

**Title: Great Lakes and Lakefront Connections**

**Subtitle:** Connecting people to waterfront and Jim Tovey Lakeview Conservation Area

**Educational Toolkit Stewardship Package**

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**Supported by:** Swim Drink Fish, Credit Valley Conservation (CVC), Region of Peel and Toronto and Region Conservation Authority (TRCA)

**Overview:**

As you know, water is **LIFE**. We all need water to survive. Yet, without careful use and conservation, water can be misused or even taken for granted. Water conservation starts with spending more time learning, appreciating, and preserving this precious resource, not just for our use, but for future generations.

The North American continent that we live in boasts of five Great Lakes, that contain 21 per cent of the world’s fresh water. Canada has an abundance of lakes, rivers, and forests. Yet, it faces its own set of environmental challenges. For example, many urban areas are experiencing the impacts of climate change and extreme weather events.

Credit Valley Conservation (CVC) is responsible for the land and water that surrounds the Credit River, including areas of Mississauga, Brampton, Georgetown, Caledon, and Orangeville. A major focus of CVC is to help the river and communities surrounding it prepare for climate change.

CVC is currently building a natural waterfront conservation area called the Jim Tovey Lakeview Conservation Area (JTLCA) that will establish important natural habitat and public space on the eastern edge of Mississauga (Lake Ontario). This project is in partnership with the Region of Peel, Toronto and Region Conservation Authority (TRCA) and Swim Drink Fish.

To create awareness of this project, draw people to the waterfront and encourage residents and visitors to have a deep sense of connection to the Great Lakes and JTLCA, a Community Stewardship Package has been developed. The package contains the following:

1. Educational Toolkit for Teachers
2. Factsheet - Transforming our Waterfront
3. Video capturing the progress of the Jim Tovey Lakeview Conservation Area project

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## **EDUCATIONAL TOOLKIT FOR TEACHERS**

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### **Contents:**

I. Learning objectives.....	2
II. Teacher background and vocabulary.....	2
III. PowerPoint presentation notes .....	3-7
IV. Power of partnerships.....	8
V. Activities that connect you to water.....	9-11
VI. Links for extended learning.....	11-12

### **Learning objectives for students**

1. Understand key concepts and global facts about water and the water cycle.
2. Learn about the Great Lakes, drainage basin and local watersheds.
3. Learn about the history and updates on the Jim Tovey Lakeview Conservation Area partnership project.
4. Share memories of water and connections to a lake, river or other waterbody.
5. Learn how to protect and improve the waterfront and explore ways to protect the environment in your daily lives.

### **Teacher background**

This educational toolkit is meant to be generic in nature and can be adapted to different age groups and group sizes. It is meant to be an introduction to some general facts about water, the water cycle, five great lakes, local watersheds, CVC, the construction of the Jim Tovey Lakeview Conservation Area and some hands-on stewardship and outreach activities.

It includes a vocabulary list, PowerPoint presentation, presentation notes, video links to the Watermark Project, and other resources that are available online to support student activities for specific age groups and curriculum needs.

The PowerPoint presentation begins by providing a high-level overview on global water concepts and the Great Lakes, and then gradually focuses on a local watershed-based project.

## **Vocabulary**

1. **Natural water cycle:** Continuous movement of water around the world through the processes of evaporation, transpiration, condensation, precipitation, run-off, infiltration, and percolation.
2. **Watershed:** The entire area of land that drains, or 'sheds', its rain or snow melt into a particular river is known as the watershed of that river.
3. **Drainage basin:** An area drained by a river system. A drainage basin also known as catchment area, acts like a funnel collecting all the water within the area covered by the basin and channeling it into a waterway. An example is the Great Lakes drainage basin.
4. **Habitat:** The natural home or environment of an animal, plant, or other organism. Examples are forests, meadow, wetland, etc.
5. **Water conservation:** Is the practice of using water efficiently to reduce unnecessary water usage.
6. **Stewardship:** Refers to the responsible use and protection of the natural environment through conservation and sustainable practices.

## **PowerPoint Presentation Notes**

### **Slide 1**

- Introduce yourself and share the title of the presentation.
- There are two goals of this presentation:
  - (1) To share general information about water, Great Lakes and the local watershed
  - (2) Create awareness in the community about the new waterfront area under construction and how to connect, explore, appreciate, and preserve the waterfront.
- Remember to review the presentation vocabulary with the participants prior to the presentation.

### **Slide 2**

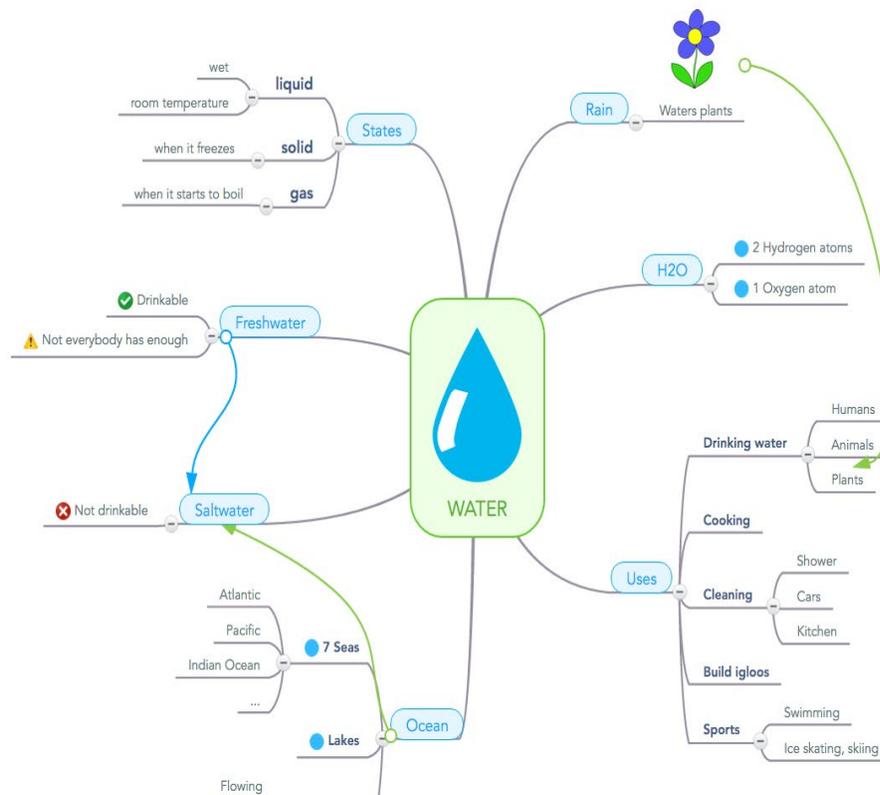
- Walk through the general outline of the presentation.

### **Slide 3**

### **Mind Mapping Activity**

- This is a brainstorming activity that will help students come up with words and terms that relate to the word 'Water'. This activity can be completed as a group or individually.

- Write the word 'WATER' in the middle of page/board and use different colored markers/pens to highlight the five themes focused around water. For example, write down all the natural sources of water such as rain, snow, lakes, river, ocean, etc. in a 'blue' colour; all man made sources such as canals, swimming pools, dams, etc. in a 'red' colour; and all uses of water such as cooking, cleaning, washing, swimming, manufacturing, etc. in a 'black' colour, etc. You should do this until you get at least 20-25 words on the page/board.
- Feel free to add other related themes as the group brainstorms. The idea behind this activity is to see how water is an integral part of our lives, how we're all connected to it in our daily lives and how we can't live without water. Reinforce the fact that Water is LIFE!
- Here's an example of a mind mapping activity:  
<https://www.mindmeister.com/blog/students-guide-to-mind-mapping/>



#### Slide 4

- Ask participants what types of water are found in nature. It can be categorized as: Fresh water - found in most lakes, rivers and glaciers. This can easily be treated and used for drinking.
- Salt water - found in seas and oceans. Salt water has higher concentrations of dissolved salts and minerals and supports a great deal of marine life.
- Ask participants to guess the percentage of water on planet earth - the ratio of saltwater versus fresh water.
- What type of water do you find in the sea and ocean? The answer is salt water.
- What type of water is found in lakes and rivers? – The answer is fresh water.

- On earth which one is greater, salt water or fresh water? Answer: Provide students with an actual break-up. Salt water is 97.5 per cent, while fresh water is only 2.5 per cent. Of this, about 1 per cent is locked up as glaciers and ice packs, another 1 per cent is found underground or in the soil, and the rest 0.5 per cent is found in surface waters.

### Slide 5

- Explain the water cycle.
- Water circulates continually in nature through three important processes: evaporation, condensation, and precipitation.
- When the sun heats up the water, it evaporates, rises into the atmosphere, cools and condenses into rain or snow in the clouds, and falls again to the surface as precipitation.
- The water falling on land collects in rivers and lakes, soil and porous layers of rock, and much of it flows back into the surface waters, where it will once more evaporate. The cycling of water in and out of the atmosphere is a significant aspect of the weather patterns on earth.
- Water also exists in three forms depending on what the ambient temperature is:
  - Solids: ice, snow and frost
  - Liquids: rain, dew, etc.
  - Gas: steam and water vapor

### Slide 6

- Ask participants if they can name lakes where fresh water is found.
- Hopefully, they say Great Lakes, if not prompt them.
- If they remember the word 'HOMES' it's easy to remember the names of the Great Lakes which are: H-Huron, O-Ontario, M-Michigan, E-Erie, S-Superior.
- Remind them that we live in a continent that has the five Great Lakes which hold 21 per cent of the worlds fresh water.
- St. Lawrence river drains the water from Lake Ontario into the ocean.

### Slide 7

- Explain the Great Lakes drainage basin acts like a funnel collecting all the water within the area covered by the basin and channeling it into a waterway.
- Each lake has its own basin unit.
- Canada has more than two million lakes and one-fifth of the worlds fresh water lie within our borders.

### Slide 8

- Ask participants 'if they were to throw something on the street, where does it end up?'
- Tell them that it is going to end up in the lake. For example, if you put pesticides on the lawn, when it rains, it runs off your lawn, onto the driveway, into the sewer drain and ends up in the lake. This is because everything flows downstream.
- The health of Lake Ontario is directly related to the health of the watersheds that feed into it.
- And the health of the watersheds is directly related to the health of the landscape.
- Therefore, watershed based planning is key.

- One such river is the credit river and hence the area of land around it is called the Credit River Watershed.

### Slide 9

- Different watershed units make up the Lake Basin unit.
- Explain the term watershed. It is an area of land that catches rain and snow, and drains or seeps into a marsh, stream, river, lake or groundwater.
- They come in all shapes and sizes and can vary from millions of acres like the land that drains into the Great Lakes, to a few acres that drain into a river or a pond.
- Each watershed has three main functions: to act as a *sponge* and soak up everything underground, to *filter* runoff water from streets and highways before it reaches the lake and to create *habitat* for different living organisms, including humans, plants and animals.

### Slide 10

- The credit river is almost 90 km long. It runs southeast from its headwaters in Orangeville, Erin and Mono, through nine municipalities, eventually draining into Lake Ontario at Port Credit, Mississauga.

### Slide 11

- Ask participants if they know anything about Credit Valley Conservation (CVC) or if know anyone who works there?
- Tell them that CVC is a community-based environmental organization, dedicated to protecting, restoring, and managing the natural resources of the Credit River Watershed.
- Established by the provincial government in 1954, CVC is one of 36 Conservation Authorities in Ontario.
- As the primary scientific authority for the watershed, CVC works in partnership with municipal governments, schools, businesses, and community organizations to deliver locally based programs.

### Slide 12

- Ask participants if they know who Jim Tovey is?
- Tell them that he was the City of Mississauga's councillor and visionary behind the city's waterfront redevelopment project who passed away in 2018.
- He was elected as Ward 1 councillor in 2010. In 2012, he received the Queen's Jubilee Medal for his commitment to championing a sustainable waterfront and serving his constituents.
- Working with residents in his ward, he drafted a vision to reclaim access to the City's waterfront and establish sustainable, mixed-use communities for those living within Ward "1-der-ful," as he called it.
- He envisioned a healthier waterfront in Mississauga's Lakeview community, where nature can thrive, and people can connect with the lake. The conservation area is his legacy of environmental action on the waterfront.

### Slide 13-17

- Explain that the Jim Tovey Lakeview Conservation Area (JTLCA) project is a joint effort of the CVC, Region of Peel and Toronto and Region Conservation Authority (TRCA) providing technical expertise. The project is supported by the Cities of Mississauga and Toronto who provide on-going review.
- Construction began in 2016 and the completed Jim Tovey Lakeview Conservation Area is expected to open in 2025.
- The conservation area is being built along the Mississauga shoreline in an area that currently has no public access to the lake.
- It will have 1.5 km of waterfront trail, 12 hectares of meadow, 5 hectares of forest, 8 hectares of wetland and one hectare of cobble beach.
- Together, these connected habitats make up a complete coastal ecosystem that will support a wide variety of local fish, wildlife as well as migratory birds.
- The new green space will connect with Marie Curtis Park and the future Inspiration Lakeview lands next to the G.E. Booth Wastewater treatment plant.
- It will transform the Lakeview neighborhood into a hub for passive waterfront recreation, a hotspot for wildlife migration and a green oasis in the heart of the city.

### Slide 18-19

- What does all this background information mean to us?
- Do a quick recap of lessons learnt so far.
- Then ask them the next important question. What role can you play in protecting the environment, in conserving water and keeping the lakes clean and great? Get a couple of answers.
- Discuss a few things they can do to keep lakes and the waterfront clean and healthy.
- Use the points on the slide as a starting point for discussion and ask them to add more practical things that they can think of
- Discuss ways to protect the environment. Encourage participants to add to the list.

### Slide 20

- Reinforce the power of partnership, recognize each partner organization.
- Thank everyone for actively participating in the session.

### Slide 21

- **Water Challenge Badge:** A PDF document prepared by Youth and United Nations Global Alliance (YUNGA) Learning and Action series. <http://www.fao.org/3/a-i3225e.pdf>
- This booklet is intended as a guide for teachers and youth leaders.

### Slide 22

- **The Watermark Project** is a community effort to collect and archive true stories about the ways people interact with water.
- These stories help us all recognize our dependence on water and highlight water's influence on our culture.
- By saving and studying these stories, we help protect the waters we love. <https://www.watermarkproject.ca/>

## **TOOLKIT FOR STUDENTS/ YOUTH GROUPS**

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This toolkit is designed for students and youth in general to inform them about the Jim Tovey Lakeview Conservation Area (JTLCA) project and to help them connect to the waterfront. The activities can be completed individually or in groups.

The factsheet, video and PowerPoint presentation are a way to gain more background information about the JTLCA project.

What does this new ecological habitat or natural green oasis in the heart of the city mean to you? How can you connect to this new natural space?

### **Activity #1: Mindfulness Exercise**

**Purpose:** Recalling personal memories of water in the natural environment.

#### **Method:**

1. Find a quiet, peaceful area and sit in a comfortable position
2. Go back to your childhood and think of your first experience with water in the natural environment.
3. Was it at a beach, a pond, a river, a lake or the ocean?
4. What activity were you engaged in? Were you playing at the beach, feeling the waves touch your feet, canoeing or kayaking in the river, fishing in the lake or going on a cruise with your family and friends?
5. What sort of emotion did you feel when you were connecting to water?
6. Write those thoughts and experiences on a piece of paper.

### **Activity #2: Artwork**

**Purpose:** To bring out the creativity in the person and be a nature painter.

#### **Method:**

1. Use watercolors, crayons, colored pencils or anything to show your best experience with water in the form of art.
2. Artwork can be done on a T-shirt, canvas, paper, bristol board, or any other material.
3. You can also use any material you find in nature to create your unique piece of art: leaves, flowers, twigs, stones, tree cookies, ropes, logs of wood, pebbles, etc.



### **Activity #3: Sing songs**

**Purpose:** Use poetry and music to spread awareness and sing songs.

**Example:** Water Song (sing to the tune: My Bonnie Lies Over the Ocean)

#### **The Water lies over the ocean**

The water lies over the ocean, the water lies under the ground  
over and over it cycles, from under the sand to the clouds

**Water! Water! I want to save water each day- my way!**

**Water! Water! And here's how I'll start it today!**

I'll turn off the water when brushing, I'll take shorter showers at night  
I won't flush dead bugs down the toilet; I'll listen for leaks to fix right

**Water! Water! I want to save water each day- my way!**

**Water! Water! And here's how I'll start it today!**

I'll shut off the sprinklers in rain storms; I'll turn off the hose when I'm done  
I'll watch how much water I'm using, and make saving water real fun!

**Water! Water! I want to save water each day- my way!**

**Water! Water! And here's how I'll start it today!**

I'll think of cool ways to save water, and tell all my friends it's not hard  
I won't waste a drop of more water, at home or at school or Earth's yard.

**Water! Water! I want to save water each day- my way!**

**Water! Water! And here's how I'll start it today!**

**I WANT TO SAVE WATER EACH DAY!**

**Courtesy:** <http://earth911.org>

## **Activity #4: Tracking my connection to the environment**

**Purpose:** Using a calendar method, track all your activities that relate to nature or the environment.

1. Natural areas visited.
2. Activities you did in the outdoor natural space.
3. Actions that made a positive impact on the environment.
4. Behaviors that negatively impact the environment.
5. List of things you can do to show you care for the environment.

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### **Links for External learning**

#### **1. Water Challenge Badge:**

A PDF document prepared by Youth and United Nations Global Alliance (YUNGA) Learning and Action series. This booklet is intended to be used as a guide for teachers and youth leaders.

<http://www.fao.org/3/a-i3225e.pdf>

#### **2. Project Wet (Water education for Teachers)**

Curriculum and Activity guide: [www.projectwet.org](http://www.projectwet.org)

#### **3. Canadian Geographic's interactive map**

[www.canadiangeographic.ca/watersheds](http://www.canadiangeographic.ca/watersheds)

The 'Protect your Watershed' map outlines 595 watersheds in Canada. It enables users to find their local watershed and to navigate it via Google maps. It also provides links to community conservation groups working to preserve rivers, streams, wetlands and lakes.