Haliburton-Muskoka-Kawartha

children's water festival

2022

Teacher's Planning Guide

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... Thank You !

Haliburton-Muskoka-Kawartha children's water festival

September 3, 2022.

Dear Educators,

Welcome to the 2022 Haliburton-Muskoka-Kawartha Children's Water Festival (HMKCWF)! This annual community event raises awareness on the importance of water and inspires good water stewardship in our youth. Your students will have a unique opportunity to actively learn about one of our most valuable natural resources in a safe, natural out-of-doors environment. This year's festival has 35 learning stations that are designed to be hands-on, stimulating and fun, encouraging further understanding of water concepts taught through the school curriculum. As students travel in small groups to and spend about 8-15 minutes at stations, they'll "soak in" messages on water conservation, technology, protection and science and come to understand that their attitudes towards water do matter and that their actions do make a difference!

This 'pandemic revival' year we are pleased, to offer some of our most popular activity centres of the past, including some focussed on climate change links with water: "Polar Melt Down!"and "The Power of Water". By participating in these activities students will be urged to think about and discus the effects of global warming on the Earth's polar ice caps and learn about the force of water as a renewable energy. New centres this year include "Peat's In a Bog, what's the Catch" about the importance of Peatlands, including as Carbon sinks in reducing the negative effects of global warming. We have also created a "Storybook Walk" from " Follow the Water from Brook to Ocean" by Arthur Dorros and relate water stewardship steps we can all take, including steps suggested by students. This activity centre is one we would like to make available for schools to set-up on their grounds for periods of time in the future and look forward to your feedback after the festival to see if you would be interested in piloting such a program.

The quality of the HMKCWF is enhanced through the participation of Outside Presenters and we are pleased to have 10 different individuals and organizations participating in this year's festival. These are individuals and/or organizations that donate resources and time to present stations at our festival and provide first aid. These partnerships are very important in the delivery of the high quality learning experience that you and your students will receive at the HMK Children's Water Festival.

Please visit our website, www.hmwaterfestival.ca, to download various HMKCWF documents like the Teacher's Resource Guide or for more information on such things as individual activity centres, video clips and curriculum connections. The curriculum expectations are derived from Science and Technology (2007), Social Studies (2013), and Health and Physical Education (2010). We hope this will further help you integrate the festival experience with your classroom program.

The experience of the HMK Children's Water Festival does not have to end after you leave the Kinark Outdoor Centre! Take your students experience and follow through with the Water Hero Challenge! As a class, send in your list of as many creative ways they've learned we can protect and conserve water on our website www.waterheroes.ca or email them directly to me at splash@waterheroes.ca. The school which enters the most "water saving" ideas will win the opportunity to have their name engraved on the Big Splash Award and host it at their school until the 2023 festival! We also have prizes such as coupons from Kawartha Dairy for the class which sends in the most responses, and for the individual students who register the most significant actions they have taken to improve their water stewardship this year. The contest runs from the festival through to the beginning of March. We are hoping that your classes will come back from the festival inspired as leaders and help others in their school to participate! More supporting materials will be sent in follow-up to the Festival.

We appreciate your constructive insights on ways we can present key curriculum messages to your students and urge you to share them with us at "The Water Hero HeadquartersTable" while at the festival. Together we will continue to have youth explore and "experience" the importance of water, encouraging responsibility in maintaining healthy water systems for healthy living, now and for the future.

The intent of this Planning Guide is to help prepare yourself and your students for your day at the HMK Children's Water Festival. It not only provides important details for you and your students but also represents a record of the tremendous effort that our committee has put into 'bringing back' an event of this scale and quality through pandemic challenges. Many thanks to all who have made the 2022 Haliburton-Muskoka-Kawartha Children's Water Festival possible.

Yours truly,

Festival Coordinator: Kara Mitchell
2022 Haliburton-Muskoka-Kawartha Children's Water Festival

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Introduction

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

Learning in Context

Water covers 71 per cent of the planet, and also makes up about 75 per cent of a person's body weight. Water is essential for all life on Earth. Without it, nothing lives and nothing grows.

Civilization depends on the availability of water –to grow food, to drink, to wash with, and for travel and recreation around the world. 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, the natural environment, and our economies.

In Ontario, we enjoy what appears to be a super-abundance of water. The word 'Ontario' is actually from a Haudonasonee (Iroquoian) language and means 'beautiful water' or 'sparkling water'. There are about 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 per cent of their water supply from lakes and rivers (surface water), and 42 per cent from ground water. However, human activities can negatively affect water sources, sometimes with irreversible outcomes. Fortunately people are beginning to realize much of 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 than they need for cooking and drinking.
- A five minute shower with a standard shower head uses 100 litres of water, while the same length of shower with a low flow shower head uses only 35 litres.
- A single lawn sprinkler spraying 19 litres 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 Website, www.ec.gc.ca , under "Water".

Our Objectives

Two of the primary objectives of this holistic-focused event are to develop personal awareness of the importance of water and to foster respect for the natural environment. It is hoped that by increasing awareness and respect we will individually make a commitment to use water wisely and together protect this important natural resource.

This Teacher's Planning Guide is designed:

- to help you organize your day
- to suggest ways to prepare your students so they not only have fun, but get the most learning possible from the day

- to explain how the Festival activities meet the requirements of the Ontario Curriculum at each grade level
- offer ideas for extended study at school

At The Water Festival

The Haliburton-Muskoka-Kawartha Children's Water Festival motivates students to become water stewards in their classrooms and communities. With hands-on, interactive activities combined with messages relevant to their daily lives, students 'soak up' knowledge on 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, as follows:

Water Conservation

- 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

- Role of water in energy production.
- Examine how water is treated, stored and distributed.

Water Protection

- Examination of the interdependence of soil, air, water, plants, animals and people.
- 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.

Conclusion

Healthy water is essential to the natural environment, people, and the economy – including business, industry and transportation. The Haliburton-Muskoka-Kawartha 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 in a natural outdoor setting which help put an emphasis on the ecological connections.

We look forward to seeing you and your students at the Haliburton-Muskoka-Kawartha Children's Water Festival!

Getting Ready for the Festival:

Teachers who are bringing their classes to the Water Festival should consider the following preparation suggestions:

- Read through this planning guide, it will give you a good idea of what to expect at the Festival and suggest ways on how to make this visit a key part of your class's course of studies throughout the school year.

- Divide your class into groups of **five-seven**. Please ensure the groups are no larger than five students for supervision and safety reasons.

- Assign **one** adult supervisor to each group of **five-seven** 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. A parent information guide has been developed to help the adult supervisors feel more prepared for their visit to the Festival. This guide and other information packages can be found on our website, www.hmwaterfestival.ca , please feel free to download them.
  Please Note: An adult supervisor must accompany students at all times.

- With the possibility of us taking promotional photos at the Festival, adult supervisors need to be made aware of any students who are not to be photographed or interviewed. It would be great if proper name spellings of students able to be photographed or interviewed should also be available. ***Please ensure that parent supervisors know of students whose parents/guardians have not consented to photographs, video, etc. through the school board.***

- **Prepare and distribute copies** of the **Festival Itinerary template** (see page 12 of this guide) to all adult supervisors. We ask that you assign each group a different activity centre to start at, spreading the class amongst the 3-4 different areas of the festival, the Waterfront (#1-9), the Field by the Dining Hall/Baseball Diamond (#10-19), Eagle's Nest (#23-28) and The Pines (#29-37) to reduce congestion at the activity centres and maximize learning time. You can also list priority centres you hope they will flow to from there in the day.

- Read the description for each activity (found in Activity Centre Information section starting on page 17). This will help in planning your day.

- Familiarize yourself with the area and plan ahead by suggesting activities and exhibits that best suit the learning objectives of your program. The Festival Itinerary template will help you list preferred activities for each group of five students. By doing this you will assist your adult supervisors in identifying those activities that you are especially interested in having your students visit. ***Note to your parent volunteers that these are suggested activities to visit. 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.

- Make note of the "***Water Hero Scavenger Hunt***". Each group will be given a sheet of questions at the beginning of the day and the answers can be found scattered throughout the Festival grounds on **Water Hero Challenge** signs. This is a good thing to do if waiting for a particular activity centre to open up! ***Be sure to visit the Water Hero table when the group has completed the challenge and collect your water ambassador reminders!***

- Encourage everyone to bring **'litterless" lunches and snacks**, there will be no place on site to purchase lunches or snacks. Encourage students to bring, as past students have challenged us all to do as Water Heroes, **reusable water bottles**, several water coolers will be available around the site to fill up their bottles.
- Covid Safety; The festival is primarily outdoors, lending to great safety this way. We are respecting all TLDSB and Health Unit current protocols. There are a few limited indoor activity centres hosted in Eagle's Nest (#24-28) which will have open doors and windows for ventilation. Our volunteers are all screened and prepared to respect the diversity of masking and distancing needs.

Busses:

For easier identification, prepare a sign with your school's name on it and ask the school bus driver to display in the front window of the bus for pick up at the Festival. Also, ***please email the Festival Coordinator your expected departure time (& if arrival is outside of the 9:30-9:50 expected)*** *and if the buss transporting your students will be remaining on site or leaving and returning for pick up*. If this information has changed by your arrival, p*lease let the people at the registration table know*. This will help us be better prepared and organized in aiding your school to leave on time at the end of the day.

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:

1. The Festival will be held rain or shine. ***Please ensure that everyone is prepared and dresses for the weather***. The site may be wet in places, so **waterproof** footwear and outer jackets are a good idea! In case of heavy rain or storms we will confirm cancellation needs the day ahead and if they arise on the day have emergency shelters Kinark staff will direct groups to.

2. Upon your arrival at the Kinark Outdoor Centre, please have all students remain on the bus until you receive instructions for the day from a Festival Host. We will ask one teacher/staff to go to our registration table while other supervisors and students gather in a group nearby.

3. At registration, inform us about any changes or gaps in registration information, including numbers of students, major medical concerns and what time your school will be departing the Festival and if leaving, your busses returning.

4. A Festival 'Greeter' will provide an orientation tour, walking you from our registration area to an assigned half of a covered area that will serve as a space to meet at lunch and the end of the day and where you can leave places.

5. 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.

6. To minimize congestion at activity centres, and maximize the number of activity centres each group attends, we suggest you mix the suggested activities on this Itinerary list, as most adult supervisors tend to follow the list in order.

7. **Lunch breaks are recommended to take around the designated school lunch tents for a part of the time Festival volunteers will be rotating for lunch from 11:15 am to 12:30pm.** During lunch, the management of students are the teachers and adult supervisors' responsibility. Most activity stations will remain open during this scheduled lunch time to better accommodate individual classes. The lunch tents do not have enough seats and tables for all students, groups generally eat picnic style on the grass in view of their area

and schools are welcome to bring blankets for such. In the case of heavy rain at lunch, we will move some schools to 'emergency' shelters.

6. You can identify Festival volunteers by their blue bibs (pinnies) which have a white Haliburton-Muskoka-Kawartha Children's Festival logo on the front. Festival Organizers will be wearing bright green bibs (pinnies) with the HMK Children's logo on the front. Staff and volunteers will be located throughout the site. Should questions or problems arise, do not hesitate to approach them. They are there to help and are happy to do so.

7. The Haliburton-Muskoka-Kawartha Children's Water Festival puts safety first. A First Aid station, operated by Haliburton County Emergency Medical Services, will be situated in the baseball diamond area. This location is identified by on your activity centres location map. **If any of your students or adult supervisors have medical conditions (diabetes, epilepsy, severe allergies, etc.) you will need assistance with, please report to the First Aid station upon arrival at the Festival and submit a written description of the person and the condition(s).** Remember to pick up any medications you need assistance with allocating from them prior to leaving at the end of the day.

7.5 Kinark is an Outdoor Education Centre built for accessibility, the pathways to activity centres maintained for outdoor rugged mobility tools such as wheelchairs. While the 'porta-potties' that will serve as washrooms for most attendees through the day are not fully accessible, we have accessible washrooms at the Nova Centre upon arrival and at the Dining Hall for students and adult supervisors with these needs. It helps if you can let us know about this ahead of time and so we can pass on to the 'Greeters' who will orient your group to the site and can pass on these locations.

8. Remind your students about the importance of being careful around the lake. The lake is deep and turbid, reducing visibility during search and rescue.

9. A lost and found will be set up at the registration shelter (Nova Centre). Please bring any found items there, and check in before leaving the Festival to make sure your class hasn't left anything behind. Remaining items will be taken home with the Festival Coordinator after the Festival. Please contact the coordinator after the Festival if there are items you are still missing. **Items will be held for 2 weeks only!**

10. **The festival ends at 2:30 p.m.** All activities will shut down at this time. Some schools will need to depart before this time in order to meet bussing requirements, thanks for communicating your departure time to the HMKCWF coordinator ahead of time and reporting this at the registration desk in the morning if this has changed. Prepare ahead of time and set a meeting time at your designated area with adult supervisors on Itineraries ahead of the 5-10 minute walk to your school bus. Provide a sign with your school's name on it to your school bus driver so you can easily identify your bus among the many in the parking lot at the end of the day.

11. Enjoy debriefs and sharing what was learned with your classes in the days that follow. Thanks for sending some of this to us in feedback that will be emailed to you and sharing about students' ideas and actions taken in our Water Hero's ' Big Splash Contest'

Haliburton-Muskoka-Kawartha Children's Water Festival Itinerary

Name of adult supervisor:_____

Start at the following activity centre:

Activity Centre	Site Map Location

After the first activity, please try to visit the following activities at some point throughout the day:

Activity Centre	Site Map Location

Lunch breaks are recommended to take at the designated student lunch tents for a part of the time Festival volunteers will be rotating for lunch from 11:15 am to 12:30pm.

Students in your group are:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Time to meet at designated area for departure:_____

Regroup with your teacher and class/school at the end of the day at the designated area at the lunch tents at the above time.

Please make copies of this page and the activity centre location map found on page 16 for you and your supervisors!

Teacher's Notes

Please make more copies if you need

Thematic Overview of Activity Centres

All of the activity centres listed below are accessible to all children at the Festival.

For the purpose of assisting teachers in planning their itinerary, we have grouped the activity centres into five themes, encoded below. We recognize that many of the activities could belong to more than one of the five themes but have identified one predominant theme to facilitate the focus or diversity of the itinerary.

For most activity centres, we have attempted to include the most relevant learning expectations from the Ontario Curriculum which can be found in the section starting on page 17.

New this year is the addition of possible self-guided activities which have been indicated in the table below with an "*****". Self-guided activities relay the same messaging as facilitated activities but in the case where numbers of volunteers fall short to man all of listed stations, self-guided stations can be easily guided by teachers and adult supervisors through prompts and questions accompanying the activity.

WC: Water Conservation **WA**: Water Attitudes **WT**: Water Technology **WP**: Water Protection **WS**: Water Science
CC: Climate Change

Activity Centre	Theme	Location	Map #
Atlantic Salmon Loss and Restoration	WP & WS	The Pines	32
Algonquin Highlands Fire Service	WC	Eagle's Nest (Outside, bball courts)	23
Beaver Fever	WP	The Pines -The Challenge Course	29
Blooming Jeopardy	WP	The Pines	36
Bugs in the Mud	WS	Waterfront (Under Open Shelter)	7
Creeks and Critters *	WP	Waterfront	9
Earth in the Balance	WP	Baseball Diamond / Dining Hall Field	13
Froggy … You are Outta There!	WP	Baseball Diamond Field	22
Haliburton Fire Crew	WC	Waterfront	6
How Wet is Our Planet?	WS	Waterfront (Under Open Shelter)	8
It's a Trout's Life	WP	Waterfront	2
Just Dam It!	WP	The Pines	3o
Lather Up!	WC	The Pines	33
Migration Headache (2 Groups @ once)	WP	Baseball Diamond Field	21
Ontario Provincial Police Marine Unit	WA	Down Rd from Eagle's Nest	19
Osprey Survivor	WS	Below Dining Hall (Outside)	16
Peat's in a Bog !	WS & CC	Eagle's Nest (Inside Lower Level)	24
Pioneer Water Race *	WA	The Pines	34
Polar Melt Down!	WP & CC	Eagle's Nest (Inside Upper Level)	27
Reign in Garbage! (model)	WP	Eagle's Nest (Inside Upper Level)	24

Activity Centre	Theme	Location	Map #
Rolling Through the Shed	WP	Baseball Diamond (Hill Beside)	15
Round You Go, H_2O!	WS	Waterfront	3
Shoreline Do's & Don'ts *	WP	Eagle's Nest (back porch)	28
Stream Savers	WP	The Pines	37
The Great Swim Off	WP	Waterfront	5
The Power of Water	WT	Behind Dining Hall (Under Shelter)	12
Turtle Guardians	WP	Field by Lunch Tents	18
Turtle Trauma	WP	The Pines	35
Unwelcomed Guests	WP	Baseball Diamond Field	20
Up on the Watershed	WA & CC	The Pines	31
Wash Out!	WA	Waterfront	1
Water Hero Scavenger Hunt	WA	Throughout Festival Grounds, Finish at Water Hero Headquarters	16
Water Runs Downhill	WS	Eagle's Nest (Infront of)	26
Water Storybook Walk *	WP	On trail between Field and road to waterfront	10
What's Coming?	WS	Baseball Diamond (top of Hill Beside)	14
Wonderful Wetlands	WP	Waterfront	4
***May be run as a self-guided activity "tbc"= to be confirmed**			

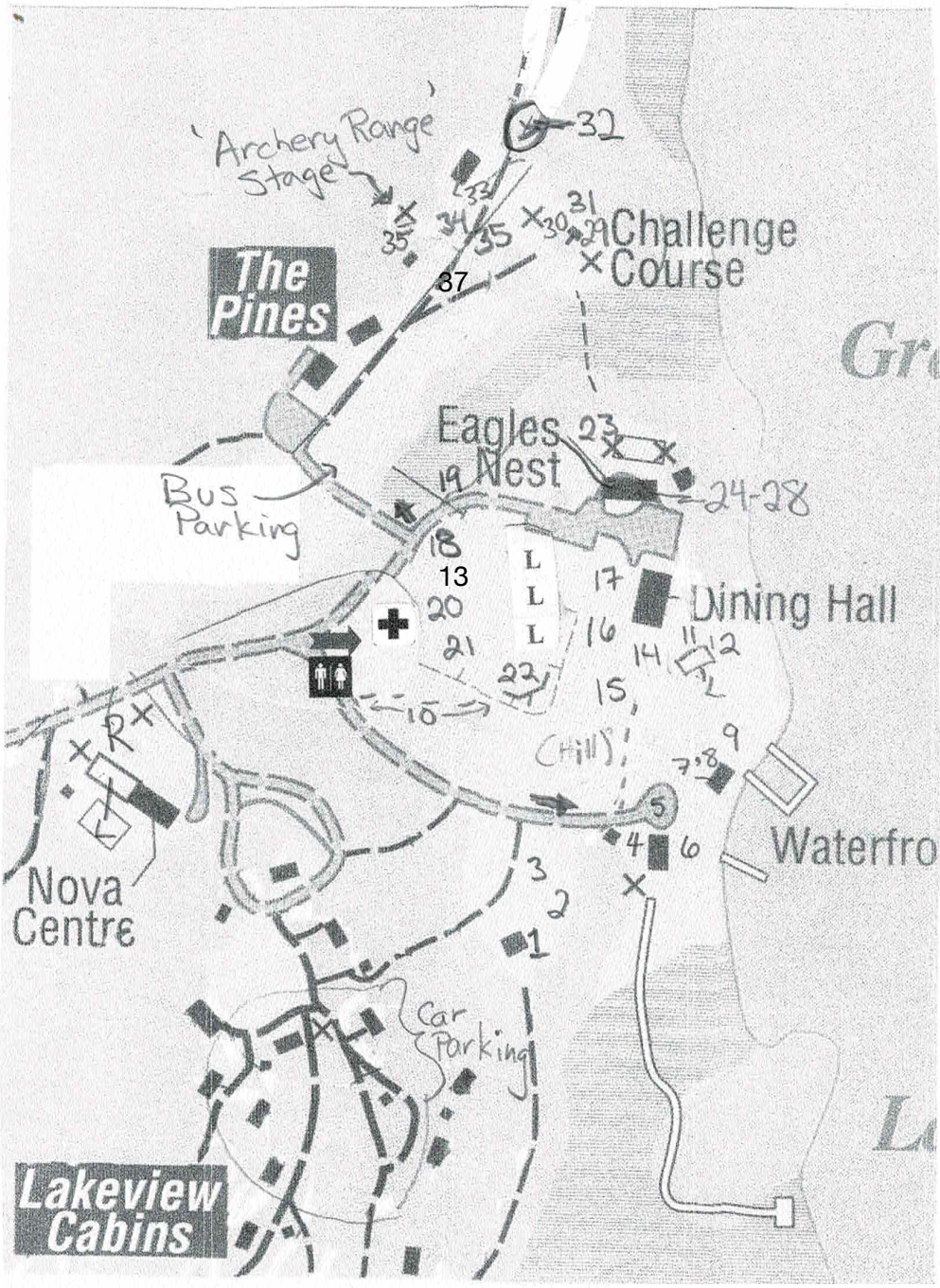
2022

Activity Centres Map

R Registration L Lunch Tents for Students

First Aid Directional Signage

Washrooms - - - = trail



Festival Activities

1. Wash Out !
2. It's a Trout's Life
3. Round You Go, H20
4. Wonderful Wetlands
5. The Great Swim Off !
6. Haliburton Fire Crew
7. Bugs in the Mud
8. How wet is our planet ?
9. Creeks and Critters
10. Storybook Walk (self-led)
11. Tread Lightly
12. The Power of Water
13. Earth in Balance (Field by Dining hall)
14. What's coming
15. Rolling Through the Shed
16. Osprey Survivor
17. Water Hero Headquarters
18. Turtle Guardians
19. OPP Marine Unit
20. Unwelcome Guests
21. Migration Headache
22. Froggy You are Outta There !
23. Algonquin Highlands Fire Service
24. Peats in a Bog (inside lower)
25. Reign in the Garbage (inside upper)
26. Water Runs Downhill (in front)
27. Polar Melt Down (inside upper)
28. Shoreline Do's and Don'ts (back porch)
29. Beaver Feaver !
30. Just Dam It !
31. Up on the Watershed
32. Atlantic Salmon Loss & Restoration
33. Lather up !
34. Pioneer Water Race
35. Turtle Trauma
36. Blooming Jeopardy
37. Stream Savers (in the Pines section)

2019 Haliburton-Muskoka-Kawartha Children's Water Festival Activity Centre Information

In this next section, you will find descriptions of each activity centre at the Festival. For your planning needs, we have attempted to provide up to date Ontario curriculum connections for most activity centres. The subjects that the curriculum links were taken from include: Science and Technology (2007), Social Studies (2013), and Health and Physical Education (2010). You may wish to use this information to integrate the Festival experience with your classroom program. Some activities may be described as 'open' to all grades because the visiting presenters have not identified specific Ontario Curriculum learning expectations. The curriculum guidelines may also allow you to determine which activities are priorities for your class to visit, since some activities fit the curriculum differently for various grades.

Health and Physical Education links may not be included specifically for each activity centre however; the HMK Children's Water Festival encompasses health and physical education by nature. The Festival is spread out over a large area, requiring students to walk (or run) between each activity centre, and the activities themselves often involve physical activity to engage children. Movement is a major theme at the HMK Children's Water Festival, relating to the Ontario Health and Physical Education Curriculum.

In a later section, some suggestions and activities are provided to help with ideas which you can do in class before and after attending the Festival. We also hope that you use the ***HMKCWF Teacher's Resource Guide*** which contains water activities for your students that can be utilized within your classroom and your community. This can be downloaded from the Teachers' Tab at our website www.hmwaterfestival.ca. We hope your class's visit to the Haliburton-Muskoka-Kawartha Children's Water Festival will be a highlight of a larger program in your classroom this year!

Water Conservation Activity Centres

Activity	Description	Ontario Curriculum Connections
Algonquin Highlands Fire Service	Activities, including a tour of a fire truck, demonstrate the use of water to keep us safe and the important role the Fire Service has in our communities. Presented by Algonquin Highlands Fire Service.	***Health and Physical Education*** **Living Skills, Grade 6 (Healthy Living)** • recognize the responsibilities and risks associated with caring for themselves and others and demonstrate an understanding of related safety practices and appropriate procedures for responding to dangerous situations *(e.g. responses to fire)*

Haliburton Fire Crew	Haliburton County was home to the first Forest Ranger Training Facility, known as the Leslie M. Frost Centre. The Ministry of Natural Resources Fire Crew will be on site with the Fire Truck and equipment to show students how to extinguish a forest fire, and to discuss the issues of open fires. Presented by the Ministry of Natural Resources Haliburton Fire Crew.	***Science and Technology*** **Understanding Matter and Energy, Grade 5 (Properties and Changes In Matter)** • follow established safety procedures for working with heating appliances and hot materials ***Health and Physical Education*** **Living Skills, Grade 4 (Active Living)** • describe common precautions for preventing accidents and injuries while participating in different types of physical activity **Living Skills, Grade 6 (Active Living)** • demonstrate behaviours and apply procedures that maximize their safety and that of others during physical activity **Living Skills, Grade 6 (Movement Competence: Skills, Concepts, and Strategies)** • perform smooth transfers of weight in relation to others and equipment in a variety of situations involving static and dynamic balance • perform a wide variety of locomotor movements, in combination, at different speeds, in different directions, and using different pathways, while moving around others and/or equipment
Lather Up!	How much water do we use for a five-minute shower? Students compare early 19th 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.	***Science and Technology*** **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts • evaluate the effects of various technologies on energy consumption and propose ways in which individuals can improve energy conservation • identify renewable and non-renewable sources of energy **Understanding Matter and Energy, Grade 6 (Electricity and Electrical Devices)** • assess opportunities for reducing electricity consumption at home or at school that could affect the use of non-renewable resources in a positive way or reduce the impact of electricity generation on the environment • describe ways in which the use of electricity by society, including the amount of electrical energy used, has changed over time ***Social Studies*** **Heritage and Identity, Grade 6 (Communities in Canada, Past and Present)** • describe some key economic, political, cultural, and social aspects of life in settler communities in Canada

Water Attitudes Activity Centres

Activity	Description	Ontario Curriculum Connections
Ontario Provincial Police Marine Unit	The OPP Marine Unit was established in 1970 and is responsible for enforcement of Boating Regulations on non-federal waterways, and for search and rescue. Members of the Minden OPP Marine Unit will be on site with their boat and equipment to discuss their Marine Policing Duties. Presented by the Ontario Provincial Police Minden.	***Health and Physical Education*** **Living Skills, Grade 5 (Healthy Living)** • identify people (e.g., parents, guardians, neighbours, teachers, crossing guards, police, older students, coaches, elders) and supportive services (e.g., help lines, 9-1-1, Telehealth, public health units, student services) that can assist with injury prevention, emergencies, bullying, and abusive and violent situations [PS]
Wash Out!	Using a model, students will learn how the presence and absence of vegetation can affect the flow and amount of water and what this means for communities near waterbodies Presented by the Muskoka Watershed Council.	***Science and Technology*** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat **Understanding Earth and Space Systems, Grade 4 (Rocks and Minerals)** • analyse the impact on society and the environment of extracting and refining rocks and minerals for human use, taking different perspectives into account • use scientific inquiry/research skills to investigate how rocks and minerals are used, recycled, and disposed of in everyday life

Pioneer Water Race	Help us fetch a bucket! Students will be encouraged to 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 water needed for animals and the family, was transported from its source by early settlers. Students will compare the difficulties in gathering water using various techniques.	***Social Studies*** **Heritage and Identity, Grade 4 (Early Societies, 3000 BCE – 1500 CE)** • compare aspects of the daily lives of different groups in an early society *(e.g., the work, family life)*, and explain how differences were related to the social organization of that society • describe some of the ways in which their daily life differs from the lives of young people from different backgrounds *(e.g., wealthy, poor, slave, urban, rural, nomadic)* in two or more early societies *(e.g., with reference to family life, responsibilities, work)* • describe significant aspects of daily life in two or more early societies • describe significant physical features and natural processes and events in two or more early societies *(e.g.,* physical features: *rivers)* and how they affected these societies, with a focus on the societies' sustainability and food production **Heritage and Identity, Grade 6 (Communities in Canada, Past and Present)** • describe some key economic, political, cultural, and social aspects of life in settler communities in Canada ***Health and Physical Education*** **Living Skills, Grade 4 (Movement Competence: Skills, Concepts and Strategies)** • perform different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, using different pathways, and going in different directions • send and receive objects of a variety of shapes and sizes at different levels and speeds, using different body parts and equipment, while applying basic principles of movement • retain objects of various shapes and sizes in different ways, using different body parts, with and without equipment, while moving around others and equipment **Living Skills, Grade 5 (Movement Competence: Skills, Concepts and Strategies)** • perform controlled transfers of weight in a variety of situations involving static and dynamic balance, using changes in speed and levels, with and without equipment • explore different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, and using different pathways • send and receive objects using different body parts and equipment, adjusting for speed, while applying basic principles of movement **Living Skills, Grade 6 (Movement Competence: Skills, Concepts and Strategies)** • perform smooth transfers of weight in relation to others and equipment in a variety of situations involving static and dynamic balance • perform a wide variety of locomotor movements, in combination, at different speeds, in different directions, and using different pathways, while

Tread Lightly	This demonstration explores how to minimize your impact while enjoying activities near or on the water and why it is important.	***Science and Technology*** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyze the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species *(e.g., changes in or destruction of its habitat)*, evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts • identify renewable and non-renewable sources of energy
Water Hero Scavenger Hunt	Students will explore the festival grounds in a scavenger hunt fashion to find out interesting facts about water. This activity is a fun way for students to learn and work together.	***Health and Physical Education*** **Living Skills, Grade 4** • apply relationship and social skills as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living to help them interact positively with others, build healthy relationships, and become effective team members **Living Skills, Grade 5** • apply relationship and social skills as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living to help them interact positively with others, build healthy relationships, and become effective team members **Living Skills, Grade 6** • apply relationship and social skills as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living to help them interact positively with others, build healthy relationships, and become effective team members *(e.g. Movement Competence: contribute ideas when working in a group to accomplish a collaborative task)*

Up on the Watershed	Students investigate the importance of water management in a watershed by using funnel models, seeing the effects that damns, wetlands, etc. have on the water cycle	***Science and Technology*** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species *(e.g., changes in or destruction of its habitat)*, evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • evaluate the effects of various technologies on energy consumption, and propose ways in which individuals can improve energy conservation • identify renewable and non-renewable sources of energy ***Social Studies*** **People and Environments, Grade 4 (Political and Physical Regions of Canada)** • analyse some of the general ways in which the natural environment of regions in Canada has affected the development of industry • assess aspects of the environmental impact of different industries in two or more physical and/or political regions of Canada *(e.g., hydro-electric development in Quebec)* • describe some key actions taken by both industries and citizens to address the need for more sustainable use of land and resources • identify some of the main human activities, including industrial development and recreational activities, in various physical regions of Canada **Peoples and Environments, Grade 5 (The Role of Government and Responsible Citizenship** • assess the effectiveness of actions taken by one or more levels of government to address an issue of national, provincial/territorial, and/or local significance (e.g. the effectiveness of policies related to the management of the Great Lakes) • create a plan of action to address an environmental issue of local, provincial/ territorial, and/or national significance, specifying the actions to be taken by the appropriate level (or levels) of government as well as by citizens, including themselves • describe key actions taken by different levels of government to solve some significant national, provincial/territorial, and/or local issues **Peoples and Environments, Grade 6 (Canada's Interactions with the Global Communities)** • explain why some environmental issues are of international importance and require the participation of other regions of the world, along with that of Canada, if they are to be effectively addressed • analyse responses of Canadian governments, non-

Water Technology Activity Centres

Activity	Description	Ontario Curriculum Connections
The Power of Water **(NEW)**	Through the use of hands-on models, students will learn how the force of water is used to generate clean, reliable and renewable energy.	**Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts • identify renewable and non-renewable sources of energy

Water Protection Activity Centres

Activity	Description	Ontario Curriculum Connections
Rolling Through the Shed	Water flows in a continuous cycle. Water picks up a variety of contaminants along the cycle. We must all do our part to prevent water consumption.	~~**Science and Technology**~~ **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors *(e.g., availability of water or food, amount of light, type of weather)* that affect the ability of plants and animals to survive in a specific habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts
Water Story Book Walk	This "Water Storybook Walk" combines pages of " Follow the Water from Brook to Ocean" by Arthur Dorros with related water stewardship steps or 'Water Hero Acts' we can take in our homes, schools and communities.	**Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyze the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyze the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Peoples and Environments, Grade 6 (Canada's Interactions with the Global Communities)** • explain why some environmental issues are of international importance and require the participation of other regions of the world, along with that of Canada, if they are to be effectively addressed

Beaver Fever	With the use of props, metaphors will be used to initiate discussion on the various adaptations which allow the beaver to create and maintain its aquatic lifestyle.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs (e.g., beavers use water for shelter [they build their lodges so the entrance is under water], food [cattails, water lilies, and other aquatic plants], and protection [they slap their tails on the water to warn of danger]) • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • identify and describe the distinguishing characteristics of different groups of plants and animals and use these characteristics to further classify various kinds of plants and animals • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity **Social Studies** **Heritage and Identity, Grade 5 (First Nations and Europeans in New France and Early Canada)** • describe some of the positive and negative consequences of contact between First Nations and Europeans in New France *(e.g., with reference to the fur trade)*, and analyse their significance • analyse aspects of early contact between First Nations and Europeans in New France to determine the ways in which different parties benefited • describe significant aspects of the interactions between First Nations and European explorers and settlers during this period *(e.g., with reference to sharing of beliefs, knowledge, skills, technology)*

Blooming Jeopardy	Blue Green Algae (Cyanobacteria) naturally exists in our waters but occurrences of blooms seem to be on the rise. This fun, team "game show" activity will help students understand more about this water inhabitant, the effect of blooms and what they can do to help decrease them from happening.	***Science and Technology*** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species *(e.g., changes in or destruction of its habitat)*, evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Life Systems, Grade 5 (Human Organ Systems)** • assess the effects of social and environmental factors on human health, and propose ways in which individuals can reduce the harmful effects of these factors and take advantage of those that are beneficial • evaluate the effects, both beneficial and harmful, of various technologies on human body systems, taking different perspectives into account ***Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)*** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts • evaluate the effects of various technologies on energy consumption, and propose ways in which individuals can improve energy conservation ***Social Studies*** **People and Environments, Grade 4 (Political and Physical Regions of Canada)** • describe some key actions taken by both industries and citizens to address the need for more sustainable use of land and resources **Peoples and Environments, Grade 5 (The Role of Government and Responsible Citizenship** • create a plan of action to address an environmental issue of local, provincial/ territorial, and/or national significance, specifying the actions to be taken by the appropriate level (or levels) of government as well as by citizens, including themselves • describe key actions taken by different levels of government to solve some significant national, provincial/territorial, and/or local issues

Creeks and Critters	A simulation of a natural aquatic environment that displays various native species. Students have to identify the different elements of the ecosystem including, animals, plants, and tracks. Students use a life-like model to examine the dependency of various plants and animals on clean water supplied by creeks and streams. Learn about the importance of small water courses in a forested environment, and participate in an interactive identification game. Made possible by the Bancroft Stewardship Council.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • identify and describe the distinguishing characteristics of different groups of plants and animals and use these characteristics to further classify various kinds of plants and animals • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • use scientific inquiry/research skills to compare the characteristics of organisms within the plant or animal kingdoms • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities

Earth in Balance – it's a community effort!	Students will use a fun team building activity, to reinforce the concept of the interconnectedness of living things. These connections are necessary for healthy ecosystems, healthy communities (including humans) and a healthy Earth.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • build food chains consisting of different plants and animals, including humans • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs • use appropriate science and technology vocabulary, including *habitat, population, community, adaptation*, and *food chain*, in oral and written communication • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of food chains as systems in which energy from the sun is transferred to producers (plants) and then to consumers (animals) • classify organisms, including humans, according to their role in a food chain *(e.g., producer, consumer, decomposer)* • identify animals that are carnivores, herbivores, or omnivores • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats • explain why changes in the environment have a greater impact on specialized species than on generalized species • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support • describe ways in which humans are dependent on natural habitats and communities • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs, food, and protection **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • describe interrelationships within species, between species and between species and their environment,

Froggy … You are Outta There!	Students are introduced to amphibians and the concept of limiting factors in a fun and an active baseball simulation game. Using frogs as the amphibian example, students investigate the life cycle of amphibians and limiting population factors, such as habitat loss and pollution. Students become "frogs" and attempt to make it around the life cycle "bases" (egg, tadpole, sub-adult, and adult) without being caught by students representing limiting factors.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat **Understanding Life Systems, Grade 6 (Biodiversity)** • identify and describe the distinguishing characteristics of different groups of plants and animals and use these characteristics to further classify various kinds of plants and animals • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them **Social Studies** **People and Environments, Grade 4 (Political and Physical Regions in Canada)** • assess aspects of the environmental impact of different industries in two or more physical and/or political regions of Canada • identify some of the main human activities, including industrial development and recreational activities, in various physical regions of Canada **People and Environments, Grade 5 (The Role of Government and Responsible Citizenship)** • assess the effectiveness of actions taken by one or more levels of government to address an issue of national, provincial/territorial, and/or local significance *(e.g. the effectiveness of policies related to the management of the Great Lakes)* • create a plan of action to address an environmental issue of local, provincial/ territorial, and/or national, specifying the actions to be taken by the appropriate level (or levels) of government as well as by citizens, including themselves • describe some different ways in which citizens can take action to address social and environmental

It's a Trout's Life	This fun interactive life size game will familiarize students with different developmental stages of rainbow trout and the associated habitats. They will also come to understand some of the challenges these fish face as they grow and the difficulties which they must endure as adults.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • explain how invasive species (e.g., zebra mussel, Asian longhorned beetle, purple loosestrife) reduce biodiversity in local environments **Health and Physical Education** **Living Skills, Grade 4 (Movement Competence: Skills, Concepts and Strategies)** • perform different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, using different pathways, and going in different directions • retain objects of various shapes and sizes in different ways, using different body parts, with and without equipment, while moving around others and equipment **Living Skills, Grade 5 (Movement Competence: Skills, Concepts and Strategies)** • explore different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, and using different pathways • send and receive objects using different body parts and equipment, adjusting for speed, while applying basic principles of movement **Living Skills, Grade 6 (Movement Competence: Skills, Concepts and Strategies)** • perform a wide variety of locomotor movements, in combination, at different speeds, in different directions, and using different pathways, while moving around others and/or equipment • send and receive a variety of objects, adjusting for

Just Dam It!	This station allows students to get a hands-on approach to beaver dam building and pond creation. Students will come to understand the importance of the building materials used by beavers and will learn the benefits of the flooded area. PLEASE NOTE: In response to popular demand, there are two model activity centres available to accommodate students.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs (e.g., beavers use water for shelter [they build their lodges so the entrance is under water], food [cattails, water lilies, and other aquatic plants], and protection [they slap their tails on the water to warn of danger]) • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • identify and describe the distinguishing characteristics of different groups of plants and animals and use these characteristics to further classify various kinds of plants and animals • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity **Health and Physical Education** **Living Skills, Grade 4 (Movement Competence: Skills, Concepts and Strategies)** • perform different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, using different pathways, and going in different directions **Living Skills, Grade 5 (Movement Competence: Skills, Concepts and Strategies)** • explore different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, and using different pathways **Living Skills, Grade 6 (Movement Competence: Skills, Concepts and Strategies)** • perform a wide variety of locomotor movements, in

Migration Headache	In this fun activity students will play the role of migrating geese to find out the importance of wetlands. Students will brainstorm ideas of how to protect and regenerate wetlands.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • describe ways in which biodiversity within species is important for maintaining the resilience of those species • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities **Social Studies** **People and Environments, Grade 5 (The Role of Government and Responsible Citizenship)** • assess the effectiveness of actions taken by one or more levels of government to address an issue of national, provincial/territorial, and/or local significance *(e.g. the effectiveness of policies related to the management of the Great Lakes)* • create a plan of action to address an environmental issue of local, provincial/ territorial, and/or national, specifying the actions to be taken by the appropriate level (or levels) of government as well as by citizens, including themselves • describe some different ways in which citizens can take action to address social and environmental issues

Shoreline Do's and Don'ts	A display which visually explores a healthy shoreline vs. a non-healthy shoreline.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • describe structural adaptations that allow plants and animals to survive in specific habitats • explain why changes in the environment have a greater impact on specialized species than on generalized species • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support • describe ways in which humans are dependent on natural habitats and communities **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities

Stream Savers	Students learn how a naturalized stream bank provides a protected environment for aquatic species. They observe the different responses of naturalized versus "manicured" stream banks.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • describe structural adaptations that allow plants and animals to survive in specific habitats • explain why changes in the environment have a greater impact on specialized species than on generalized species • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support • describe ways in which humans are dependent on natural habitats and communities **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities

The Great Swim Off (Modified)	Students become the fish in a fun relay race where they will learn that different species of fish rely on different habitats and adaptations for survival within a lake.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • describe structural adaptations that allow plants and animals to survive in specific habitats • explain why changes in the environment have a greater impact on specialized species than on generalized species • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • explain how invasive species (e.g., zebra mussel, Asian longhorned beetle, purple loosestrife) reduce biodiversity in local environments • use scientific inquiry/research skills to compare the characteristics of organisms within the plant or animal kingdoms • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • investigate the organisms found in a specific habitat and classify them according to a classification system **Health and Physical Education**

Turtle Trauma	Teaches the role of turtles in maintaining water quality in rivers and lakes, and identifies problems and solution to help turtle populations at risk to survive. Helps students understand the importance organisms and animals play in keeping ecosystems clean. Also explores how ecosystems are a system of many different, and that many different aspects of the environment need to be protected in order to provide clean water.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • describe structural adaptations that allow plants and animals to survive in specific habitats • explain why changes in the environment have a greater impact on specialized species than on generalized species • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species

Unwelcomed Guests	Students learn how invasive species are introduced into water systems and the potential impact invasive species have one aquatic habitat.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • explain why changes in the environment have a greater impact on specialized species than on generalized species **Understanding Life Systems, Grade 6 (Biodiversity)** • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • explain how invasive species *(e.g., zebra mussel, Asian longhorned beetle, purple loosestrife)* reduce biodiversity in local environments

Wonderful Wetlands!	A hands-on activity where students learn about the importance of wetlands in their landscapes. Students will create a landscape using different materials and will test the permeability of these materials. Presented by Kawartha Conservation.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyze the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • analyze the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts **Understanding Life Systems, Grade 6 (Biodiversity)** • analyze a local issue related to biodiversity, taking different points of view into consideration, propose action that can be taken to preserve biodiversity, and act on the proposal.

Water Science Activity Centres

Activity	Description	Ontario Curriculum Connections
How Wet is Our Planet?	A visual, informative and hands-on activity that gives students an idea of how much fresh water is available in the world. Students will learn why there is less water available and how we can help conserve water.	**Science and Technology** **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyze the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts *(e.g., turning off the faucet while brushing teeth or washing and rinsing dishes conserves water)* • evaluate the effects of various technologies on energy consumption, and propose ways in which individuals can improve energy conservation
Atlantic Salmon Loss and Restoration	Guest presenters from the Ontario Federation of Anglers and Hunters (OFAH) tell the story of the loss of Atlantic Salmon from Lake Ontario and their program to restore them. This is followed with a role-playing predator-prey game.	There are lots of ties to aquatic ecosystem health of; **Understanding Life Systems, Grade 4 (Habitats and Communities)** **Understanding Life Systems, Grade 6 (Biodiversity)** • analyze a local issue related to biodiversity, taking different points of view into consideration, propose action that can be taken to preserve biodiversity

Bugs in the Mud	Discover the strange creatures living in the Benthic Zone! Identify bugs that are important indicators of your lakes health. Presented by the Dorset Environmental Science Centre, Ministry of Environment and Climate Change.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat • describe structural adaptations that allow plants and animals to survive in specific habitats • describe structural adaptations that allow plants and animals to survive in specific habitats • demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • use scientific inquiry/research skills to compare the characteristics of organisms within the plant or animal kingdoms • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them • describe ways in which biodiversity within species is important for maintaining the resilience of those species • investigate the organisms found in a specific habitat and classify them according to a classification system
Peat's in a Bog - What's the Catch	Through the use of a bog model, interactive questions and hands on peat examination, students will learn how wetlands and peat are formed. Participants will come to understand the benefits of peat and peatlands, including their important role in decreasing the effects of climate change and global warming.	**Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyze the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts *(e.g., turning off the faucet while brushing teeth or washing and rinsing dishes conserves water)* • evaluate the effects of various technologies on energy consumption, and propose ways in which individuals can improve energy conservation **Understanding Life Systems, Grade 6 (Biodiversity)** • describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities

Osprey Survivor	This fun activity helps students learn about the osprey and how they depend on healthy fish for survival. The concept of food chains and how contaminated fish can affect animals that eat them is also clearly introduced.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • identify reasons for the depletion or extinction of a plant or animal species (e.g. changes in or destruction of its habitat), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening • identify factors that affect the ability of plants and animals to survive in a specific habitat • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life • demonstrate an understanding of a community as a group of interacting species sharing a common habitat **Understanding Life Systems, Grade 6 (Biodiversity)** • identify and describe the distinguishing characteristics of different groups of plants and animals and use these characteristics to further classify various kinds of plants and animals • describe interrelationships within species, between species and between species and their environment, and explain how these interrelationships sustain biodiversity • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them **Social Studies** **People and Environments, Grade 4 (Political and Physical Regions in Canada)** • assess aspects of the environmental impact of different industries in two or more physical and/or political regions of Canada • identify some of the main human activities, including industrial development and recreational activities, in various physical regions of Canada **People and Environments, Grade 5 (The Role of Government and Responsible Citizenship)** • assess the effectiveness of actions taken by one or more levels of government to address an issue of national, provincial/territorial, and/or local significance *(e.g. the effectiveness of policies related to the management of the Great Lakes)* • create a plan of action to address an environmental issue of local, provincial/ territorial, and/or national, specifying the actions to be taken by the appropriate level (or levels) of government as well as by citizens, including themselves • describe some different ways in which citizens can take action to address social and environmental

Round You Go, H2O!	Students will learn the Hydrological Cycle through a fun role playing game.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts • demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life **Understanding Life Systems, Grade 6 (Biodiversity)** • demonstrate an understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts *(e.g., turning off the faucet while brushing teeth or washing and rinsing dishes conserves water)* **Health and Physical Education** **Living Skills, Grade 4 (Movement Competence: Skills, Concepts and Strategies)** • perform different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, using different pathways, and going in different directions **Living Skills, Grade 5 (Movement Competence: Skills, Concepts and Strategies)** • explore different combinations of locomotor movements with and without equipment, alone and with others, moving at different speeds and levels, and using different pathways **Living Skills, Grade 6 (Movement Competence: Skills, Concepts and Strategies)** • perform a wide variety of locomotor movements, in combination, at different speeds, in different directions, and using different pathways, while moving around others and/or equipment
Turtle Guardians	These guest presenters will introduce us to live turtle friends and explain how turtles are important for keeping our lakes and wetlands clean. Students will learn about how they can join communities helping conserve turtles.	Many Curriculum-linked resources from Turtle Guardians can be found at; https://www.turtleguardians.com/junior-grades-4-6/

Water Runs Downhill	An activity that demonstrates what watersheds and catchment areas are while allowing students to see how water travels within local watersheds. This activity aims to give a holistic look at our local water systems and how they fit within the greater landscape, by District as well as Provincially. It will increase students' understanding of how vitally connected our water systems are and emphasize that their actions do have an impact on others downstream.	**Science and Technology** **Understanding Life Systems, Grade 4 (Habitats and Communities)** • analyse the positive and negative impacts of human interactions with natural habitats and communities, taking different perspectives into account, and evaluate ways of minimizing the negative impacts **Understanding Earth and Space Systems, Grade 5 (Conservation of Energy and Resources)** • analyse the long-term impacts on society and the environment of human uses of energy and natural resources, and suggest ways to reduce these impacts **Social Studies** **People and Environments, Grade 5 (The Role of Government and Responsible Citizenship)** • assess the effectiveness of actions taken by one or more levels of government to address an issue of national, provincial/territorial, and/or local significance *(e.g. the effectiveness of policies related to the management of the Great Lakes)* • describe some different ways in which citizens can take action to address social and environmental issues
What's Coming?	Students become junior "meterologists" by spinning a cloud wheel and learning the basics of weather prediction based on cloud types and wind direction.	Not Available yet.

Planning for and around the Festival

We want the Festival to 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 the Festival Day.

In this section we offer some suggestions for assessing the learning-success of the day, and include some suggestions on how you might expand the Festival Day experience into your classroom program.

Assessment:

The Curriculum Reference section matched the activities at the Festival with sections of the Curriculum, and an earlier section suggested the overall objectives of the Festival.

The subjects that the curriculum links were taken from include: Science and Technology (2007), Social Studies (2013), and Health and Physical Education (2010). In summary, these Curriculum Connections are from:

Grade 4

- Science and Technology - Life Systems (Habitats and Communities)
- Science and Technology – Earth and Space Systems (Rocks and Minerals)
- Science and Technology – Structures and Mechanisms (Pulleys and Gears)

- Social Studies – Peoples and Environments (Political and Physical Regions of Canada)
- Social Studies – Heritage and Identities (Early Societies, 3000 BCE – 1500 CE)

- Health and Physical Education – Living Skills (Active Living, Movement Competence: Skills, Concepts and Strategies)

Grade 5

- Science and Technology –Life Systems (Habitats and Communities, Human Organ System)
- Science and Technology – Earth and Space Systems (Conservation of Energy and Resources)
- Science and Technology – Structures and Mechanisms (Forces Acting on Structures and Mechanisms)
- Science and Technology – Matter and Energy (Properties and Changes in Matter)

- Social Studies – Peoples and Environments (The Role of Government and Responsible Citizenship
- Social Studies – Heritage and Identities 5 (First Nations and Europeans in New France and Early Canada)

- Health and Physical Education – Living Skills (Health Living, (Movement Competence: Skills, Concepts and Strategies)

Grade 6

- Science and Technology –Life Systems (Biodiveristy)
- Science and Technology – Matter and Energy (Electricity and Electrical Devices)

- Social Studies – Peoples and Environments (Canada's Interactions with the Global Community)
- Social Studies – Heritage and Identities (Communities in Canada, Past and Present)
- Health and Physical Education – Living Skills (Healthy Living, Active Living, Movement Competence: Skills, Concepts, and Strategies)

The Learning Expectations description in the Festival Activities and the Curriculum section of this guide suggests, in active terms, ways to have students show that they know the various concepts involved in the various activities. Each grade level and class will have differing 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. The follow-up work can then focus on assessing the change in knowledge and values after the Festival Day.

Follow-up activities might involve:

- **Enter the "Big Splash Contest"!** Have your students come up with ways they have learned and are inspired to be Water Heroes, conserving and protecting water. Post these at waterheroes.ca or email them to the Festival Coordinator at splash@waterheroes.ca. The school that enters the most "Water Hero" ideas will be presented with the Big Splash Trophy with their name engraved onto it and will host at their school until the next year's Festival! We also have prizes such as coupons from Kawartha Dairy for the class which sends in the most responses, and for the individual students who register the most significant actions they have taken to improve their water stewardship this year. The contest runs from the festival through to the beginning of March. We are hoping that your classes will come back from the festival inspired as leaders and help others in their school to participate! More supporting materials will be sent in follow-up to the Festival.

- Allowing each group of students' time to prepare and present a report to the class, or others on what they saw, did and learned on Festival Day. The same groups of five from Festival day can be used for such an assignment or you can divide these groups further 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, as a quiz or as a True/False list. Share this with us by sending the results to the Festival coordinator!

- 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 is a great way to accomplish this.

- Choose some "big ideas" from the Festival and have students create posters or magazine-style advertisements to put up around the school.

Information about the effectiveness of various activities at the Festival is essential to help organizers adapt and improve the Festival elements and create an even more educational event next year. ***Please make a point in visiting "The Soap Box"*** at the Festival, an activity centre dedicated to you, your adult supervisors and your students for providing input on-site. In addition, p**lease consider sending in photos of relevant student work in follow-up and/ or a photo collage along with the feedback form we'll email.** Send to the Festival Coordinator, Kara Mitchell at splash@waterheroes.ca , it is good for us to hear!

Expanding the Festival

As we mentioned, 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 the Festival Day.

To expand the event into a larger unit involves a bit more planning and preparation, and allows you 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. Mathematic 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 lesson plans and further suggestions on how to involve your class further with the Water theme. We're always looking to update this list ~ if you've found any great ones, do share with us so we can with others !

Ideas to get you going:

- Use activities from the HMKCWF Teacher's Resource Guide (available at; http://www.hmwaterfestival.ca/teachers/)
- Have a local water expert from the community visit your class
- Prepare a Water Cycle chart and explain the stages
- Create a video about some aspect of water
- Go on a hike and spot examples of water damage - natural or man-made
- Create a map of the area and sketch out the watershed nearby
- Create a list of materials that may enter the storm sewer system from students' homes and yards
- Study Native water legends and mythologies or water legends and myths from foreign lands
- Develop a resolution to conserve water and have it signed by the Principal and have it announced to the school community

- Create posters and displays throughout the school with tips on how to conserve water
- Study the source of your students' water supply and investigate any possible sources of contaminants
- Study an animal or aquatic species, its habitat and how it uses water

Resources

Books

- **The Amazing Water Book.**
  Deborah Seed: Kids Can Press. ISBN 1550740032
- **We are Water Protectors**
  by Carole Lindstrom, (Illustrator; Michaela Goade. Roaring Books Press ISBN 978-1-250-20355-7
- **Eathcycles and Ecosystems.**
  Beth Savan. Toronto: Kids Can Press. ISBN 155074013Y
- **A Primer on Fresh Water: Environmental Citizenship Freshwater Series.**
  Environment Canada. (Reference only) ISBN 0662287651
- **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
- **The Water Sourcebook, Grades 3-5.**
  Tennessee Valley Authority: The Water Environmental Association.
- **The Greenpeace Book of Water.**
  Klaus Lanz. Sterling Publications. ISBN 0806942126
- **Down The Drains: Water Use and Pollution.**
  Barbara James. ISBN 0750201940
- **A Drop of Water: A Book of Science and Wonder.**
  Walter Wick. Scholastic Press. ISBN 0590221973
- **Where Does Water Come From?**
  C. Vance Cast. Barron's Educational Series. ISBN 0812046420
- **The Health of Our Water: Toward sustainable agriculture in Canada.**
  Agriculture and Agri-Food Canada, Research Branch. ISBN 0662284895

Ministry of Education Curriculum Units

Available online at www.edu.gov.on.ca **or** www.ocup.org

Videos & Periodicals

- **Wake up, Freddy.**
  Bullfrog Films. Video 21 minutes. Grades 2-7. 1994, with Study Guide. Produced by Christopher O'Donnell.
  Freddy wakes up to the sound of his blaring alarm. In an amazing camera journey, we follow the path energy takes to get to Freddy's house and to power his alarm. When Freddy takes his morning shower, we see where the water comes from and how it travels through the pipes and processed stations all the way to Freddy's showerhead. Then we watch the used water wash down Freddy's drain. Guess where we go next!
  Bullfrog Films: Box 149, Oley, PA, USA, 19547. Phone (610) 779-8226. Call TOLL FREE (800) 543-FROG (3764) or FAX (610) 370-1978. Email: bullfrog@igc.apc.org

- **Journey of the Blob.**
  Bullfrog Films. Video. 10 minutes. Grades P-6. ISBN: 0-7722-0243-5. (see above for ordering info) Also part of the Look Again Series (see below)
  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 consequences of our decisions.

- **Look Again Series. (Various parts).**
  Video, 56 minutes. Grades P-6. With Teachers Guide. Produced by the National Film Board of Canada, Six Films by Bill Maylone.
  All children want to make sense of the world around them. The 6 films without dialogue build upon and develop children's natural interest in their surroundings.

- **Planet Earth: Caring for our Environment.**
  Video 28 minutes. Ordering number 9191 175. Produced by the National Film Board of Canada.
  This film illustrates the water cycle while raising questions about environmental responsibility and the consequences of our decisions.

- **Water Supply in Canada: How water is supplied.**
  Video, 20 minutes. Classroom video, Burnaby, BC.
  Discusses how water is supplied and its domestic, industrial and agricultural uses. Examines the benefits and costs of dams, effects on migration of mammals and fish, and the river downstream.

- **Water Works.**
  Video, 27 minutes. Porpoise Bay Productions, 1991.
  A look a the Great Lakes basin, its origins and characteristics, all looked at through informative field trips.

- **Acid Rain.**
  Video, 30 minutes. Schlessinger Video Productions.
  The causes of acid rain and its effect on land forms, soil, crops, lakes, animals and humans are explained. The state legislation (1993) and other measures taken to minimize the damage of acid rain are also discussed.

Resources 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 http://www.awwa.org.

Consumer Information and Education

Fact Sheets:
Chlorination of Drinking Water
The facts about Bottled Water and Home Water Treatment Devices

Bill Stuffers

- Do You Know How Often You Turn Me On?, http://www.awwa.org/store/productdetail.aspx?productid=7454
- How Low Can You Flow? Water Conservation at Home, http://www.awwa.org/store/productdetail.aspx?productid=22189
- Water Conservation at Home ,http://www.awwa.org/store/productdetail.aspx?productid=7384
- Surprise! Don't Let Cold Weather Catch You Unprepared, http://www.awwa.org/store/productdetail.aspx?productid=7410
- Disaster Preparedness: Storing Water for Emergencies, http://www.awwa.org/store/productdetail.aspx?productid=7429
- Is Your Tap Water Safe?, http://www.awwa.org/store/productdetail.aspx?productid=23637
- How Water Works, Home Leak Detection, http://www.awwa.org/store/productdetail.aspx?productid=26864
- Who Knew? Fascinating Facts About Water, http://www.awwa.org/store/productdetail.aspx?productid=22187
- H2O, The Original Health Drink, http://www.awwa.org/store/productdetail.aspx?productid=22188
- Slow the Flow--Tips to Conserve Water in Your Lawn and Garden, http://www.awwa.org/store/productdetail.aspx?productid=22190
- Only Tap Water Delivers, http://www.awwa.org/store/productdetail.aspx?productid=7453
- Go Ahead, Call Me Cheap, http://www.awwa.org/store/productdetail.aspx?productid=7449
- I'm Not So Easily Replaced, http://www.awwa.org/store/productdetail.aspx?productid=7455
- Preventing Wasted Water in Your Home, http://www.awwa.org/store/productdetail.aspx?productid=7437
- Household Guide to Water Conservation, http://www.awwa.org/store/productdetail.aspx?productid=7439
- Go Green with a Water-Smart Lawn, http://www.awwa.org/store/productdetail.aspx?productid=26863
- Backflow Prevention is a Two-Way Proposition, http://www.awwa.org/store/productdetail.aspx?productid=27931787
- Would You Drink That?, http://www.awwa.org/store/productdetail.aspx?productid=27932668
- Make Safe Drinking Water Your Business!, http://www.awwa.org/store/productdetail.aspx?productid=27932688
- The Water Cycle, http://www.awwa.org/store/productdetail.aspx?productid=26865
- Sea Life Stickers, http://www.awwa.org/store/productdetail.aspx?productid=25737

- How Water Works, a Typical Water System, http://www.awwa.org/store/productdetail.aspx?productid=26862
- Safeguarding Our Drinking Water Supply, http://www.awwa.org/store/productdetail.aspx?productid=7382
- I Want to Be Here for You, http://www.awwa.org/store/productdetail.aspx?productid=7450
- Pharmaceuticals in Your Drinking Water? What You Should Know, **http://www.awwa.org/store/productdetail.aspx?productid=7451**
- Endangered Animals Stickers, http://www.awwa.org/store/productdetail.aspx?productid=7445
- Wild Animal Stickers, http://www.awwa.org/store/productdetail.aspx?productid=7390

Youth Education

- **Splash! Activity Book.**
  Colouring book with water related work and number games
- **Water Magic – Water Activities for Students and Teachers (Grades K-3)**
  23 hands-on activities that address various objectives
- **Water Fun for you – Colouring Book.**
  Drinking water themed activities including colouring pages, crossword puzzles and word games

Compact Discs

- **Aqua Venturer**
  Water Environment Federation.
  To Order: WEF public education products call 1-800-666-0206
  Learn the story of water, its treatment, its use throughout history and its importance to life on Earth.
- **Introduction to Aquatic Environments**
  Department of Zoology, University of Guelph.
  2 Discs covering info about rivers, lakes, chemistry, physical, food webs and plants, benthos, zooplankton, fish, toxics, biodiversity/exotic species.
- **Great Lakes Explorer: Biodiversity**
  Department of Zoology, University of Guelph.
  Students can explore issues relating to biological diversity in the Great Lake. They can participate in expeditions to 44 sites to sample fish. Learn how pollution, habitat and geography affects biological diversity.
- **Mission: Acid Rain.**
  University of Guelph. Contact: aquatic@uoguelph.ca
  Learn how to measure pH, collect animals and take rock samples and see how acid rain affects ecosystems. And See how you can stop acid rain.
- **Ontario's Living Legacy.**
  Ontario's Ministry of Natural Resources.
  Contact: http://www.ontarioslivinglegacy.com, 1-877-727-7701.
  Information about Ontario's Provincial Parks
- **Amphibians, Reptiles and Mammals of the Great Lakes:**
  The Great Lakes Faunal Atlas.
  Department of Zoology, University of Guelph. Contact: aquatic@uoguelph.ca
  Learn about amphibians, mammals and reptiles while enjoying an interactive, multimedia experience that includes photographs, sound and animations.

Water and Environment Website Links for Kids & Teachers

- **Freshwater Website – Environment Canada**
  http://www.ec.gc.ca/water/index.htm
  Contains information about the nature of water and management. Site has good teacher's corner and a large list of publications.

- **Great Lakes Information Network**
  http://www.great-lakes.net
  Information about life in and around the Great Lakes. Teacher resources provide quizzes, mini lessons on Great Lake topics. U.S and Canadian partnership.

- **Envirozine – Environment Canada's Online Newsletter**
  http://www.collectionscanada.gc.ca/eppp-archive/100/202/301/science_environ-e/html/2001/07-08/home_e.cfm.html
  Discusses different environmental issues each week

- **Canadian Water Resources Association**
  http://www.cwra.org
  An organization for individuals and organizations interested in the management of Canada's water resources.

- **Adopt-A-Pond**
  http://www.torontozoo.com/adoptapond/
  A wetland conservation program operating out of the Toronto Zoo that allows people and groups to adopt a pond.

- **Otonbee Region Conservation Services**
  http://www.otonabee.com

- **Peterborough Utilities Services**
  http://www.puc.org
- **Waterfront Regeneration Trust**
  http://www.waterfronttrail.org
  A southern Ontario ENGO that organizes projects designed to enhance the Lake Ontario shoreline on the Canadian side.

- **Ontario Clean Water Agency**
  http://www.ocwa.com

- **Lifewater Canada**
  http://www.lifewater.ca
  Donations and volunteering overseas on water-based projects.

- **Watershed Science Centre**
  http://www.trentu.ca/wsc
  Information about watershed research.

- **Water – Ministry of the Environment**
  http://www.ene.gov.on.ca/water.htm
  Information on various water-related issues, including wells, conservation, drinking water monitoring, the Great Lakes and more.

- **Project Wet**
  http://hctfeducation.ca/product/project-wet/
  A Canadian program to promote the appreciation and knowledge of water resources in the classroom.

- **Water Survey of Canada**
  http://www.ec.gc.ca/rhc-wsc/

National water quantity survey. Looks at water-related issues facing various provinces

- **Water Environmental Association of Ontario**
  http://www.weao.org
  An organization for technical and professional individuals.

- **U.S Environmental Protection Agency**
  http://www.epa.gov/kids or http://www.epa.gov/teachers
  Kids' site has online activities. Teachers' site has information such as curriculum ideas and other links.

- **Waterweb**
  http://www.waterweb.org
  A consortium listing water-related and environmental websites in Canada and internationally.

- **University of Wisconsin Extension Programs,**
  Environmental Resources Education Site
  http://www.uwex.edu/erc/ywc
  Educating Young People About Water. Has links to curriculum materials and ideas.

- **The Groundwater Foundation (USA)**
  http://www.groundwater.org/
  Site for kids with activities and info.

- **Water Science for Schools, U.S Geological Survey**
  http://education.usgs.gov/
  General information for kids and teachers, as well as online activities.

- **American Water Works Association**
  http://www.awwa.org

- **Great Lake Information Management**
  https://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=BB02C773-1
  Resource - Kids resources

- **Canada's Aquatic Environments**
  http://www.aquatic.uoguelph.ca
  Promotes awareness of aquatic ecosystems

- **Ducks Unlimited Canada**
  http://www.ducks.ca/

- **Canadian Centre for Inland Waters- Water research in the Great Lakes**
  https://www.ec.gc.ca/inre-nwri/

- **RiverSides Stewardship Alliance-Acts to facilitate behavioural attitudes**
  http://www.riversides.org

- **Ontario Streams-Stream restoration information and education**
  http://ontariostreams.on.ca

- **The Veins of Life Watershed Society**
  Environmental Education and Outreach activities
  http://www.salishsea.ca/

- **Conservation Ontario- Network of 38 conservation Authorities**
  http://www.conservation-ontario.on.ca

- **Ontario Ministry of Natural Resources- Water Management and planning**
  http://www.mnr.gov.on.ca/mnr/water

- **Water Environment Federation – Dedicated to water preservation and enhancement**
  http://www.wef.org/awk/default.aspx

- **Water Use It Wisely**
  http://www.wateruseitwisely.com/game
  Incorporates water conservation tips into a memory game