

## Grade 2 Lesson Outline

<b>Lesson Title:</b> The Cycle of Water	<b>Duration:</b> 40 minutes
<b>Introduction:</b>	
In this lesson, students will learn about water and wastewater treatment, the water cycle, water efficiency and the importance of drinking tap water.	
<b>How to use this resource:</b>	
Refer to the list below for all resources required for this lesson: <ul style="list-style-type: none"><li>• <b>Grade 2 – Presentation</b> PPT includes all slides, speaking notes and video links required for the lesson</li><li>• <b>Exploring Water</b> worksheet look at ways that water is used</li><li>• <b>All About Treatment</b> worksheet match the stages of water and wastewater treatment with images</li><li>• <b>Water Promise</b> (2 versions)<ul style="list-style-type: none"><li>○ Classroom version to hang near a classroom sink</li><li>○ Take home version for family to hang near bathroom sink</li></ul></li></ul> <p>Print the following files before you begin the lesson:</p> <ol style="list-style-type: none"><li>1. <b>Exploring Water</b> worksheet (1 per student)</li><li>2. <b>All About Treatment</b> worksheet (1 per student)</li><li>3. <b>Water Promise</b> (2 versions)<ul style="list-style-type: none"><li>• Classroom version to hang near classroom sink (print 1 copy for entire class)</li><li>• Home version for family to hang near bathroom sink (1 per student)</li></ul></li></ol>	
<b>Key Messages:</b>	
<ul style="list-style-type: none"><li>• All living things needs water</li><li>• Water moves around the earth through the water cycle.</li><li>• We need to save water, so it stays clean and there is enough for everyone</li><li>• The water treatment plant keeps our water clean, safe and healthy for everyone</li><li>• Personal actions can help protect water, such as being careful with what we pour down the sinks at home and at school</li></ul>	
<b>Key Topics:</b>	
<ul style="list-style-type: none"><li>• Water Conservation</li><li>• Water Treatment</li><li>• Wastewater Treatment</li><li>• Water Quality</li></ul>	
<b>Curriculum Connections:</b>	

For a complete list of curriculum connections, refer to the Curriculum Connections for Grade 2

**Science & Technology:**

**Understanding Matter & Energy: Properties of Liquids & Solids**

- 1.2 & 3.3

**Understanding Earth & Space Systems: Air & Water in the Environment**

- 1.1, 1.2, 2.3, 2.4, 2.5, 3.4, 3.5 & 3.6

**Lesson Outline:**

**Slide 2: The Region of Peel**

- \_\_\_\_ Ask students – what city or town do they live in?
  - Let students know the city or town they mentioned is part of a larger area that is called the Region of Peel
  - Region of Peel includes the Town of Caledon and 2 cities – City of Brampton and City of Mississauga
    - Some of the programs and services that the Region of Peel provides to our communities includes:
      - Garbage, recycling and organics collection
      - Maintaining Regional roads, including snowploughing in the winter and paving in the summer
      - Paramedics (ambulance)
      - Police
      - Providing safe clean water to drink and cleaning the dirty water when you're done
  - Today, we are going to learn about how water is important to all living things, and how we use water everyday at school and at home.

**Slide 3: We use water for...**

- Brainstorm with the class different ways they use water at home and at school. This can be done on chart paper or a board
- 10-15 minutes to complete this activity

At school	At home
Washing our hands	Drinking
Drinking water	Taking a bath
Using the washroom – flushing the toilets	Using the washroom – flushing the toilet
Painting	Brushing our teeth
Watering our plants	Washing our clothes – washing machine
Water fountain in our school	Washing our dishes

- Let's count together how many ways we use water

#### Slide 4: Water Cycle

Depending if the unit has already been covered in class, the water cycle will be review, or something new to go over with the class:

- Where do we in the Region of Peel get our water from?
  - Brampton, Mississauga and Bolton get water from Lake Ontario. Other people who live in Caledon get water from wells, either on their own property, or municipal wells that are owned by the Region
  - Water from Lake Ontario is fresh, which means that the water is not salty like the water in oceans and seas
- The water cycle is the circular path that water follows as it moves from rivers and lakes, to the clouds (atmosphere) and back down to Earth as precipitation.

- **Sun:** the source of energy that drives the whole cycle
- **Lake Ontario:** this is our water source
- **Evaporation:** the sun heats up the water in lakes, rivers and oceans and turns it onto vapour (gas)
- **Condensation:** water vapour in the air gets cold and changes back into liquid form
- **Precipitation:** the clouds get heavy and water falls back to the earth in the form of rain, hail, sleet or snow
- **Runoff:** moves water across land and makes its way to the nearest body of water such as a lake

**This process is called the natural water cycle. But humans also change the path of water**

#### Slide 5: Human Water Cycle

- What happens when we use that water to brush our teeth, shower, go the bathroom – where does it go?
- **Ask:** Do we send it directly to the Lake?
  - **Answer:** NO
- **Ask:** If I was thirsty, can I go down to Lake Ontario and take a cup of water directly from the lake and drink it?
  - **Answer:** NO
- Why not?
  - Have students share their responses (i.e. water is dirty, not treated, has pet waste, trash in the water, bacteria and germs)  
The water in Lake Ontario might have bacteria, viruses, and germs in it. All those things could make us very sick if not treated. That is why we have to send the water to get treated so it can be cleaned and made safe for us to drink

The next few slides will cover how we treat water and wastewater

#### Slide 6: Video

- GoNoodle Video – Water Cycle <https://www.youtube.com/watch?v=KM-59ljA4Bs>
- Length of video: 3.16 minutes
  - Feel free to get the class up and dance/move along to the actions of the song
  - Review the stages and terms of the water cycle
    - **Evaporation, Condensation, Precipitation**
    - Water is always moving around the earth in different states (liquid, solid, gas)
    - Explain the different states of water from the water cycle
    - The water we use every day is the same water the dinosaurs used, so that means water is super old!

#### Slides 7: Animated Water Treatment

- Dew's Water Adventure <https://peelregion.vids.io/videos/ac9cd9b41d19e1c225/dews-water-adventure>
- Length of video: 4.03 minutes

#### Discussion Questions:

- Before playing the slides, ask the students
  - Why does water have to be treated before we use it?

All About Treatment worksheet: Have the students match the stages of water treatment while listening to the animated slides

#### Answer Key: All About Treatment – Water Treatment

1. Region of Peel 2. Intake Pipe, 3. Ozone, 4. Carbon 5. UV, 6. Membrane Filters 7. Chlorine & Fluoride 8. Lab Testing and 9. Toast to Tap Water

#### Slide 8: Animated Wastewater Treatment

- Dew's Wastewater Adventure <https://peelregion.vids.io/videos/069cd6b81717e3c58f/dews-wastewater-adventure>
- Length of video: 2:50 minutes
- All About Treatment worksheet: Have the students match the stages of wastewater treatment while listening to the animated slides
- **Did you know?**
  - Did you know that we have over 200 staff in the Region of Peel who treat and maintain our water to make sure every time you turn on the tap, the water is fresh and healthy to drink? And every time you flush your toilets, or take a bath, staff also work to make sure that dirty water gets cleaned before putting it back to the lake

**Answer Key: All About Treatment – Wastewater Treatment**

1. Region of Peel, 2. Water leaving homes, 3. Screening 4. Primary Settling Tanks, 5. Aeration Tanks 6. Secondary Clarifying Tanks 7. Lab Testing and 8. Final Outfall Pipe

**Slide 9: Video**

Video will highlight wastewater treatment

- TVO Now You Know: Where does the water go after I flush the toilet?  
[https://www.tvokids.com/preschool/now-you-know\\_kinderergarten/videos/toilets](https://www.tvokids.com/preschool/now-you-know_kinderergarten/videos/toilets)
- Length of video: 6.59 minutes **Discussion Questions:**
  - Why is it important that we treat the water we use?
    - Think of all the animal life that lives in the Lake
    - Would you swim or enjoy a boat ride in water that is full of stuff we pour down the drain? Would the animals enjoy it?
  - Why should everyone be careful of what they pour down the drain?
    - We need to care and respect for the earth and that starts with taking care of our water
    - When we pour harmful things down our sinks (oils, paints) this can cause negative impacts at our water resource recovery facility, as well as pollute our water

**Slide 10: Commit to make personal changes to conserving water**

- Classroom Water Promise
  - I will turn off the tap when washing my hands at school
  - Have all students sign off on the pledge and hang beside the classroom sink
- Home Water Promise
  - I will turn off the tap when brushing my teeth at home
- Wrap up the lesson
  - Ask students what they learned during this lesson
- Explore Water worksheet
  - Have students complete the worksheet after the lesson

**Extension Activities:**

- \_\_ Looking for ways to extend your learning, check out our extension activities at [peelregion.ca/enviroed](http://peelregion.ca/enviroed) and [Teach Green in Peel](#)

