

Welcome to the 17th Annual Peterborough Children's Water Festival!









Dear Teachers,

On behalf of our organizing committee, I welcome you to the 17th annual Peterborough Children's Water Festival!

With over 134 lakes, the Peterborough Region has an abundance of fresh water- and a multitude of plants and animals that rely on this lush environment. As a community, we have a responsibility to teach our children the importance of water and how they can care for this life giving entity.

We are a part of a network of over 24 Children's Water Festivals across the province. By working with other Festivals we share ideas and experience to continuously improve the way in which we present educational material to students.

Our organizing committee continues to focus on making every student's visit to the Festival a memorable part of their school's curricular program. The learning stations are designed to be hands-on, stimulating, fun, and further students' understanding of water concepts taught through the school curriculum. I encourage you to visit our website <u>www.pcwf.net</u> which will provide you with additional information about the Festival, and links to other sites related to water education.

There are two new and interesting activity centres this year: Drop in the Bucket and Salty Solutions. We look forward to seeing your school participate in this momentous Peterborough Children's Water Festival.

See you on June 6th and 7th!

Yours truly,

P Skopelianos Patricia Skopelianos Chair, Peterborough Children's Water Festival

This Teacher's Planning Guide is designed to:

- Give you an overview of the Festival and its purpose
- Help you get organized for the Festival
- Suggest ways to prepare your students and volunteer adults in order to maximize fun and learning!
- Outline the connections between the Festival activities and the requirements of the Ontario Curriculum at each grade level
- Provide ideas for further study back at school



The Peterborough Children's Water Festival brings together the expertise of educators, water quality and quantity specialists, community volunteers, conservation groups, industry and government to provide the regions elementary students with the opportunity to discover the importance and diversity of water.

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Learning in Context

Water globally, nationally and provincially

Water covers 75% of the planet, and also makes up about 75% of a person's body weight. Water is essential for all life on Earth. Without it, nothing lives.

Civilization depends on the availability of clean freshwater – for growing food, drinking, washing, traveling and playing. All cultures and faiths around the world recognize the sanctity of water. Throughout history, water has turned mill wheels, carried ships, provided steam and produced electrical power. Today, water continues to be essential to the health of human beings and the natural environment, as well as our economies.

In Ontario, we enjoy what appears to be an abundance of water. The word 'Ontario' is actually from a Haudonasonee (Iroquoian) language and means 'beautiful water' or 'sparkling water'. There are approximately 250 000 lakes in Ontario, and water covers about one sixth of our province. Nearly 17 per cent of Ontario's land area consists of lakes and rivers, many of which form the province's boundaries, like the Great Lakes and the Ottawa River.

Ontario residents and businesses draw 58% of their water supply from lakes and rivers (surface water), and 42% from ground water. Human activities can negatively affect water sources, sometimes with irreversible outcomes. People are beginning to realize that our water supply is becoming contaminated and over utilized. This in turn can endanger the health of people, plants and wildlife. In order to keep water sources clean and plentiful, human behaviour must change.

Some other interesting water facts include:

- Water Consumption usually drops 18-25% after a water meter is installed
- One Litre of oil can contaminate up to 2 million Litres of water
- Many homes lose more water from leaky taps and toilets than they use for cooking and drinking
- A five minute shower with a standard shower head uses 100 L of water, while the same length of shower with a low flow shower head uses only 35 L
- A single lawn sprinkler spraying 19 L per minute uses 50% more water in just one hour than a combination of ten toilet flushes, two five minute showers, two dishwasher loads, and a full load of clothes.

These and other water facts can be found on Environment Canada's Freshwater Website: <u>http://www.ec.gc.ca/eau-water/</u>

Water in the City and County of Peterborough

Maintaining a clean water supply is key to the economic, environmental and human wellbeing in the Peterborough region. Below are characteristics of the Peterborough Region that reinforces the importance of having a community that cares for this valuable resource.

- The Peterborough region has 134 lakes
- The City of Peterborough is located in the Otonabee Region Watershed
- Residents and businesses rely on piped, municipally treated Otonabee River water in urban areas, and ground water in rural areas (for private or communal wells).
- Peterborough contains many of the province's important natural features, as well as habitats for many regionally and provincially significant flora and fauna. On a local, regional and provincial scale, these natural features provide essential ecosystem functions that support the health of the land, air and water.
- During the summer months the Peterborough region is visited by over 30,000 tourists and cottagers, looking to enjoy the regions natural characteristics suitable for outdoor recreation (waterways, forests, caves etc.), festivals and tourist attractions.
- Environmental features in Peterborough are also recognized as a significant resource for recreational and leisure activities. The Trent-Severn Waterway, waterfront parks, conservation areas, and provincial parks offer both passive and active recreational opportunities. Activities such as hiking in Petroglyphs Provincial Park and Warsaw Caves Conservation Area, or fishing in the Otonabee River contribute to the quality of life experienced by Peterborough residents.

Water Festival Objectives and Themes

Two of the primary objectives of this event are to develop personal awareness of the importance of water, and to foster respect for the natural environment. It is hoped that increased individual awareness and respect will contribute to developing a community that is committed to using natural resources wisely.

The Peterborough Children's Water Festival motivates students to become caretakers of water in their classroom and community. By combining handson interactive activities with messages relevant to their daily lives, students 'soak up' knowledge concerning the properties, uses, connections and importance of water. With this knowledge, students become aware of the value of conserving and protecting water.

Activities at the Festival are grouped into five theme areas:

Water Conservation

• Examines using water wisely in our homes, schools and communities.

Water Attitudes

- Introduction to historical uses of water compared with present uses.
- Exploration of common attitudes toward water, and ways to promote an appreciation of water as a natural resource.

Water Technology

- Looking at the role of water in energy production.
- Examine how water is treated, stored and distributed

Water Protection

- Examination of the connections between soil, air, water, plants, people and animals.
- Consideration given to the positive steps we can take to keep water clean.

Water Science

- Introduction to the physical science of surface water and ground water.
- Introduction to the hydrological cycle.
- Exploration of the role of water quality and quantity to aquatic life.

Overall, these themes all convey the message that water is essential to people, to the natural environment, and to the economy – including business, industry and transportation. The Peterborough Children's Water Festival provides hands-on activities, discussions, demonstrations, displays and exhibits that challenge students (and teachers!) to consider the importance of water to human and environmental health, as well as the role of water in economic development.

Interaction with industry professionals, water experts and enthusiastic educators highlight the environmental education messages of the Festival.

Getting Ready for the Festival

Please consider the following suggestions when preparing for the Festival:

- **Read through this planning guide** it will give you a good idea of what to expect, and suggest ways to incorporate this visit into your class's studies.
- Divide your class into groups of **five**. <u>Please ensure the groups are no</u> <u>larger than five students for supervision and safety reasons</u>.
- Assign one adult supervisor to each group of **five** students. Children requiring medical attention (administering medication, epilepsy, special physical needs, etc.) should be in a group supervised by the teacher, or by their parent/guardian.
- Discuss the Festival and the role of adult supervisors with your volunteers/helpers.
- Encourage your adult supervisors to read the **Chaperone Information Guide** (available at www.pcwf.net).
- Media are often present at the Festival. Any student who is not to be photographed or interviewed should be pointed out to the adult supervisor. Proper name spellings of students able to be photographed or interviewed should also be available.
- Copy and distribute copies of the **Festival Itinerary template** (see page 15 of this guide) to all adult supervisors.
- Read the description for each activity. This will help in planning your day.
- Familiarize yourself with the **site map** and plan ahead by suggesting activities and exhibits that best suit the learning objectives of your program. The Festival Itinerary Template is for you to list preferred activities for each group of students. This will assist your adult supervisors in identifying those activities that you are interested in having your students visit. Please let the supervisors know that children learn best when it is something of interest, so if they really would like to visit an activity not listed, try to work it in. Give your parent volunteers a list of additional activities beyond their required list in case they have time to visit more.
- Start each group at a different activity to avoid congestion and maximize learning time.
- Encourage everyone to bring **`litterless lunches and snacks'**, including a refillable water bottle!
- For easier identification, prepare a sign with your school's name on it which you can ask the school bus driver to display in the front window of the bus when they return to pick you up at the Festival.
- Please discourage students from getting too close to the riverbank.
- Please discourage students from feeding the waterfowl that may be found along the riverbank. They have plenty of natural foods available to them.

An adult supervisor must accompany students at all times!

By planning ahead and preparing all your adult supervisors for your visit, everyone can take an active role in this valuable learning experience.

On the Day of the Festival

- The Festival is held **rain or shine**. Please ensure that everyone is prepared and dressed for the weather. The site may be wet in places, so waterproof footwear is a good idea.
- Upon your arrival at the Riverview Park and Zoo, please have all students remain on the bus until you receive instructions to unload. At registration teacher will collect their identifying wrist band please keep on for duration of day.
- Check that everyone knows when and where to meet the bus to go back to the school.
- Ensure each adult supervisor has a Festival Site Map and their group's itinerary. We ask each group to start their day at a different activity to avoid congestion.
- The Peterborough Children's Water Festival puts safety first. If any of your students or adult supervisors have medical conditions (diabetes, epilepsy, severe allergies, etc.) please report to the First Aid station, located in the registration tent, and submit a written description of the person and the condition(s) before beginning your Festival visit.
- You may stop for lunch and snacks at times that are convenient for you. Activities will close for the volunteer lunch between 11:30- 12:00.
- You can identify Festival volunteers by their bright yellow pinnies or green t-shirts with the Peterborough Children's Festival logo on them. Festival Organizers will be wearing green t-shirts with the Peterborough Children's Festival logo on them. First Aid personnel will be wearing red pinnies. Staff and volunteers will be located throughout the site. Should questions or problems arise, do not hesitate to approach them. They are here to help, and are happy to do so.
- Remind your students about the importance of being careful around the riverbanks. The current in the Otonabee River can be strong, especially when water levels are high.
- A lost and found will be set up at the registration tent. Please bring any found items there, and check in at the tent before leaving the Festival to make sure your class hasn't left anything behind. Remaining items will be left at the Riverview Park and Zoo Lost and Found.
- Activity Centres will close at 2 p.m., at which time, entertainment will be provided for the children while you wait for your bus at your classes designated waiting area. This entertainment period will run until 2:30 p.m. when all classes should be boarded on their buses and on their way back to school.

TIMELINE FOR THE DAY:

9:00-9:30 - Buses with students arrive 9:30-11:30 - Students visit activity centres 11:30-12:00 - Activity centres close for lunch 12:00-2:00 - Students visit activity centres 2:00-2:30 - Buses load and depart

Thematic Overview of Activity Centres

This section provides you with an alphabetical list of all activities along with a description of the activity and a general theme. Also included is a rating of the physical interaction each activity involves for the students.

The activity levels are rated from 1 to 3:

1- *A* passive activity where a presentation or talk is given to students. Students will be engaged through questions and discussion

2- This activity will provide a hands-on activity for students to touch materials and/or be a part of the activity

3- This activity will engage students through active play (e.g. running etc.)

ACTIVITY	DESCRIPTION THEME		DESCRIPTION THEME		ACTIVITY LEVEL
2 TIMES A DAY	Students will have the opportunity to examine how much water they use while brushing their teeth and compare water consumption using a variety of techniques. How much water can you save twice a day?	Water Conservation	2		
THREE Ps	Students will learn about the sewage system and why it is important to only flush the three P's- pee, poop and (toilet) paper down the toilet. Unfortunately, many people flush lots of other things down the toilet. Flushing these items down the toilet causes home pipes to clog, wastes water, can cause damage to our sewer system and can contaminate our rivers and lakes.	Water Technology and Water Protection	2		
D.O. THE LIMBO	To understand how dissolved oxygen levels impact aquatic life, students consider the metaphor of the Limbo Bar. How many will survive when levels are low? How many more are successful when levels are high? Start the music and lets find out!	Water Science	3		
DOING THE LAUNDRY	Why was Monday in pioneer days Laundry Day? Students will try doing laundry using old methods and equipment and compare water consumption to the present day.	Water Attitudes	2		
DOWN THE SEWER	An activity to introduce safe household hazardous waste (HHW) disposal practices. HHW items (cleaners, oils, poisons etc.) and pictures or models of a garbage can, HHW Depot and sink. Participants decide where the HHW items should go when people are finished with them.	Water Protection	2		
DROP IN THE BUCKET	Students will discuss what physical (living and non-living) items make up a community. With the community in mind they will consider water related issues, solutions and potential action items.	Water Attitudes	2		
GO WITH THE FLOW	Students simulate daily household routines and evaluate the impacts of their everyday actions on the environment. They investigate the rate of water flow, discover simple home water saving technologies and	Water Conservation	2		

	hypothesize about the impacts these technologies have on the environment.		
THE GREAT WATER MIGRATION	Created by GreenUP's Ecology Park this interactive water display introduces students to issues around shoreline erosion, water quality and nature's own cleaning methods.	Water Protection	2
GREAT WATER RACEStudents can manipulate models to discover what controls the direction and speed of water. Students learn the concepts of slope and angle.		Water Science	2
HEALTHY SHORELINES = HEALTHY RIVERS	Students will learn about the importance of streams in urban areas and the importance of plants along a stream and the role they play in providing habitat.	Water Science and Water Protection	3
INSPECTOR H ² 0	Students become detectives with the task of finding some of the most common leaks in a home's water system by using a water meter.	Water Technology and Water Conservation	2
LATHER UP!	How much water do we use for a five- minute shower? Students compare early 19 th century bathing methods to modern methods. Even modern methods are not the same when it comes to water consumption. What can we do to save water when having a shower? Students enter a model shower to see the difference when a simple technological water-saving device is employed.	Water Conservation	2
MARINE SAFETY	The OPP Marine Unit is responsible for enforcement of Boating Regulations on non- federal waterways, and for search and rescue. Officers will discuss boating safety and regulations with students.	Water Attitudes	1
NO WATER OFF A DUCKS BACK	Through this activity students will learn about the hazards of commercial oil spills and experience how hard it is to clean oil from birds. Additionally, students will discuss local problems from oil that enters waterways from household sources.	Water Protection	2
OFF I GO	Children in some parts of the world have to walk for hours to fetch water for the family's daily use. In this team relay, students race through an obstacle course with a bucket of water to experience what it is like for children on their water fetching journeys.	Water Attitudes	3
OSPREY SURVIVOR	In this activity students pretend to be osprey collecting fish to feed their baby osprey. Students will learn about osprey and how they catch their food for survival. This activity also introduces the concept of food chains and how contaminated fish can affect animals that eat them.	Water Science	3

AMAZING	This activity will introduce students to the unique adaptations of the North American River Otter. Through costumes children will compare their own body parts in comparison with the adaptations that otters have for living in water.	Water Protection	2
PIONEER WATER RACE	Students will examine the importance of water to the survival and success of pioneers. Taking a trip back in time, students can investigate how farm buildings were located near a water source, how pioneers obtained the water needed for animals and the family and how much water was required. Discover hand power and the role of the child in pioneer families. Help us fetch a bucket!	Water Attitudes	3
POWER OF WATER	Through a hands-on model students will learn about how the force of water is used to generate clean, reliable and renewable energy.	Water Technology	1
ROLLING THROUGHDonning Velcro Vests, students preter be water droplets rolling through the watershed. See what water picks up a travels. Work backwards as a detective find out where the different materials be found in a real watershed.		Water Protection	3
ROYAL FLUSH	How does a toilet work? Students examine	Water	2
	how the mechanisms in an ordinary household device works and the difference between water-saver toilets and regular- flow toilets. How does the required amount of water come back every time?	Conservation	L
SALTY SOLUTIONS	how the mechanisms in an ordinary household device works and the difference between water-saver toilets and regular- flow toilets. How does the required amount of water come back every time? Icy roads can be dangerous, salting helps to protect vehicles on the road. However, salt for de-icing can be detrimental to the environment. Through understanding how salt functions and it's movement through the water system students will learn about it's use as well as alternative solutions for ice management.	Conservation Water Protection	3
SALTY SOLUTIONS SCAVENGER HUNT	how the mechanisms in an ordinary household device works and the difference between water-saver toilets and regular- flow toilets. How does the required amount of water come back every time? Icy roads can be dangerous, salting helps to protect vehicles on the road. However, salt for de-icing can be detrimental to the environment. Through understanding how salt functions and it's movement through the water system students will learn about it's use as well as alternative solutions for ice management. By finding and answering hidden water related questions students will solidify learning and after completing all the questions can receive a Peterborough Children's Water Festival wristband	Conservation Water Protection All Themes	3
SALTY SOLUTIONS SCAVENGER HUNT SEPTIC SIGHTS!	how the mechanisms in an ordinary household device works and the difference between water-saver toilets and regular- flow toilets. How does the required amount of water come back every time? Icy roads can be dangerous, salting helps to protect vehicles on the road. However, salt for de-icing can be detrimental to the environment. Through understanding how salt functions and it's movement through the water system students will learn about it's use as well as alternative solutions for ice management. By finding and answering hidden water related questions students will solidify learning and after completing all the questions can receive a Peterborough Children's Water Festival wristband Watch water trickle through the sewage pipes into the septic bed in a rural waste water scenario. Where do the wastewater and solid wastes go if one is not connected to the municipal wastewater system?	Conservation Water Protection All Themes Water Protection	3

	rain) may change the acidity of lakes and how changes in acidity impact lake environments.		
SPLASHY FUED Students will be able to put their water knowledge to the test in this game show styled learning opportunity.		Each theme will be highlighted	2
SPONGE BOG FROG HOP	Using an aquarium to represent a water habitat it is illustrated how pollutants can harm frogs as they absorb pollutants through their skin. It is designed to encourage students to help keep streams and ponds free of pollution and teaches children how to identify potential pollutants that should not be put into the water systems.	Water Protection	2
STAY CLEAR, STAY SAFE!	At this interactive centre OPG uses a working model of a hydroelectric generating station to teach children about the dangers of fast flowing and ever-changing water conditions around hydroelectric generating stations and dams.	Water Technology	2
STEPPING STONE	Our watersheds are shared by many other creatures, students will act as hatchlings and get a immersive understanding of the risks to aquatic life. Students will gain an understanding of what is a Species-at-Risk, and human's influence on different stages of a turtles life.	Water Protection	3
TAPPING THE SOURCE	Created by the Peterborough Utility Commission, this Activity Centre is a model of a water distribution system similar to that of Peterborough. Water is drawn from the Otonabee River through a miniature water network, and pumped through various components of the system.	Water Technology	1
WATER IN YOU!	Students will learn about the importance of water for our bodies. We need water to live, and it is important to drink water when we are thirsty.	Water Attitudes	2
WATER TO PLASTIC, PLASTIC TO WATER	This activity centre provides students with an understanding of plastic in our waterways, its impacts on wildlife, and how our daily choices can influence the environment. Pretending to be aquatic animals, students will race to eat algae – but there is a catch, as microplastics can look a lot like food.	Water Protection	3
WATERSHED ED	A three dimensional working mobile of the Otonabee River that will look at the history of the river and watch it as it gets more polluted. Then the children have to figure out how to clean it up!	Water Protection	1
WEST NILE	Students learn about West Nile Virus and what they can do to prevent the spread of this disease.	Water Conservation	1

WILD RICE DANCE OFF!	Students will be introduced to the life cycle of Canadian Wild Rice. Students will then be given the opportunity to pull on a pair of moccasins and 'dance' on rice to remove the chaff so it can be eaten.	Water Attitudes	3
WONDERS OF WATER	Through a hands-on model, students will put their problem solving to the test, learning the science of cleaning and reusing dirty water while building a water purification experiment. This activity is one of many hands on water education activities being brought into classrooms through GreenUp's Wonder of Waters program	Water Technology and Water Protection	2

Festival Itinerary

Name of Adult Supervisor: _____

Start at the following activity centre:

Activity Centre Name	Site Map Location

After the first activity, please try to visit the following activities:

Activity Centre Name	Site Map Location

Lunch will take place from 11:30 to Noon. At this time all activity centres will be shut down.

Students in your group are:

2.	
3.	
4.	
5.	

GRADE 2 ACTIVI	TIES STRAND
2 TIMES A DAY	 Earth and Space Systems (Air and Water in the Environment) Mathematics (Measurement)
3Ps	Earth and Space Systems (Air and Water in the Environment
D.O. THE LIMBO	 Understanding Earth and Space Systems (Air and Water) Life Systems (Growth and Changes in Animals)
DOING THE LAUN	IDRY • Earth and Space Systems (Air and Water in the Environment)
DOWN THE SEWI	 ER Life Systems (Growth and Changes in Animals) Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment)
DROP IN THE BU	 CKET Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment)
GO WITH THE FL	 Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment) Mathematics (Measurement)
GREAT WATER MIGRATION	• Science and Technology – Understanding Life Systems
GREAT WATER R	ACE • Earth and Space Systems (Air and Water in the Environment)
HEALTHY SHORELINES= HEALTHY RIVERS	Science and Technology (Understanding Life Systems)
LATHER UP!	 Earth and Space Systems (Air and Water in the Environment) Mathematics (Measurement)
MARINE SAFETY	Healthy Living (Personal Safety and Injury Prevention)
NO WATER OFF A DUCKS BACK	 Earth and Space Systems (Air and Water in the Environment) Matter and Energy (Properties of Liquids and Solids) Life Systems (Growth and Changes in Animals) Healthy Living (Personal Safety and Injury Prevention)
OFF I GO	 Earth and Space Systems (Air and Water in the Environment) Physical Education and Health (Active Participation) Healthy Living (Personal Safety and Injury Prevention)
OSPREY SURVIVO	• Life Systems (Growth and Changes in Animals)
OTTERLY AMAZIN	IG • Life Systems (Growth and Changes in Animals)
ROLLING THROU THE SHED	 GH Life Systems (Growth and Changes in Animals) Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment)
ROYAL FLUSH	Earth and Space Systems (Air and Water in the Environment

SALTY SOLUTIC	 NS Understanding Matter and Energy (Properties of Liquids and Solids) Understanding Earth and Space Systems (Air and Water in the Environment)
SEPTIC SIGHTS	 Life Systems (Growth and Changes in Animals) Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment) Canada and World Connections (Communities around the World)
SOMETHING FIS GOING ON	 Matter and Energy (Properties of Liquids and Solids) Earth and Space Systems (Air and Water in the Environment) Growth and Changes in Animals (Science)
SPLASHY FUED	 English Language - Oral & Visual Communication Understanding Earth and Space Systems (Air and Water) Life Systems (Growth and Changes in Animals) Matter and Energy (Properties of Liquids and Solids) Healthy Living (Personal Safety and Injury Prevention)
SPONGE BOG F	 ROG Life Systems (Growth and Changes in Animals) Earth and Space Systems (Air and Water in the Environment)
STEPPING STOP	 Life Systems (Growth and Changes in Animals) Earth and Space Systems (Air and Water in the Environment)
STAY CLEAR, S SAFE	 FAY Earth and Space Systems (Air and Water in the Environment) Matter and Energy (Properties of Liquids and Solids) Healthy Living (Personal Safety and Injury Prevention)
WATERSHED ED	• Science and Technology – Understanding Life Systems
WEST NILE LOC	 KOUT Earth and Space Systems (Air and Water in the Environment) Canada and World Connections (Communities around the World)
WILD RICE DAN OFF!	CE • Physical Education & Health - Active Participation
WONDERS OF V	 IATER Earth and Space Systems – Air and Water in the Environemt Understanding Matter and Energy – Properites of Liquids and Solids

GRADE 3 ACTIVITIES	STRAND
2 TIMES A DAY	• Energy and Control (Forces & Movement)
3Ps	• Energy and Control (Forces & Movement)
DOING THE LAUNDRY	• Heritage and Citizenship (Pioneer Life)
DROP IN A BUCKET	• Inquiry: The Impact of Land and Resource Use: Cause and Consequence; Perspective (Social Studies)
GO WITH THE FLOW	• Energy and Control (Forces & Movement)
GREAT WATER MIGRATION	Science and Technology – Understanding Life Systems
GREAT WATER RACE	 Earth and Space Systems (Soils in the Environment) Mathematics (Geometry and Spatial Sense - angles)
HEALTHY SHORELINES= HEALTHY RIVERS	 Life Systems (Growth and Changes in Plants) Healthy Living (Healthy Eating) Healthy Living (Personal Safety and Injury Prevention) Science and Technology (Understanding Life Systems) Social Studies (Urban and Rural Communities)
LATHER UP!	 Energy and Control (Forces & Movement) Heritage and Citizenship (Pioneer Life)
MARINE SAFETY	Healthy Living (Personal Safety and Injury Prevention)
NO WATER OFF A DUCKS BACK	 Earth and Space Systems (Soils in the Environment) Life Systems (Growth and Changes in Plants) Healthy Living (Personal Safety and Injury Prevention)
OFF I GO	 Physical Education and Health (Active Participation) Healthy Living (Personal Safety and Injury Prevention) Healthy Living (Healthy Eating)
PIONEER WATER RACE	Heritage and Citizenship (Pioneer Life)
ROYAL FLUSH	• Energy and Control (Forces & Movement)
SALTY SOLUTIONS	• Understanding Growth Systems (Soils in the Environment)
SEPTIC SIGHTS!	 Energy and Control (Forces & Movement) Earth and Space Systems (Soils in the Environment)
SOMETHING FISHY IS GOIN'ON	• Life Systems (Growth and Changes in Plants)
SPLASHY FUED	 Life Systems (Growth and Changes in Plants) Healthy Living (Healthy Eating) Healthy Living (Personal Safety and Injury Prevention) Science and Technology (Understanding Life Systems) Social Studies (Urban and Rural Communities) Earth and Space Systems (Air and Water in the Environment)
SPONGE BOG FROG	• Life Systems (Growth and Changes in Plants)
STAY CLEAR, STAY SAFE	• Healthy Living (Personal Safety and Injury Prevention)

STEPPING STONE	• Life Systems (Growth and Changes in Plants)	
WATERSHED ED	 Science and Technology – Understanding Life Systems Early Settlements in Upper Canada 	
WEST NILE LOOKOUT	 Earth and Space Systems (Air and Water in the Environment) Canada and World Connections (Communities around the World 	
WILD RICE DANCE OFF!	 Physical Education & Health - Active Participation Science and Technology - Understanding Life Systems 	
WONDERS OF WATER	 Understanding Earth and Space Systems – Soils in the Environment Understanding Matter and Energy – Forces Causing Movement 	

GRADE 4 ACTIVITIES	STRAND
2 TIMES A DAY	• Understanding Life Systems (Habitats and Communities)
D.O. THE LIMBO	Life Systems (Habitats and Communities)Healthy Living (Healthy Eating)
DOWN THE SEWER	Life Systems (Habitats & Communities)
DROP IN A BUCKET	 People and Environments: Political and Physical Regions of Canada
GO WITH THE FLOW	 Life Systems (Habitats and Communities) Social Studies (Heritage and Citizenship)
GREAT WATER MIGRATION	Science and Technology – Understanding Life Systems
GREAT WATER RACE	Measurement (Capacity, Mass & Volume)
LATHER UP!	 Earth and Space Systems (Rocks and Minerals) Life Systems (Habitats and Communities) Mathematics (Geometry and Spatial Sense - angles)
MARINE SAFETY	 Earth and Space Systems (Rocks and Minerals) Life Systems (Habitats and Communities)
NO WATER OFF A DUCK'S BACK	Measurement (Capacity, Mass & Volume)
OFF I GO	Food Choices- Healthy Living
OSPREY SURVIVOR	 Life Systems (Habitats and Communities) Physical Education and Health (Active Participation) Healthy Living (Healthy Eating)
OTTERLY AMAZING	Healthy Living (Personal Safety and Injury Prevention)
PIONEER WATER RACE	Life Systems (Habitats and Communities)
POWER OF WATER	Science and Technology
HEALTHY SHORELINES= HEALTHY RIVERS	Life Systems (Habitats and Communities)
ROLLING THROUGH THE SHED	• Fundamental Movement Skills (Locomotion & Travelling)
SALTY SOLUTIONS	 Understanding Life Systems (Habitats and Communities) Understanding Earth and Space Systems (Rocks and Minerals)
SEPTIC SIGHTS!	• Science and Technology (Understanding Life Systems)
SOMETHING FISHY IS GOING ON	Life Systems (Habitats & Communities)
SPLASHY FUED	 Understanding Life Systems (Habitats and Communities) Measurement (Capacity, Mass & Volume) Earth & Space Systems (Rocks, Minerals & Erosion) Healthy Living (Healthy Eating)
SPONGE BOG FROG	• Earth & Space Systems (Rocks, Minerals & Erosion)
STAY CLEAR STAY SAFE	Habitats and CommunitiesRocks and Minerals
STEPPING STONE	Life Systems (Habitats and Communities)

WATERSHED ED	 Life Systems (Habitats and Communities) Healthy Living (Personal Safety and Injury Prevention)
WEST NILE LOOKOUT	Measurement (Capacity, Mass & Volume)
WILD RICE DANCE OFF!	Life Systems (Habitats & Communities)
WONDERS OF WATER	 Understanding Earth and Space Systems – Rocks and Minerals

GRADE 5 ACTIVITIES	STRAND
2 TIMES A DAY	Measurement (Capacity, Mass & Volume)
3Ps	• Energy and Control (Conservation of Energy)
DROP IN A BUCKET	People and Environments: The Role of Government and Responsible Citizenship
GO WITH THE FLOW	Earth and Space Systems (Conservation of Energy and Resources)
GREAT WATER MIGRATION	Science and Technology – Understanding Life Systems
GREAT WATER RACE	 Earth and Space Systems (Conservation of Energy and Resources) Mathematics (Geometry and Spatial Sense - angles)
HEALTHY SHORELINES= HEALTHY RIVERS	Science and Technology (Understanding Life Systems)
LATHER UP!	• Energy and Control (Conservation of Energy)
NO WATER OFF A DUCK'S BACK	 Earth and Space Systems (Conservation of Energy and Resources) Life Systems (Human Organ Systems)
OFF I GO	 Earth and Space Systems (Conservation of Energy and Resources) Physical Education and Health (Active Participation) Healthy Living (Healthy Eating)
OTTERLY AMAZING	Life Systems (Human Organ Systems)
ROYAL FLUSH	• Energy and Control (Conservation of Energy)
POWER OF WATER	Earth and Space Systems (Conservation of Energy and Resources)
SALTY SOLUTIONS	 Understanding Matter and Energy (Properties and Changes in Matter) Understanding Earth and Space Systems (Conservation of Energy and Resources)
SPLASHY FUED	 Understanding Matter and Energy (Properties of and Changes in Matter) Earth and Space Systems (Conservation of Energy and Resources) Healthy Living (Personal Safety and Injury Prevention)
STAY CLEAR, STAY SAFE	 Earth and Space Systems (Conservation of Energy and Resources) Healthy Living (Personal Safety and Injury Prevention)
STEPPING STONE	Matter and Energy – Properties of and Changes in Matter
WATERSHED ED	• Science and Technology – Understanding Life Systems

WEST NILE LOOKOUT	Life Systems (Human Organ Systems)
WILD RICE DANCE OFF	 Physical Education & Health - Active Participation Science and Technology – Understanding Life Systems
WONDERS OF WATER	 Understanding Matter and Energy – Properties of and Changes in Matter Understanding Earth and Space Systems – Conservation of Energy and Resources

Expanding the Festival: Planning Lessons around the Festival

We hope that the Festival will be a fun and educational day of activities for your students. The day can be a "stand-alone" experience for your class, or it can be the focal point for a variety of related lessons and classroom activities before and/or after Festival Day.

Festival Follow-Up Activities

In this section we offer suggestions for assessing how much your students 'absorbed' during the Festival, and include some suggestions on how you might expand the Festival experience into your classroom program.

The Curriculum Reference section matches the activities at Festival Day with sections of the Curriculum.

In general, curriculum most directly involved with this event is:

- Grade 2: English Language Oral & Visual Communication Mathematics - Measurement Physical Education & Health - Active Participation Science and Technology - Matter and Energy Science and Technology - Earth and Space Systems Social Studies - Features of Communities Around the World Physical Education & Health - Fundamental Movement Skills Physical Education & Health - Active Participation
- Grade 3: English Language Oral & Visual Communication Mathematics - Measurement Science and Technology – Understanding Life Systems Science and Technology - Matter and Energy Science and Technology - Earth and Space Systems Social Studies – Early Settlements in Upper Canada Social Studies – Urban and Rural Communities Physical Education & Health - Fundamental Movement Skills Physical Education & Health - Active Participation
- Grade 4: English Language Oral & Visual Communication Mathematics - Measurement Science and Technology – Understanding Life Systems Science and Technology - Matter and Energy Science and Technology - Earth and Space Systems Social Studies – Canada's Provinces, Territories and Regions Physical Education & Health - Fundamental Movement Skills Physical Education & Health - Active Participation
- Grade 5: English Language Oral & Visual Communication Mathematics - Measurement Science and Technology - Understanding Life Systems Science and Technology - Matter and Energy Science and Technology - Earth and Space Systems Physical Education & Health - Fundamental Movement Skills Physical Education & Health - Active Participation

The Learning Expectations description in the Festival Activities and the Curriculum section of this guide suggests ways to have students show that they know the various concepts involved in the activities. Each grade level and class will have different methods of providing students with an opportunity to demonstrate their knowledge. It may help to discuss many of the ideas with the class before going to the Festival, and make note of the knowledge/skill levels at that time. Then the follow-up work can focus on assessing the change in knowledge and values after the Festival Day.

Follow-up activities might involve:

- allowing each group of students time to prepare and present a report to the class on what they saw, did and learned on Festival Day. If groups of five are unwieldy for such an assignment, they might be split up and each part of the group given a specific part of the day to present.
- as you move around the Festival, develop some questions about the Activity Centres your students are visiting, and present them to the students back at school to see what they have retained. The questions could be delivered orally to the class in discussion, or as a quiz or True/False list.
- using some of the resources shown in this Guide, prepare further activities that students can do that require them to go back to information and values learned at the Festival.
- assign individuals, or preferably pairs or groups, to prepare reports that they can present to classes that were not at the Festival. Ask the teacher and students of that class to tell you how familiar your students were with the water material they were presenting. Having students prepare skits, plays or puppet shows with a "water" theme can also do this.
- choose some "big ideas" from the festival and have students create posters or magazinestyle advertisements to put up around the school.

Please note-

We love to see what your students are learning at the Festival please consider sharing assignments or activities that you do with your class with us! Please contact the Festival Coordinator (<u>info@pcwf.net</u> or 705-745-3238 X.208)

Activities for Before and After the Festival

The Festival can be a "stand-alone" event, or it can be the focal point for a variety of related lessons and classroom activities before and/or after Festival Day. To expand the event into a larger unit involves more planning and preparation, and requires you to either start earlier and use the Festival as the culmination of a series of lessons and activities, or to use the Festival as the starting point for a week or two of further review and study. Either method suggests that the curriculum focus for your grade level be developed into a study-series with the Festival as a key focus. This might be work on Pioneer Life, Wildlife Habitats, Urban Water Systems, Conservation and/or Pollution Studies, Human Body Systems and Need for Water, the Chemistry and Physics of Water – all depending on the content strands your grade is responsible for.

Other subjects can easily be included in the program; Language skills involving critical reading, writing descriptive narrative material, creating stories or scripts, developing arguments - again depending on your grade level and the curriculum objectives – are natural extensions to the water theme and the Festival activities; Mathematics skills involving measurement of speed, volume, temperature, time, and problems involving water scenarios can be practiced or taught in the classroom or in the schoolyard; Art and Drama offer many interesting ways to express and record information and values – some activities were suggested in the Assessment section above.

The resources listed at the back of this guide contain many lesson plans and further suggestions on how to involve your class further with the Water theme.

Ideas to get you going:

- Invite a local water expert from the community to talk to your class. For older grades, have the students prepare and interview the guest.
- Have students prepare a Water Cycle chart and explain the terms evaporation, condensation, ground water, precipitation, etc.
- Use a video camera to have groups of students organize a video-team and prepare a video about some aspect of the water topic.
- Take an erosion hike in a local park or conservation area and spot examples of water damage natural or man-made.
- Take a map of the area and sketch out the watershed nearby.
- Take a poll of materials that enter the water treatment system from students' homes or the storm sewer system from the yards in students' neighborhoods.
- Study water legends and stories from Indigenous cultures.
- Have the class develop a resolution to save water and have it signed by the Principal and announced to the school community.
- Post posters and displays throughout the school with tips on how to conserve water.
- Have students study the source of their water supply. Investigate any possible sources of contaminants to the water.
- Choose an animal, describe its habitat and give examples of how it uses water.
- Study the habitat and life cycles of native aquatic species.

Resources for Teachers

Books

Available at the Peterborough Public Library

The Amazing Water Book: Deborah Seed: Kids Can Press. ISBN 1550740032

Earthcycles and Ecosystems. Beth Savan. Toronto: Kids Can Press. ISBN 155074013X

The Jumbo Book of Science, 136 of the Best Experiments: The Ontario Science Centre. ISBN 1550741977

Scienceworks: An Ontario Science Centre Book of Experiments: Kids Can Press. ISBN (bound) 0919964818 (paperback) 0919964613

A Drop of Water: A Book of Science and Wonder. Walter Wick. Scholastic Press. ISBN 0590221973

Videos & Periodicals

Available at Peterborough Public Library and Online

Journey of the Blob.

A boy makes a decision about how to dispose of a green glob he has concocted. What will happen if he dumps it into a stream? Where does water come from and where does it go? This film illustrates the water cycle and raises many questions about environmental responsibility and the consequences of our decisions.

https://www.nfb.ca/film/journey_of_the_blob/

Paddle to the Sea.

Based on Holling C. Holling's book of the same name, Paddle to the Sea is Bill Mason's film adaptation of the classic tale of an Indigenous boy who sets out to carve a man and a canoe. Calling the man "Paddle to the Sea," he sets his carving down on a frozen stream to await spring's arrival. The film follows the adventures that befall the canoe on its long odyssey from Lake Superior to the sea.

https://www.nfb.ca/film/paddle_to_the_sea/

What is Acid Rain?

What is acid rain? What are its causes and effects? Learn about the role of fossil fuels and pollution, where acid rain occurs, and solutions to reducing the amount of sulfuric and nitric acids in the atmosphere.

https://www.youtube.com/watch?v=1PDjVDIrFec

Publications available from Environment Canada

Education levels are specified for each publication (primary, intermediate, secondary) These can be obtained free of charge using the order form on their website, <u>http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=24F409D1-1</u>

Threats to water availability in Canada. The Canadian government addresses water concerns.

Linking water science to policy. Workshop series final report. Canada's National Water Research Institute organized a variety of workshops on water quality.

Did you know?...Freshwater facts for Canada and the world. Includes 150 frequently asked freshwater facts.

*Every Drop Counts: A Speaker's Kit On Water Cons*ervation and energy efficiency. Downloadable off the website. The kit consists of a PowerPoint presentation and support materials.

Resource Kit: Kids WaterFest at the museum of Industry.On the site as a PDF file. Complete kit is 773 KB. Educator's notes and student activities designed to provide an overview of the importance of water.

A Premier on Fresh Water: Question and Answers. Answers a wide range of questions on different aspects of water, its physical characteristics, availability both above and below ground, its uses, and how its shared and managed.

Let's Not Take Water For Granted. Available on the site as PDF files. Teaching suggestions, reading materials and learning activities to help teachers of grade 5.

Water and Canada: Preserving a Legacy for People and the Environment. Available on the site as PDF files. Includes information about water sustainability and development, as well as sustainability, quality and use.

Water Fact Sheets:

A collection of fact sheets in the Freshwater Series. Some are out of print but can be viewed on the website.

- A-1: Water Nature's Magician
- A-2: Water Here, There and Everywhere
- A-3: Clean Water Life Depends On It
- A-4: Water Works!
- A-5: Groundwater Nature's Hidden Treasure
- A-6: Water Conservation: Every Drop Counts
- A-7: Water, Art and the Canadian Identity At the Water's Edge
- A-8: Water the Transporter
- A-9: Water Vulnerable to Climate Change

Available for purchase from the American Water Works Association

 6666 West Quincy Ave., Denver, Colorado 80235, 1 800 926 7337, Fax: 303 347 0804. There is a charge for most of their publications. Contact AWWA for information and current prices. Their website can be found at: <u>http://www.awwa.org</u>

Bill Stuffers

It's a Natural,

Pamphlet filled with information about how to get a water conserving landscape.

H₂0 Makes Everything Go!

Pamphlet that quizzes users with 9 questions about water and it's many uses.

25 Things you can do to Prevent Water Waste

9 ways in the bathroom, 6 ways in the kitchen and laundry room and 10 ways outside to prevent water waste

Five Basic ways to Conserve Water.

Information on 5 easy ways to save water

- A Consumers Guide to Water Conservation: The inside story Learn how to check for leaks, conserve water in the shower and reduce the amount flushed
- A Consumers Guide to Water Conservation: The outside story 8 tips for conserving water outside

Get your Hands Dirty

Describes soil textures, 7 types of organic material.

How does your Garden Grow?

Offers alternatives to reduce the amount of water needed for your garden.

Lawn Watering Tips

Offers tips on how much and when to water your lawn to maintain lawn.

Caution! Your hose may Be Hazardous to your Health!

Describes how to prevent backflow of water to keep your family safe from fertilizers and weed killers.

Good Soil For Effective Watering.

Learn about various types of soil and how to maximize its properties for optimum water use and long-lasting lawns and gardens.

Preventing Floods and Leaks in your Home.

Learn how to look for water leaks

Youth Education

Splash! Activity Book.

Colouring book with water related word and number games

Water and Environment Website Links for Kids & Teachers

Site and Description	Internet Address
Freshwater Website – Environment Canada	
Contains information about the nature of water	http://www.co.co.co/water/index/htm
and management (Site has a good teacher's	http://www.ec.gc.ca/water/index.htm
corner and a large list of publications.	
Great Lakes Information Network	
Information about life in and around the Great	http://www.great-lakes.pet/
Lakes. Teacher resources provide quizzes, mini	http://www.great-lakes.net/
lessons on Great Lakes topics, U.S. and Canadian	http://www.great lakes.het/teach/
partnership.	
Canadian Water Resources Association	
For individuals and organizations interested in the	http://www.cwra.org
management of Canada's water resources	
Canadian Climate Data, Environment Canada	http://www.ecoaction.gc.ca
Historical climate data from across Canada.	······
Adopt-A-Pond (Toronto Zoo)	
A wetland-conservation program allows people	http://www.torontozoo.com/adoptapond/
and groups to adopt a pond.	
Otonabee Region Conservation Authority	http://www.otonabee.com
Peterborough Utilities Services	http://www.peterboroughutilties.ca/home .htm
Waterfront Regeneration Trust	
A southern Ontario ENGO that organizes projects	http://www.waterfronttrail.org/
designed to enhance the Lake Ontario shoreline	
on the Canadian side.	
Ontario Clean Water Agency.	http://www.ocwa.com
Lifewater Canada	
Information on drilling safe drinking water wells	http://www.lifewater.ca
and building hand pumps, and training programs.	
Watershed Science Centre	http://www.trentu.ca/iws/
Information about watersned research.	
Water - Ministry of the Environment	
including wells, concernation, drinking water	http://www.ene.gov.on.ca/water/index.p
monitoring the Great Lakes, and more	np
Mater Survey of Canada	
National water quantity survey Looks at	http://www.wsc.ec.gc.ca/
waterrelated issues facing various provinces	http://www.wsc.ec.gc.ca/
Water Environmental Association of Ontario	
An organization for technical and professional	http://www.weao.org
individuals.	http://www.wedo.org
U.S. Environmental Protection Agency	
Kids' site has online activities.	http://www.epa.gov/kids/
Teachers' site has info, such as curriculum ideas	http://www.epa.gov/teachers/
and other links.	

Water Magic – Water Activities for Students and Teachers (Grades k-3) 23 hands-on activities that address various objectives

Waterweb A consortium listing water-related and environmental websites in Canada and internationally.	http://www.waterweb.org
Great Lakes Information Management Resource – Kids resources	http://www.on.ec.gc.ca/greatlakes/For_ki ds-W34DB7BBAD-1_En.htm
Canada's Aquatic Environments- Promotes awareness of aquatic ecosystems	http://www.aquatic.uoguelph.ca
Ducks Unlimited Canada	http://www.ducks.ca/resource/teachers/i ndex.html
Canadian Centre for Inland Waters Water research in the Great Lakes	http://www.ec.gc.ca/inre_nwril
<i>RiverSides Stewardship Alliance</i> Acts to facilitate behavioural attitudes	http://www.riversides.org
Ontario Streams Stream restoration information and education	http://ontariostreams.on.ca
Conservation Ontario- Network of 38 conservation	www.conservation-ontario.on.ca
Water Environment Federation-Dedicated to water preservation and enhancement	http://www.wef.org/AboutWater/ForTheP ublic/FactSheets/
Water Use it wisely- Incorporates water conservation tips into a memory game	www.wateruseitwisely.com
<i>BellLive</i> - Electronic Learning Adventures help kids learn about the environment	www.bellmuseum.org/distancelearning/w aters hed/watershed2.html

Directions to Peterborough Children's Water Festival

June 6th and 7th 2018

Riverview Park and Zoo Peterborough, Ontario



Riverview Park and Zoo is located on Water Street North in Peterborough, Ontario. Bus entrance to the parking lot is located at the lights by Carnegie Avenue.

Peterborough Utilities Services Inc. 1867 Ashburnham Dr., Peterborough, ON K9J 6Z5 (705) 748-9301, ext. 299 fax (705) 748-0120

Peterborough Children's Water Festival c/o GreenUp 378 Aylmer Street North, Peterborough, K9H 3V8 (705) 745-3238 x208 fax (705) 745-4413