environment is an excellent way to keep our waterways clean. As well, ensuring less runoff from industrial sites, farmland, and urban environments can help to keep waterways clean.

**7. What difficulties would we face if we did not have enough clean water?**

Without enough clean water human health could become compromised. As well, animals and birds that require clean water for their own health would be affected.





# My Water Use

Over one week, you will keep track of your water use and tally up the totals.

Activity	Canadian Average (Liters)	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	TOTAL (L) Per Activity
Bath	60 L								
Shower	100 L / 10 min								
Toilet	6 – 20 L								
Wash Face & Hands	8 L with tap on								
Brush Teeth	10 L with tap on								
Drink	0.3 L								
Cook	10 L								
Dishes (by hand)	35 L								
Dishes (machine)	40 L								
Wash Clothes	225 L								
Wash Car	16 L / min								
Water Lawn	161 / min								
<b>TOTAL (L) Per Day</b>									

At the end of the week, graph your results on a separate piece of paper.

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