

WATER AWARENESS AND ACTION CAMPAIGN KIT

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WATER AWARENESS & ACTION CAMPAIGNS

Water is the basis of all life on Earth. Humans need water to drink, grow food, and clean. Water also provides heat to our homes and amazing recreational opportunities (like swimming and fishing). Animals that live on land and those that live in lakes, ponds, and oceans also need clean water to survive and thrive.

The health of our environment, including the health of plants and animals, is deeply tied to the health of our waterways. It is no surprise that ensuring we have access to safe, clean water is an important issue for so many people across the province, country, and the world. Teaching about water issues, taking action to conserve and preserve water, ensuring that all people and animals have access to clean water, and of course celebrating our natural resources are all important parts of a Water Awareness and Action Campaign.

This resource will focus on two main water related topics that impact schools across Ontario: bottled water/tap water and water conservation. Both topics can be connected to other important global issues including; health, human rights, economy, sustainable development, First Nations' land and water rights, climate change, and energy conservation.

Hosting a Water Awareness and Action Campaign at school is a great way to learn about water issues that directly affect your community. It is an excellent way to educate students, teachers, and families about the environmental impacts of their actions and provide them with the tools needed to conserve and preserve water both at home and at school.

When planning for your Water Awareness and Action Campaign, ask students to select water issues to explore that interest them and provide opportunities to take meaningful action.

SOME OF THE WATER ISSUES FACING OUR WORLD TODAY INCLUDE:



DESIGNING YOUR WATER AWARENESS CAMPAIGN

Plan your campaign

- Choose to host a one-time water awareness event or implement a weeklong campaign during World Water Week (week of March 22).
- Provide teachers with resources and suggestions for activities that promote water awareness throughout your school.
- Select a campaign theme or various actions to take over the day/week/month. Some Water Awareness and Action Campaign ideas:
 - **Ban the Bottle:** Focus on waste by reducing single-use water bottles.
 - **Turn to the Tap:** Expose misconceptions about tap water and increase the use and awareness of water from the faucet (or drinking fountain).
 - **Rain Barrel Fundraiser:** Conserve water by including a rain barrel in your School Ground Greening project.
 - **Water Conservation:** Encourage student and families to conserve water with tips, tricks, and pledges for school and home.
 - **Stewarding Local Waterways:** Get students outside to take care of their local waterways by conducting clean-ups and doing research on local streams, rivers, ponds, or lakes.

Communicate

- Hold a launch assembly to share information about the campaign and how classes can actively participate in the activities.
- Use social media platforms such as Twitter, Facebook, Instagram, and Vine to provide water conservation tips or highlight interesting facts.

- Create a bulletin board to educate students and staff about local and global water issues.
- Send out a newsletter to the parent community inviting them to participate in water conservation actions throughout the campaign.

Implement and monitor success

- Track student participation in the campaign, individually or as classes, and announce the winners.
- Mark your hydration stations' plastic water bottle counter before and after the campaign.
- Record and update fundraising efforts on a chart in a central area.

Celebrate success, reflect, and evaluate

- Celebrate your school's participation in your Water Awareness and Action Campaign via your newsletter, website, or blog.
- Create a Bottled Water Free Award, or similar award, to be presented to the individual or class with the greatest active participation.

Tips for success

- Link this campaign with learning in every grade through curriculum-linked lessons or learning activities (see pages 18-24).
- Take this campaign further! Create Bottled Water Free Zones at your school to encourage students to bring in reusable water bottles on a daily basis.

SCHOOL COMMUNICATIONS

Letter to Parents/Guardians

(Insert Date)

Dear Parents/Guardians,

World Water Day is a global event celebrated each year on March 22nd. On this day, people around the world take action to conserve water, educate others, and celebrate this vital resource!

This year [Insert School Name] will be participating in a Water Awareness and Action Campaign. On [day, week, month, etc.] we will encourage students and their families to take action in conserving water, protecting our waterways, and celebrating this amazing resource. Throughout the campaign, students will have the opportunity to participate in a variety of activities such as [insert activity/workshop/lesson/event]. Simple actions at home, such as using a reusable water bottle or turning off the tap while washing dishes, can have a big impact on the environment and help to support the cause! Thank you for your support, we look forward to hearing about the unique ways your family participated in raising awareness and taking action!

Sincerely,

The EcoTeam [Insert Name]

SCHOOL COMMUNICATIONS

Use this information in school newsletters, campaign posters, and morning announcements

Facts & Trivia: Incorporate facts and trivia about water and water conservation into your daily announcements and encourage students to share their own knowledge and reflect on what they learn.

Water Conservation Facts:

- Small water leaks can have a large impact. Canada Energy Efficiency Alliance shows hot water that drips for a month could fill 16 bathtubs (about 3,600 litres).¹
- Ontarians use 260 litres/day of water, nearly twice as much as countries with similar living standards (UK, Germany, Netherlands).²
- Recycling paper products, glass, metals and plastics cuts down on pollution and also reduces the amount of water we use. Manufacturing recycled paper uses 58% less water than making paper from virgin wood pulp. Making glass from recycled materials cuts related air pollution 20% and water pollution 50%.³
- Economic growth and individual wealth are shifting diets from predominantly starch-based to meat and dairy, which require more water. Producing 1 kilo rice, for example, requires about 3,500 litres of water, while 1 kilo of beef requires about 5,000 litres. This shift in diet is the greatest to impact on water consumption over the past 30 years, and is likely to continue well into the middle of the twenty-first century.⁴
- On average, a vegan, a person who doesn't eat meat or dairy, indirectly consumes nearly 600 gallons of water per day less than a person who eats the average American diet.⁵
- The water used to create your laptop could wash nearly 70 loads of laundry in a standard machine.⁶
- More water is used to manufacture a car than to fill a swimming pool.⁷

Bottled Water & Tap Water Facts:

- As few as 50% of the water bottles urban cities consume everyday are actually being recycled. That means as many as 65 million empty plastic water bottles per year end up as garbage in a landfill waste site. In some communities the percentage of water bottles that end up in landfills can be as high as 80%.⁸
- It takes three litres of water to produce one litre of bottled water.⁹
- The energy we waste using bottle water would be enough to power 190,000 homes.¹⁰
- Drinking bottled water is 240 to 10,000 times more expensive than drinking tap water.¹¹
- It is estimated the one disposable plastic water bottle will take over 1,000 years to bio-degrade.¹²
- Nestlé pays only \$3.71 for every million litres of water it draws from a well near Hillsburgh, Ont., and has permission to withdraw 1.13 million litres of groundwater per day.¹³
- Bottled water often travels many kilometers before reaching its final destination. The further the bottle travels, the more greenhouse gas emissions are released into our environment. One example is FIJI Water that travels 12,372 km to arrive to Toronto, Ontario.¹⁴
- The amount of oil used for the production of bottled water is equivalent to putting 1 million cars on the road.¹⁵

SCHOOL COMMUNICATIONS

Calendar Highlights

- **Bottled Water Free Day** (March 16): Bottled Water Free Day was founded to raise awareness about the negative impacts that bottled water has on our environment, as well as to draw attention to the privatization of water. For more information: <http://cfs-fcee.ca/issues/bottled-water-free/>
- **World Water Day** (March 22): A United Nations global event that focuses on the importance of freshwater and advocates for the sustainable management of freshwater resources. For more information: www.unwater.org/campaigns/world-water-day
- **World Water Week** (Celebrated in Canada during the 3rd week of March): A celebration of water across the country. For more information: www.canadawaterweek.com

Water Conservation Tips for Home and School

- To conserve water, choose native trees, grasses, or shrubs that tend to be drought resistant.
- Wash fruits and vegetables in a pan of water instead of running water from the tap.
- Love cool water? Keep a pitcher of drinking water in the refrigerator instead of running tap water.
- When washing dishes by hand, fill one basin with wash water and the other with rinse to minimize the amount of water used.
- Save 25 gallons of water with a standard 5 gallon per minute showerhead when you take a five-minute shower instead of a ten-minute one!
- Save approximately 10 gallons of water per day when you turn the water off when brushing your teeth.
- Put a layer of mulch around trees and plants to reduce evaporation and keep the soil cool.

EcoSchools in ACTION!

Southwood Secondary School (WRDSB) created Coffee House sessions at their school to educate the wider school community about water conservation efforts. Students have built and maintain wells in Kenya and continue to educate others about reducing our impacts on water at school.

WHOLE SCHOOL ACTIVITIES

There are several opportunities to involve the whole school community in Water Awareness and Action Campaign activities. School EcoTeams can develop and present the following events and initiatives:

- Whole school assembly
- Student eco-themed skits
- Talent show/coffee house
- Student featured videos and presentations
- Student organized info booths
- Speaker series
- Eco-themed spirit day

Water Pledge: Create a water droplet or a reusable water bottle template to distribute to every student. Ask the students to write down one way they will conserve water at school/home. Collect the pledges and display them in a central area of the school.

Water Summit: Turn your gym into a water education fair for the day and have students lead a variety of activities to educate the whole school about different water issues. Activities can include a tap water vs. plastic water bottle water taste test and testing local water samples.

Back the Tap Campaign: Join the official Back the Tap Campaign to educate your school about bottled water. As a group, commit to reducing the use of bottled water, create bottled water free zones, or organize a public forum or photo exposition about access to water. The Back the Tap Campaign website has a variety of resources and information that will help you in your campaign initiative. For more information: <http://cfs-fcee.ca/issues/bottled-water-free/>

Host a Water Themed Movie Night: Invite students and their families to your school for a movie night and select a movie about pertinent water issues in Canada and abroad. Suggested titles: *Flow*, *Blue Gold*, *World Water Wars*, *The Water Front*, and *Tapped*.

Reusable Water Bottles Design Contest:

Challenge students to submit a design for a reusable bottle. After all designs have been submitted, students can vote on their favourite design. The winning design(s) can be printed and sold as a school fundraiser.

The Great Gulp: Have all students take a synchronized gulp of tap water, as they learn about the benefits of tap water. EcoTeams can host a school-wide presentation before or during the Great Gulp. For more information: www.peelregion.ca/pw/thegreatgulp

Plastic Water Bottle Art Show: Conduct a waste audit or collect plastic water bottles from recycling bins throughout your school. Showcase this plastic waste in an art show or installation in one of the school's high traffic areas. Throughout World Water Day/Week, the EcoTeam can give tours of the exhibit.

Blue Spirit Day: Ask all students to dress in blue for a water focused spirit day. The EcoTeam can organize class challenges and perform skits to explain the importance of clean water.

Host a Fundraiser: Promote conservation by selling reusable water bottles or rain barrels to students, teachers, and families. Use the money to purchase a new hydration station or support a local water issue.

Adopt a Local Waterway: Get students outside and adopt a section of a nearby stream, pond, or lake. Set up a regular clean-up program and ask classrooms to research the area.



CLASSROOM LESSONS



EXPLORING THE WATER AROUND US

Grades K-2, Science & Technology

Source: Created by Ontario EcoSchools writing team.

DESCRIPTION

In this lesson students will learn about water in their everyday lives and how they can help to conserve water at home and at school. Students will go outside to explore water on their school grounds where they will be asked to think about why water is important for plants and animals in the environment. Finally, students will make a classroom pledge to conserve and preserve water to maintain a healthy environment.

CURRICULUM LINKS – SCIENCE AND TECHNOLOGY, K-2

KINDERGARTEN - Science and Technology

Overall Expectation 3: demonstrate an understanding of the natural world and the need to care for and respect the environment

GRADE 1 - Science and Technology

Understanding Life Systems: Needs and Characteristics of Living Things

Overall Expectation 1: assess the role of humans in maintaining a healthy environment

GRADE 2 - Science and Technology

Understanding Earth and Space Systems: Air and Water in the Environment

Overall Expectation 1: assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things

PLANNING NOTES

Materials

- Pictures of water
- Chart paper, chalk board, or white board
- Banner paper and markers
- Optional: set of clipboards and pencils and/or magnifying glasses

Recommended class time

- 2 to 3 periods

Things to think about

- When going outside, make sure students are dressed appropriately and there is enough adult supervision.

TEACHING/LEARNING STRATEGIES

Ignite - Indoors

1. Show students pictures of water selected from books or online sources.
2. Ask students to think about how they use water in their everyday lives (sink, toilets, washing machine, lakes, and puddles). Where do you see water at school, home, and in the community? What do humans use water for? Write down their answers on the white board/chart paper.
3. Explain that the whole class will be going on a water hunt outside to explore the area around the school (or a local park). Ask them if they think they will see any water and give them time to share their ideas with a partner.

Explore - Outdoors

1. Before going out, make sure that all students are dressed appropriately, have a partner, and know what area they are allowed to investigate. Go over the boundaries again when you get outdoors. If providing students with magnifying glasses or clip boards, hand them out at this time.
2. Give students the opportunity to explore the designated area with a partner and ask them to identify where they can see water, or think that water exists. Guide the class to different areas around the school/park or let students guide their own free exploration of the outdoor space. They may use their magnifying glasses to look at water accumulation up close, or take notes/draw pictures with their clipboard and pencils. Ask students to think about how humans, plants, and animals might benefit from the water outside.

Reflect - Indoors

1. Once back inside, invite students to share what they saw or thought about during their water hunt. What was the most exciting thing they saw? What questions do they now have about water? Why do they think water is important for humans, plants, and animals?
2. Explain that if we want to make sure that there is enough clean water for humans, animals, and plants, it is important they we do our part to conserve and preserve water. This means we should try not waste or pollute water.
3. Have a discussion with students about what they can do to conserve and preserve water. Brainstorm some strategies such as turning off the faucet while brushing teeth or being careful about what we put down the drain. You can refer to the chart paper created at the beginning of the activity to spark ideas.
4. Using a large piece of paper create a classroom water pledge. In the centre of the banner write your pledge (e.g. we pledge to conserve and preserve water at home and at school). Around the edge of the pledge have students share why water is important for humans, plants, and/or animals; tips for conserving and preserving water at home and at school; or have each student trace their hand and sign their name around the pledge. Hang the pledge in the hall for other classes to see and learn from.

ASSESSMENT OPPORTUNITIES

Student understanding can be monitored during questions and discussion in the reflection period of this activity. Look for comprehension in each student's personal pledge.

EXTENSIONS

School Wide Ad Campaign: Create posters or morning announcements with water conservation facts and tips to encourage all students and teachers not to waste water.

Seasonal Water Hunts: Explore how water accumulates outside in all seasons and compare the differences. How does this affect humans, animals, and plants?



WORLD WATER DAY: CREATE A MEDIA CAMPAIGN

Grades 3-8, Language

Source: Adapted from learning activities created by the Peel EcoSchools Writing Team, made possible by support from The Region of Peel and Toronto and Region Conservation Authority.

DESCRIPTION

In this learning activity students will explore water conservation and the impact that human activity has on natural resources. Students will investigate the positive and negative consequences of these interactions. They will design a media campaign to raise awareness about the importance of conserving water and other natural resources.

CURRICULUM LINKS – LANGUAGE, GRADES 3-8

Media Literacy

Overall Expectation 3: create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques

Overall Expectation 4: reflect on and identify their strengths as media interpreters and creators, areas for improvement, and the strategies they found most helpful in understanding and creating media texts

PLANNING NOTES

Materials

- Computer
- Chart paper
- Dot stickers
- Campaign design materials

Suggested Websites

- Bottle Water Free: <http://cfs-fcee.ca/issues/bottled-water-free/>
- Yellow Fish Road: www.yellowfishroad.org/
- Canada Water Week: <http://canadawaterweek.com>
- United Nations World Water Day: www.unwater.org/worldwaterday
- Ban the Bottle: www.banthebottle.net
- The Story of Stuff: Bottled Water: <http://storyofstuff.org/movies/story-of-bottled-water>

Recommended class time

This activity can be taught over the course of two weeks or extended to allow students to implement the campaign they design.

Things to think about

World Water day is held annually on March 22 to advocate for the sustainable management of freshwater resources. Conservation campaigns are crucial methods of raising awareness about important environmental issues and how they impact our daily lives. Effective campaigns incorporate key media components, including creative slogans, marketing initiatives that target specific audiences, and easy access to important information.

TEACHING/LEARNING STRATEGIES

Ignite

1. **Whole Class:** Display a selection of websites that support freshwater conservation campaigns/or organization (see Suggested Websites) and ask students to identify the main message in each one.
2. **Individual Exploration:** Invite all students to select one freshwater conservation campaign/or organization to explore in-depth using the following questions as guidelines:
 - What specific issue is the campaign addressing?
 - Who is the target audience? How do you know?
 - What different types of support does the campaign use to reach its target audience?
 - Did the campaign appeal to you? Why?
 - Is the campaign successful? How do you know?
3. **Whole Class:** As a class, create a chart that addresses all of the above questions and ask students to share their responses with the class. Complete the chart so everyone has access to the information and move on to a discussion about what makes an effective campaign. Combine student ideas in to a list of campaign criteria.

Explore

1. **Group Work:** Using the criteria outlined by the class, students will work in pairs/small groups to design their own freshwater sustainability campaign. All campaigns must include a key message/purpose and have a target audience. Students can add various components including:
 - slogan
 - campaign poster
 - informational material (brochure, infographic, article)
 - promotional material (t-shirt, stickers, etc.)
 - advertising material (for television/radio/ newspaper)
 - online marketing strategy
 - event plan

Reflect

1. **Whole Class:** After designing their campaign, each pair or group will display their materials in the classroom for a gallery walk. All students will have the opportunity to walk around the room and visit the other campaigns. Encourage them to write down any questions they have and facilitate a Q&A after they view all the campaigns.
2. **Individual Exploration:** Once all students have viewed and discussed the various campaigns, distribute dot stickers and ask them to place their dot next to the campaign that stood out to them (you can allow students to use three dots for three votes if your class is larger in size). The campaign with the most dots can present their campaign idea to the school EcoTeam.

DIFFERENTIATED INSTRUCTION

This learning activity can be adapted to meet a variety of learning styles and specific needs. For example, students can use assistive technology to research a campaign/or organization and can select a campaign from the class list or do additional research to find their own. The campaign design activity is open-ended and allows for students to select what works for them. The campaign criteria can also be modified and/or directly supported by teachers.

ASSESSMENT OPPORTUNITIES

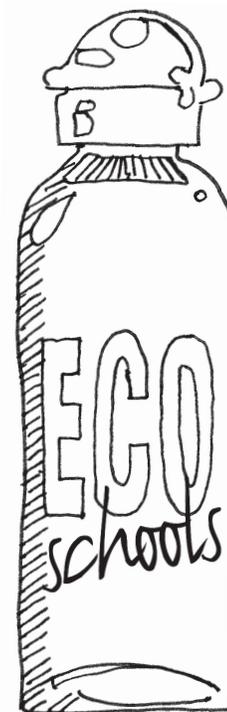
Anecdotal evidence can be collected throughout the learning activity to identify gaps in knowledge or misconceptions to ensure that they are addressed. Student understanding can be monitored and assessed using the campaign criteria generated by the class. Students can also help create a rubric to assess the quality of their campaigns and the effectiveness of their presentation.

EXTENSIONS

Campaign in Action: As a class, partner with the school EcoTeam to implement the winning campaign. Make changes and adjustments to meet the needs of the school and design/use a basic monitoring and evaluation tool to assess the campaign's effectiveness.

Beyond Water: Apply similar campaign research and design principles to another environmental issue. Students can choose a topic that interests them and relate it to a school-wide celebration, i.e. Earth Day. Include activities for the whole school to participate in.

Beyond the School: Consider partnering with other community schools or local organizations to extend your World Water Day campaign. Students can visit the interested schools/organizations and present their campaign materials. They can help implement the campaign and/or bring back ideas from those schools/organizations to use at their schools.





WAT'ER YOU WEARING YOU WEARING

Grade 9, Science, Academic, SNC1D

Source: Adapted from Toronto and Region Conservation lesson: Wat'er You Wearing. For more information: www.trca-education.ca

DESCRIPTION

This activity introduces the concept of virtual water and examines the amount of water that is embedded in our clothing as a result of production. Students will develop a Virtual Water Trail Diagram and a means to identify stages of production that consume water and then think of strategies to reduce their virtual water footprint.

CURRICULUM LINKS – SCIENCE, GRADE 9, ACADEMIC, SNC1D

Biology: Sustainable Ecosystems

Overall Expectation B1: assess the impact of human activities on the sustainability of terrestrial and/or aquatic ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts

PLANNING NOTES

Materials

- Fashion catalogues or magazines
- Example - *Virtual Water Trail Diagram of a T-Shirt* (Appendix 1)
- *Wat'er You Wearing Recording Sheet* (Appendix 2)

Suggested Videos

A great way to explore the social and environmental impacts of consumer behaviour is by screening "The Story of Stuff" in your classroom. Available for free online at www.storyofstuff.com, this 20-minute video examines the life cycle of everyday products from resource extraction to disposal.

Recommended class time

This activity can be taught over the course of two weeks.

Background

According to the Canadian Water Governance group, the water that Canadians use for washing, cooking, flushing the toilet and drinking adds up to approximately 331 litres per day per person¹⁶. Many of us do not realize however, that without even thinking about it, we also consume hundreds of thousands of litres of water embedded in our food, clothing, and other products. This water use contributes to our overall water consumption, or water footprint, and is called virtual water. Nearly everything we use contains virtual water from cell phones to paper to shoes to roller-coasters.

While it is difficult to calculate a product's precise virtual water content, the concept encourages us think about water differently – a few litres of water are wasted when you take a long shower, but hundreds (or even thousands!) of litres of water are wasted when you throw away manufactured products.

Some approximate virtual water values are:

- 1 pair of jeans = 10,850 litres of water
- 1 pair of shoes = 8000 litres water
- 1 cotton shirt = 2700 litres of water
- 1 sheet of paper = 10 litres of water
- 1 mid-sized car = 400,000 litres of water

TEACHING/LEARNING STRATEGIES

Ignite

1. Have the students bring old catalogues or fashion magazines to class.
2. Ask students what they think virtual water is, and how it might relate to the clothes or items promoted in the catalogues/magazines that they brought in to class.
3. Discuss the concept of virtual water, specifically within the context of clothing production (refer to the Background Information). Where does this virtual water in these products come from? How might water be embedded in items of clothing? What stages of production need water?
4. In small groups, ask students to select one item that they would want to purchase from the magazines. Invite students to reflect on why they selected that particular item using the questions on the *Wat'er You Wearing Recording Sheet* (Appendix 2).

Explore

1. In their small groups, ask students to research, discuss, and develop a Virtual Water Trail Diagram (VWTD) for the clothing item they selected. Explain that a VWTD can provide a framework for estimating the amount of water that is used in the production of goods. VWTDs identify the various stages of production of a particular item, paying close attention to where water is used, degraded, or lost at each stage. They attempt to explain how to begin calculating the amount of virtual water contained in a particular item.
2. Ask students to consider and list all components and characteristics of the item. What materials are needed? How are these materials acquired? Does the item have a zipper, buttons or other embellishments? How are these extra pieces made? Is the item dyed, screened, or chemically treated?
 - Creating a VWTD can be a challenging exercise. To support your students, provide examples of headings that might be included in a VWTD, such as materials acquisition, processing, manufacturing, transportation, etc. Use *Example - Virtual Water Trail Diagram of a T-Shirt* (Appendix 1) as a guide.

Reflect

1. Ask each group to draw their VWTD on a piece of chart paper and present it to the class. As a larger group, discuss any missing stages that could be included. For example, how could the VWTD be extended to include the marketing and disposal of the item?
2. Ask students to individually reflect on the activity and answer the following questions:
 - How does knowing the volume of virtual water contained in items of clothing make you think about your personal water use differently?
 - Will it change your approach to shopping? Why? Why not?

EXTENSIONS

Get Crafty: How would you design and create a piece of clothing that contained the lowest possible volume of virtual water? What waste materials could be reused to make clothes?

Reuse! Clothing Drive/Yard Sale: Spread the word! Develop and implement a school-wide campaign that highlights the links between our consumer behaviour to our overall water use. This could include a visual representation of how many litres of water are embedded in the clothes we wear (2700 litres in a plain cotton t-shirt). Collect water bottles or bottle caps to represent the virtual water in a garment and create a powerful display.

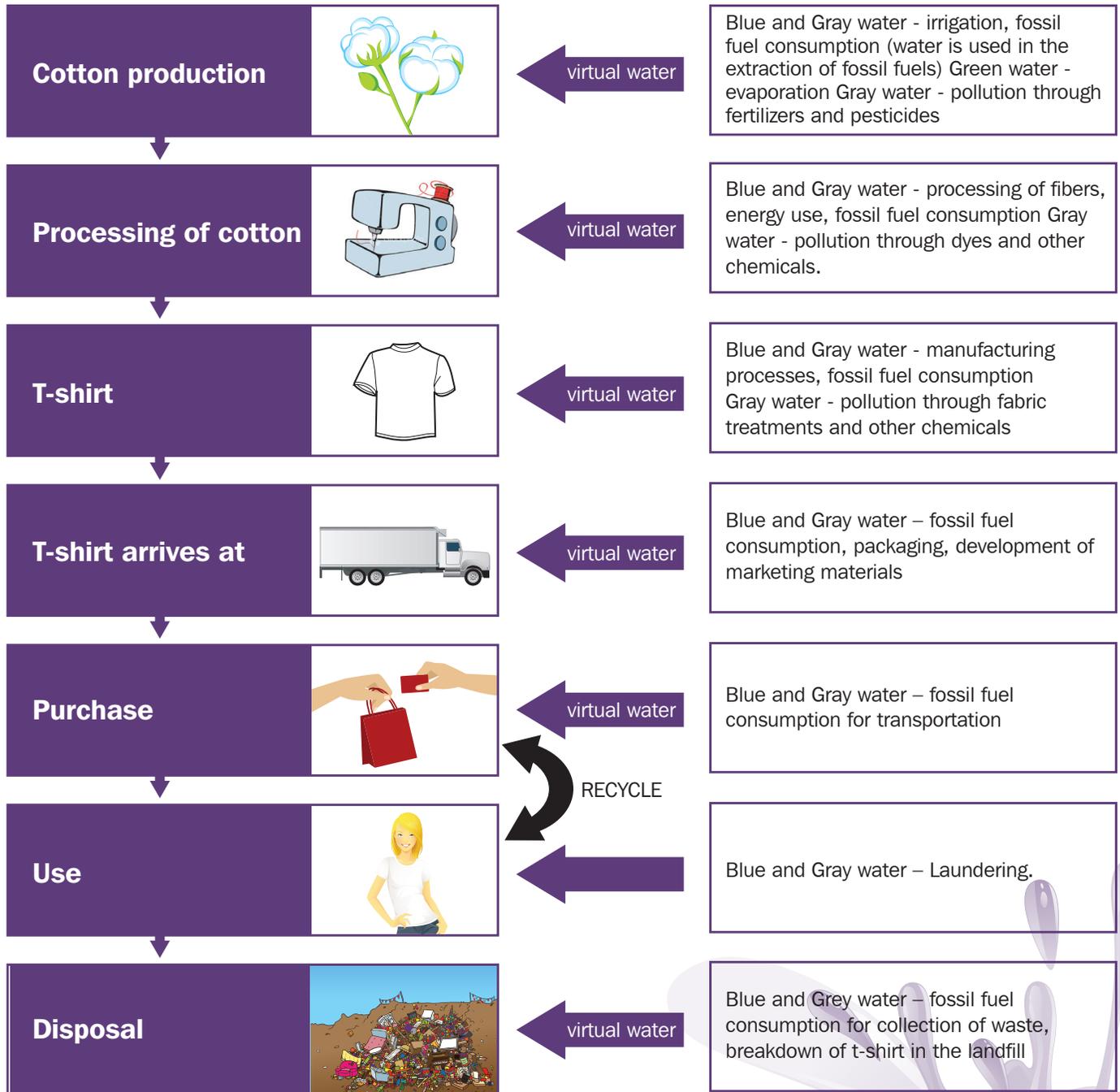
APPENDICES

Appendix 1: *Example - Virtual Water Trail Diagram of a T-Shirt*

Appendix 2: *Wat'er You Wearing Recording Sheet*

WAT'ER YOU WEARING?

EXAMPLE - VIRTUAL WATER TRAIL DIAGRAM OF A PLAIN COTTON T-SHIRT



WAT'ER YOU WEARING?
WAT'ER YOU WEARING RECORDING SHEET



Name: _____ Date: _____

1. Define virtual water.
2. Select one item of clothing that you either already own or would likely purchase.
3. Reflect on why you selected that item of clothing. Was it stylish? Did it look comfortable? Was it manufactured in a particular country? Was it manufactured in a particular way?
4. Create a Virtual Water Trail Diagram (VWTD) for the clothing item you selected. A VWTD can provide a framework for estimating the amount of water that is used in the production of goods. VWTD's seek to identify the various stages of production of a particular item, paying close attention to where water is used, degraded or lost at each stage. They attempt to explain how we begin calculating the amount of virtual water that is contained in a particular item.
5. Consider and list all components and characteristics of the item. What materials are needed? How are these materials acquired? Does the item have a zipper, buttons or other embellishments? How are these extra pieces made? Is the item dyed, screened or chemically treated?

Materials	Origin

SCHOOL WATER AUDIT

Completing a School Water Audit provides a quick snapshot of how and where water is being used at your school. The guidelines below outline the practices and behaviours that school communities are encouraged to support as they work towards reducing their overall water use. Before you begin, you may want to ask your caretaker, custodian or lead hand to accompany you as you complete the audit. They possess the most knowledge about your school's water system and may have recommendations on ways to address the guidelines. As a team, walk around your school and record your responses.

Following the Ontario EcoSchools model, it may be helpful to conduct an audit in the autumn and use your findings to develop a plan for reducing water use at your school. Another audit in the spring will reveal how your practices and behaviours have changed. **For more information about Ontario EcoSchools, visit www.ontarioecoschools.org.**

SCHOOL: _____ **DATE:** _____

Water Conservation Guidelines	Just Beginning	Approaching Implementation	Implemented	Extensively Implemented	Comments or Issues to Report
BEHAVIOUR					
1. Taps are turned off completely when not in use. <i>(include washrooms, classrooms, staff areas and outside)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Trash is put in appropriate waste receptacles – toilets are not used to dispose of garbage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3. Students, staff and other building users are encouraged to conserve water through a variety of media and communication strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4. Non-bottled water is readily available. <i>(water fountains, access to water in cafeterias, etc.)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
CLEANING					
1. Automatic dishwashers and washing machines are run only when full.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Outside pathways are cleaned with push brooms instead of water.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
OUTDOOR WATER CONSERVATION					
1. Rain water is collected to water plants/gardens.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Water used outdoors is used wisely. Water during the coolest part of the day and on non-windy days to reduce water loss from evaporation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3. Plants selected for school yard greening are native or drought resistant to reduce or eliminate the need for watering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

SCHOOL WATER AUDIT

Water Conservation Guidelines

MONITORING

1. Water consumption is measured, recorded and communicated to staff and students on a regular basis.
2. Water faucets, toilets and pipes are checked regularly and problems are reported promptly.

FIXTURES & MAINTENANCE

1. Leaks in the water system are repaired promptly.
2. Flow rates are set at the minimum for existing toilets.
3. Older tank style toilets are fitted with a water saving device (water dams or displacement bottles, early closure or dual flush mechanisms).
4. Urinals are waterless or water saving models.
5. Aerators are used on high flow faucets.
6. Only the most water efficient hardware is purchased when replacing parts (self-closing faucets, ULV toilets, low-flow showerheads, etc.).

	Just Beginning	Approaching Implementation	Implemented	Extensively Implemented	Comments or Issues to Report
1. Water consumption is measured, recorded and communicated to staff and students on a regular basis.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Water faucets, toilets and pipes are checked regularly and problems are reported promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1. Leaks in the water system are repaired promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2. Flow rates are set at the minimum for existing toilets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3. Older tank style toilets are fitted with a water saving device (water dams or displacement bottles, early closure or dual flush mechanisms).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4. Urinals are waterless or water saving models.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
5. Aerators are used on high flow faucets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
6. Only the most water efficient hardware is purchased when replacing parts (self-closing faucets, ULV toilets, low-flow showerheads, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Areas of Concern:

Ways to Act:

Who is responsible? When will they act?

WATER AWARENESS RESEARCH PROJECT

Get Started: As a whole class, discuss water and the following questions: Why is water vital to life on Earth? What do we use water for? What is your personal water consumption at home? At school? Have students share their ideas with a partner and record responses.

Explore: The health of our environment, including the health of plants and animals, is deeply tied to the health of our waterways. Ensuring we have access to safe, clean water is an important issue across the province, country, and the world. Divide students into groups of 4-5 and ask them to select a water issues to explore.

Suggested Research Questions:

- When it comes to **bottled water vs. tap water** there are many questions that emerge. Specifically, what are the economic, health, and environmental impacts of bottled water? Who regulates bottled water and how is tap water regulated in Ontario? Why would someone choose to drink bottled water over tap water? What are some strategies to reduce the effects of bottled water on our environmental?
- In Canada, contamination and inadequate **water and sanitation services in First Nations communities** are a real and present threat to human health and the environment. In fact, people living on First Nations reserves are 90 times more likely than other Canadians to lack access to clean running water¹⁷. For example, in Neskantaga, a First Nation community in Northern Ontario, residents have been under a boil water advisory for the past twenty years. Can you imagine a situation like this not being addressed immediately in your city or town? What are the current federal and provincial governments doing to address this ongoing issue?
- **Microplastics** are tiny bits of plastic (generally up to 5 mm in size) that pollute our environment. Microplastics in oceans, lakes, and waterways are becoming an increasing environmental issue. Where do microplastics come from? How are they affecting aquatic ecosystems? What are some steps that humans can take to reduce the amount of microplastics polluting our waterways?

Reflect & Discuss: In groups, students can create short presentations on the topic they researched. As a class, bring your information together and discuss what you learned about water issues that are affecting your school, community, province, country, and world. Students can then reflect on tangible actions they can take as a class to address the issues.

Extensions:

- Create an awareness campaign based on the research project. Find strategies to inform the school community about the topic by creating posters, pamphlets, announcements, and newsletters.
- Create a petition or a letter writing campaign and bring this issue your local MP or MPP

WATER TRIVIA GAME

Source: Adapted from Earth Day Canada EcoKids Lesson: How Important is Water to our Lives? www.ecokids.ca

Get Started: As a whole class, discuss water and the following questions: Why is water vital to life on Earth? What do we use water for? What is your personal water consumption at home? At school? Have students share their ideas with a partner and record responses.

Explore:

1. Divide students into groups of 4-5 to play the *Water Trivia Game*. Each group is given a different noise maker for the answer period.
2. Play the *Water Trivia Game*: A series of questions will be read to the class. Students are to discuss each question as a group and then use their noisemaker to signal that they have the answer. The first group to sound their noisemaker with the correct answer will receive a point. Either the teacher or selected students can read the questions. If students are reading the question, make they are also able to participate in answering the question with their group. Another option is to give a question card to each group, having them spend a few minutes discussing their answer before sharing their response with the class.

Reflect:

After each question, discuss student responses and ask them if anything was surprising. After the game, ask students if there is anything they want to learn more about or explore in greater detail.

(SEE PAGES 23/24 FOR QUESTIONS
AND ANSWERS)



Water Trivia Game Questions

1. **What percentage (%) of the human body is water?**
 - a) 25 - 30%
 - b) 40 - 50%
 - c) 60 - 80%
 - d) 90 - 100%
2. **How much fresh water in the world is accessible for drinking?**
 - a) 0.001%
 - b) 2.5%
 - c) 10%
 - d) 50%
3. **How much of the world's fresh water does Canada have?**
 - a) 10%
 - b) 20%
 - c) 40%
 - d) 60%
4. **How much water does a person need each day to stay healthy?**
 - a) 0 - 0.5 L
 - b) 1 - 2 L
 - c) 3 - 4 L
 - d) 5 - 6 L
5. **How much water does the average person use each day?**
 - a) 0.0 - 5 L
 - b) 5 - 25 L
 - c) 50 - 150 L
 - d) 200 - 800 L
6. **How much water does it take to produce a loaf of bread? (for the whole process from growing the wheat to baking the bread)**
 - a) 2 L
 - b) 10 L
 - c) 100 L
 - d) 600 L
7. **How much water does a five minute shower with a standard showerhead use?**
 - a) 20 L
 - b) 50 L
 - c) 100 L
 - d) 200 L
8. **In one day, how much water does a tap leaking one drop of water per second waste?**
 - a) More than 25 L
 - b) More than 75 L
 - c) More than 120 L
 - d) More than 150 L
9. **What is the single largest water user in the home?**
 - a) Kitchen sink
 - b) Laundry machine
 - c) Bathroom sink
 - d) Toilet
10. **What percentage of water supply is used in the kitchen and as drinking water?**
 - a) 10%
 - b) 22%
 - c) 38%
 - d) 65%
11. **How much water does a traditional washing machine use to wash a large load of clothes?**
 - a) 50 - 120 L
 - b) 130 - 250 L
 - c) 260 - 400 L
 - d) 420 - 800 L
12. **Lawn and garden watering can increase the demand for water by more than how much?**
 - a) 30 %
 - b) 45 %
 - c) 50 %
 - d) 70 %
13. **How much water do you save if you use a bucket of water to clean the car instead of the watering hose?**
 - a) 200 L
 - b) 300 L
 - c) 400 L
 - d) 500 L
14. **How much water does a low - flow showerhead use for a five minute shower?**
 - a) 20 L
 - b) 25 L
 - c) 30 L
 - d) 35 L
15. **How much water does an automated dishwasher use, compared to dishwashing by hand (35 L)?**
 - a) 15 L
 - b) 35 L
 - c) 40 L
 - d) 75 L

ANSWERS ON NEXT PAGE

Answers:

1. **Answer C:** Our bodies are made up of about 70% water. Water makes up about 75% of the brain and 83% of blood.
2. **Answer A:** Although about 2.5 % of the world’s water is fresh water, the majority of that is looked up in glaciers and ice.
3. **Answer B**
4. **Answer B:** We get the water we need through plain water, juices, other drinks and even the food we eat.
5. **Answer D:** Health Canada says that the average North America uses 650 L of water per day.
6. **Answer D**
7. **Answer C**
8. **Answer A**
9. **Answer D:** Repair any toilet tank, bowl or base leaks to reduce water waste. Install a low-flush toilet, which uses 6 L or less per flush), or place a toilet insert or weighted plastic bottle filled with water in the water tank.
10. **Answer A:** Repair leaky faucets and always turn off your taps tightly so they don’t drip. Even a small drip can waste tons of water. You can also use an aerator and a water-flow reducer attachment to reduce water use. While thawing food, hand washing dishes or while washing fruits and veggies use a partially filled sink instead of running the water continuously.
11. **Answer B:** To lower this amount wash full loads and use the shortest cycle, adjust the water level and use cold or warm water instead of hot, and repair any leaks around the washer taps and hoses.
12. **Answer C:** Check outside hoses, faucets and sprinklers for leaks. Even a small drip can waste tons of water.
13. **Answer B:** Use a bucket of water to wash your bike or car, then rinse quickly using a trigger nozzle on your hose to reduce water waste. Wash the car over grass or gravel to prevent any soapy runoff from going directly into the sewers.
14. **Answer D**
15. **Answer C**

REFERENCES

1. Canadian Energy Efficiency Alliance. (n.d.). Resources. Retrieved from Quick Facts: <http://energyefficiency.org/resources/quick-facts/>
2. Citizens Environmental Alliance. (n.d.). Water Quality. Retrieved from Water Quality Facts: www.citizensenvironmentalliance.org/pdf/water_web.pdf
3. Conservation Ontario. (n.d.). What Land Owners Can Do To Protect Water Quality and Quantity. Retrieved from Conservation Ontario Nature Champions: www.conservation-ontario.on.ca/media/ODWSP_FAQS_Landowners_EN_2009_02_27_WEB.pdf
4. UN Water World Water Day. (n.d.). Learn. Retrieved from UN Water World Water Day: www.unwater.org/worldwaterday/learn/en
5. National Geographic. (n.d.). Water Conservation Tips. Retrieved from National Geographic: <http://environment.nationalgeographic.com/environment/freshwater/water-conservation-tips/>
6. National Geographic. (n.d.). Water Conservation Tips. Retrieved from National Geographic: <http://environment.nationalgeographic.com/environment/freshwater/water-conservation-tips/>
7. UN Water World Water Day. (n.d.). Learn. Retrieved from UN Water World Water Day: www.unwater.org/worldwaterday/learn/en/
8. Canadians.org. (n.d.). Five Reasons to Ban Bottled Water. Retrieved from Canadians.org: <http://canadians.org/sites/default/files/publications/5%20reasons%20to%20ban%20bottled%20water.pdf>
9. Canadian Federation of Students. (n.d.): Retrieved from Back the Tap: <http://cfs-fcee.info/take-action/bottle-water-free-communities/the-issues/environmental-problems/>
10. Ban The Bottle. (n.d.). Bottled Water Facts. Retrieved from Ban The Bottle: www.banthebottle.net/bottled-water-facts/
11. Canadian Federation of Students. (n.d.): Retrieved from Back the Tap: <http://cfs-fcee.info/take-action/bottle-water-free-communities/the-issues/environmental-problems/>
12. The Water Project. (n.d) Bottled Water is Wasteful. Retrieved from The Water Project: https://thewaterproject.org/bottled_water_wasteful
13. CBC News, Health. (September 2014) Bottle vs. tap: 7 things to know about drinking water. Retrieved from: www.cbc.ca/news/health/bottle-vs-tap-7-things-to-know-about-drinking-water-1.2774182
14. The Polaris Institute. (n.d) Take the Plunge. Retrieved from: <https://d3n8a8pro7vnm.cloudfront.net/polarisinstitute/pages/99/attachments/original/1419358306/FrequentlyAskedQuestions.pdf?1419358306>
15. Canadian Federation of Students. (n.d.): Retrieved from Back the Tap: <http://cfs-fcee.info/take-action/bottle-water-free-communities/the-issues/environmental-problems/>
16. http://watergovernance.ca/factsheets/pdf/FS_Water_Use.pdf
17. Cleaning up water in First Nations communities: Advice to Prime Minister-designate Justin Trudeau. October 2015. www.davidsuzuki.org/blogs/panther-lounge/2015/10/cleaning-up-water-in-first-nations-communities-advice-to-prime-minister-designat/