



Haliburton-Muskoka
**children's
water
festival**

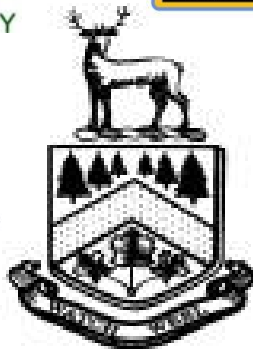
2011

Teacher's Planning Guide

Many thanks to ...



www.kawarthacu.com



EH!



Friends of Ecological and Environmental Learning



Haliburton-Muskoka children's water festival

September 2, 2011.

Dear Educators,

Welcome to the seventh annual Haliburton-Muskoka Children's Water Festival (HMCWF)! This active outdoor community event raises awareness on the importance of water, one of our most valuable natural resources, and inspires good water stewardship in our youth. This year's festival has 40 learning stations that are designed to be hands-on, stimulating and fun, encouraging further understanding of water concepts taught through the school curriculum. Students "soak up" these messages on water conservation, technology, protection and science and come to understand that their attitude towards water does matter and that their actions do make a difference.

This year we are pleased to introduce the HMCWF Teacher's Resource Kit containing activities for you to take back to your class and utilize as an extension of the festival and to further enhance water education. Some of these water based activities are suited for "in-class" use while others are meant to engage your students within your community. These activities include background information, links to the curriculum and additional resources. It is our hope that this kit will help you extend and draw upon your students' experiences at the Haliburton-Muskoka Children's Water Festival. This kit, along with all HMCWF documents can be downloaded at our website, www.hmwaterfestival.ca. Enjoy and please remember that we would appreciate your comments, and some photos!

The Haliburton-Muskoka Children's Water Festival Committee considers you an important partner in this educational event and we thank you for making the festival a part of your class planning. We appreciate your constructive insights on new ways we can present key curriculum messages to your students and urge you to share them with us. Together we will continue to allow youth to explore and "experience" the importance of water to encourage responsibility in maintaining healthy water systems for healthy living, now and for the future.

We are proud to present this Teachers' Planning Guide which will help you and your students get the most out of the Haliburton-Muskoka Children's Water Festival. This guide not only provides details for you but represents a record of the tremendous effort that our committee has put into organizing an event of this scale and quality. Thank you for being a partner and thank you to all who have made the 2011 Haliburton-Muskoka Children's Water Festival possible.

Yours truly,



Irene Heaven, Festival Coordinator
2011 Haliburton-Muskoka Children's Water Festival



2011 Supporters
Together we are making a splash!

Ocean

County of Haliburton
RBC Foundation

Lake

Kawartha Credit Union
Children's Water Education Council (MOE)
RBC Blue Water Project

River

Haliburton Highlands Stewardship Council
Ontario Wildlife Foundation

Stream

City of Kawartha Lakes
Dorset Environmental Science Centre (MOE)
Orillia Power Distribution Corporation
Parry Sound-Muskoka Stewardship Network
Thea Patterson

Brook

Bracebridge Generation Limited
Haliburton & District Lions Club
Kawartha Dairy Ltd.
Kinsmen Club of Minden
Royal Canadian Legion Branch 67, Lindsay
Victoria Land and Water Stewardship Council

Sponsor an Activity Station

Rotary Club of Minden
Rotary Club of Haliburton

In-Kind

Abbey North
Baha'I of Haliburton and G. Wymen
Bancroft Stewardship Council
Carnarvon Castle True Value
Dorset Environmental Science Centre (MOE)
Emmerson Lumber Rent-All Division
Environment Haliburton
Fleming College, Lindsay Campus
Friends of Ecological and Environmental Learning (FEEL)
Gaming Nature Centre
Haliburton County Emergency Medical Services
Haliburton Highlands Stewardship Council
Haliburton Highlands Water Trails
Haliburton Home Hardware
John Proctor, Earth Tones Studio
Kawartha Conservation
Kawartha Turtle Trauma Centre
Kinark Outdoor Centre
Let's Talk Science
Moose Lake Ontario Rangers
Muskoka Watershed Council
Ontario Federation of Anglers and Hunters
Ontario Parks
Ontario Provincial Police
Ontario Ministry of Natural Resources
Out to Learn
Parks Canada/Trent-Severn Waterway
National Historical Site of Canada
Province of Ontario
Rails End Gallery
Todd's Independent Grocer
Toronto Zoo
Township of Algonquin Highlands
Township of Minden Hills
Trent University
Tillium Lakelands District School Board
U-Links Centre for Community Research
Water Depot

... Thank You!



Table of Contents

Introduction	5
Learning in Context	5
Our Objectives	6
At the Water Festival	6
Conclusion	7
Getting Ready for the Festival	8
On the Day of the Festival	9
2010 Haliburton-Muskoka Children's Water Festival Itinerary	10
Teachers Notes	11
Thematic Overview of Activity Centres	12-13
Activity Centre Map at the Kinark Outdoor Centre	14
2010 Haliburton-Muskoka Children's Water Festival Activity Centre Information ...	15-36
Water Conservation Activity Centres	15
Water Attitudes Activity Centres	19
Water Technology Activity Centres	22
Water Protection Activity Centres	24
Water Science Activity Centres	33
Planning for and around the Festival	38
Assessment	38
Follow-up activities might involve	38
Expanding the Festival	39
Ideas to get you going	40
Teacher Resources	41-48

Introduction

The Haliburton-Muskoka 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 75 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 – water to grow food, water to drink, water to wash with, and water for travel and recreation, on and around. 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 Freshwater Website, www.ec.gc.ca .

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, as individuals we will make a commitment to use natural resources wisely.

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 further study back at school

At The Water Festival

The Haliburton-Muskoka 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 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 wonderful outdoor setting which help put an emphasis on the ecological connections.

We look forward to seeing you and your students at the 2011 Haliburton-Muskoka 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**. Please ensure the groups are no larger than five students for supervision and safety reasons.
- ◆ Assign **one** adult supervisor to each group of **five** students. Children requiring medical attention (administering medication, epilepsy, special physical needs, etc.) should be in a group supervised by the teacher, or by their parent/guardian. If you have trouble recruiting enough parent volunteers, please let the Water Festival Coordinator know prior to the day you are attending, and additional volunteers may be arranged.
- ◆ 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 media coverage at the Festival, any students who are not to be photographed or interviewed should be pointed out to the adult supervisor. Proper name spellings of students able to be photographed or interviewed should also be available. **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 10 of this guide) to all adult supervisors. We suggest that you mix the order of activity centres listed on the itinerary amongst the adult supervisors and start each group at a different activity to reduce congestion at the activity centres and maximize learning time.
- ◆ Read the description for each activity. 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.
- ◆ Encourage everyone to bring **'litterless' lunches and snacks**, there will be no place on site to purchase lunches or snacks. Encourage students to bring **reusable water bottles**, several water coolers will be available around the site to fill up their bottles.

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.

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 is a good idea!
2. Upon your arrival at the Kinark Outdoor Centre, please have all students remain on the bus until you receive instructions for the day and a site map from a Festival Host.
3. Check that everyone knows when and where to meet the bus for return to your school. Give your school bus driver a sign with your school's name on it so you can easily identify your bus among the many in the parking lot at the end of the day.
4. 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.
5. 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.
5. **Lunch and entertainment are scheduled from 11:30 a.m. to 12:30 p.m.** All activities will stop during this time and during lunch activities the management of students are the teachers and adult supervisors' responsibility. Lunch will be **located in the Student Lunch Tents by the Baseball Diamond.**
6. You can identify Festival staff and volunteers by their grey coloured T-shirts which have the Haliburton-Muskoka Children's Festival logo on the front. Festival Organizers will be wearing yellow Festival T-shirts. 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 Children's Water Festival puts safety first. A First Aid station, operated by Haliburton County Emergency Medical Service, is situated at the Nova Centre (where you register). **If any of your students or adult supervisors have medical conditions (diabetes, epilepsy, severe allergies, etc.) please report to the First Aid station, located at the registration shelter (Nova Centre), and submit a written description of the person and the condition(s) before beginning your Festival visit.**
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 at the shelter 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.
10. The festival ends at 2:30 p.m. All activities will shut down at this time.

2011 Haliburton-Muskoka 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 and entertainment take place from 11:30 to 12:30 p.m at the designated lunch tent for students.

Students in your group are:

1. _____
2. _____
3. _____
4. _____
5. _____

Please make copies for you and your supervisors!

Thematic Overview of Activity Centres

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

For most of the activities we have attempted to include the most relevant learning expectations from the Ontario Curriculum. These lists of learning expectations are not exhaustive. By providing some of these learning expectations we intend to assist teachers in identifying activities which best suit their grade level and program. Some activities are described as 'open' to all grades because the visiting presenters have not identified specific Ontario Curriculum learning expectations.

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 several or all of the five themes and have identified one predominant theme to facilitate the focus or diversity of the itinerary.

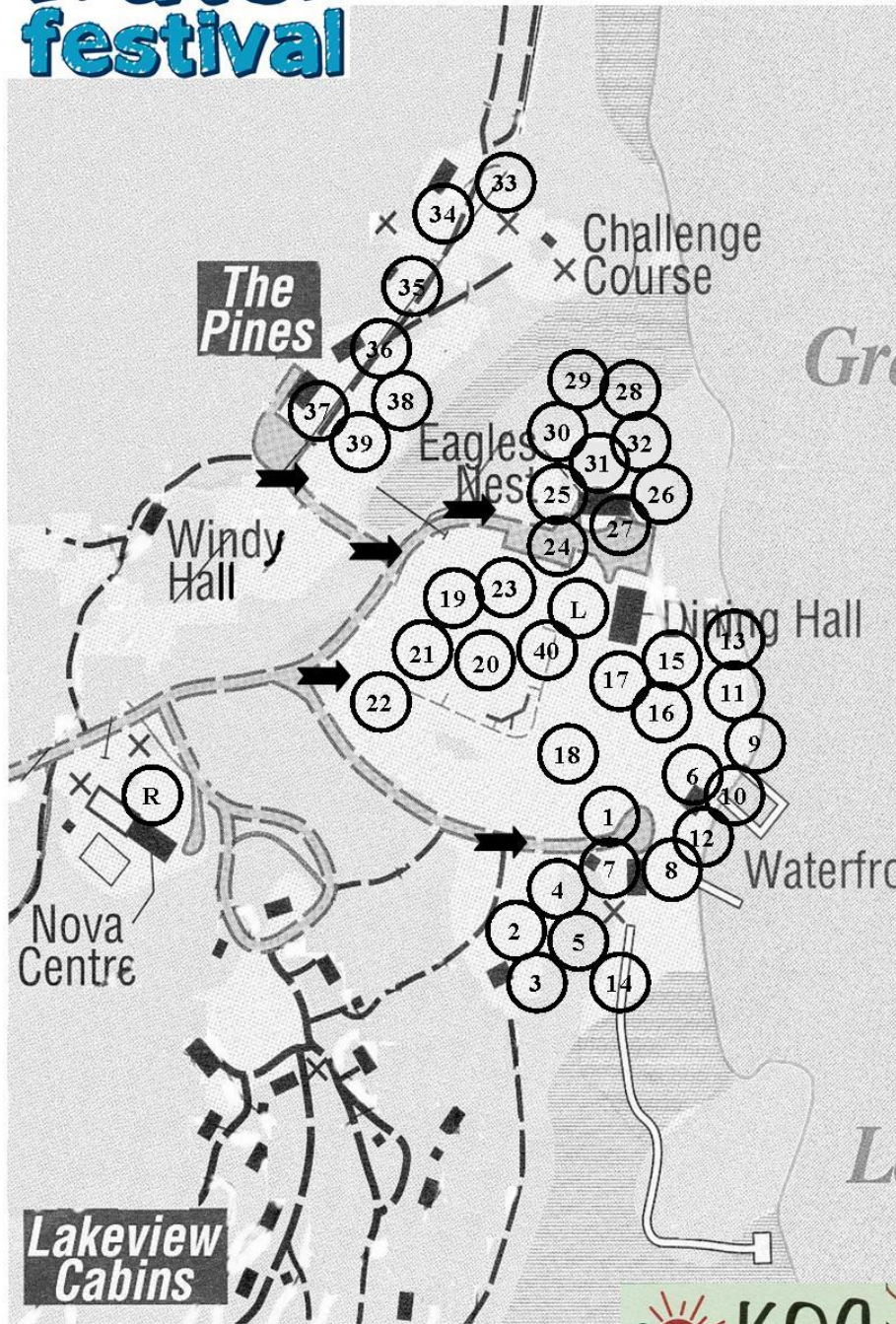
WC: Water Conservation **WA:** Water Attitudes **WT:** Water Technology **WP:** Water Protection **WS:** Water Science

Activity Centre	Theme	Location	Map #
Amazing Aquifer	WP	Eagle's Nest (Inside)	27
Bugs in the Mud	WP	Waterfront	9
Constructed Wetlands – Nature's Purifier	WT	Eagle's Nest (Inside Lower Level)	25
Creeks and Critters	WP	Waterfront	6
Grey is OK!	WC	Eagle's Nest (Inside Lower Level)	24
Haliburton Fire Crew	WC	Waterfront	8
How Clear is Your Lake?	WS	Waterfront	10
How Much Water Does It Take?	WT	Dining Hall (Outside)	15
How Wet is Our Planet?	WS	Dining Hall (Outside)	17
It's a Trout's Life	WP	Baseball Diamond Field	20
Just Dam It!	WP	The Pines	34
Lather Up!	WC	The Pines	35
Lay My Egg!	WP	Waterfront	14
Life on the Edge	WP	Waterfront	11
Low Impact Camping	WP	Challenge Course/The Pines	33
Migration Headache	WP	Baseball Diamond Field	21
Mother Nature's Respirator	WS	Waterfront	12
Municipal Wastewater Treatment	WT	The Pines	37
No Water Off A Duck's Back	WP	Eagle's Nest (Outside)	30
Ontario Provincial Police Marine Unit	WA	Baseball Diamond Field	22
Pioneer Water Race	WA	Baseball Diamond Field	23
Prey I Won't Get Eaten	WS	Eagle's Nest (Outside)	28
Reduce – Reuse – Recycle	WC	Eagle's Nest (Outside)	32
Reservoir Rendezvous	WC	Eagle's Nest (Outside)	29
Rolling Through the Shed	WP	Baseball Diamond (Hill Beside)	18
Septic Sights	WP	The Pines	36
Somethin' Fishy's Goin' On	WS	Waterfront	7
Stream Savers	WP	Eagle's Nest (Inside)	26
The Fish is Right	WA	Baseball Diamond Field	19

<i>NEW</i>	The Ribbon of Life	WS	Waterfront	13
	The Soap Box	WA	Baseball Diamond Field	40
	Three Times A Day	WC	Waterfront	2
	Turtle Trauma	WP	The Pines	38
	Unwelcome Guests	WP	Waterfront	4
	Up on the Watershed	WP	Eagle's Nest (Outside)	31
	Wash Out!	WA	Waterfront	1
	Water World	WS	Waterfront	3
	Wetland Discovery Trailer	WS	Waterfront	5
	Where Are All the Turtles?	WP	The Pines	39
<i>NEW</i>	Why So Porous?	WS	Dining Hall (Outside)	16



2011 Activity Centres Map



FESTIVAL ACTIVITIES

- R Registration and First Aid**
- 1. Wash Out!
- 2. Three Times A Day!
- 3. Water World
- 4. Unwelcome Guests!
- 5. Wetland Discovery Trailer
- 6. Creeks and Critters
- 7. Somethin' Fishy's Goin' On
- 8. Haliburton Fire Crew
- 9. Bug's in the Mud
- 10. How Clear is Your Lake?
- 11. Life on the Edge
- 12. Mother Nature's Respirator
- 13. The Ribbon of Life
- 14. Lay My Egg!
- 15. How Much Water Does It Take?
- 16. Why So Porous?
- 17. How Wet Is Our Planet?
- 18. Rolling Through the Shed
- 19. The Fish is Right!
- 20. It's a Trout's Life
- 21. Migration Headache
- 22. OPP Marine Unit
- 23. Pioneer Water Race
- 24. Grey Is OK!
- 25. Constructed Wetlands
- 26. Stream Savers
- 27. Amazing Aquifer
- 28. Prey I Wont Get Eaten!
- 29. Reservoir Rendezvous
- 30. No Water Off A Duck's Back
- 31. Up on the Watershed
- 32. Reduce—Reuse—Recycle
- 33. Low Impact Camping
- 34. Just Dam It!
- 35. Lather Up!
- 36. Septic Sights
- 37. Municipal Wastewater Treatment
- 38. Turtle Trauma
- 39. Where are all the Turtles?
- 40. The Soap Box
- L Lunch Tent for Students**
- ➔ Directional Signage**



2011 Haliburton-Muskoka 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, each activity has been matched to learning expectations of the Ontario Curriculum. You may wish to use this information to integrate the Festival experience with your classroom program.

The curriculum guidelines also allow you to determine which activities are priority for your class to visit, since some activities fit the curriculum differently for various grades.

In a later section, some ideas and activities provide you with things you can do in class before and after attending the Festival. We also hope that you use the newly created **HMCWF Teacher’s Resource Kit** which contains water challenges for your students that can be utilized within your classroom and your community. We hope your class’s visit to the Haliburton-Muskoka Children’s Water Festival will be a highlight of a larger program in your classroom this year!

Water Conservation Activity Centres

ACTIVITY	DESCRIPTION	LEARNING EXPECTATIONS
Grey is OK!	There are alternatives to sending all household water to a municipal wastewater facility. Students will learn how wetland plants can help in the purification process of water.	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Canada and World Connections, Grade 3 (Urban and Rural Communities)</i></p> <ul style="list-style-type: none"> ◆ Identify & compare distinguishing features of urban and rural communities ◆ Explain how communities interact with each other and the environment to meet human needs <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat

		<p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources <p>Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy</p>
<p>Haliburton Fire Crew</p>	<p>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.</p>	<p><i>Healthy Living, Grade 3 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ List safety procedures and practices in the home, school and community <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us <p><i>Heritage and Citizenship, Grade 3 (Pioneer Life)</i></p> <ul style="list-style-type: none"> ◆ Compare & contrast life in a pioneer settlement with that in their own community <p>Explain relevant safety procedures</p> <p><i>Healthy Living, Grade 4 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ Identify people and community agencies that can assist with injury prevention and emergency situations <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy <p><i>Healthy Living, Grade 6 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ Identify the responsibilities associated with caring for themselves and others <p><i>Fundamental Movements Skills, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Demonstrate the principles of movement while refining movement skills ◆ Perform a combination of locomotion/traveling skills using equipment
		<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us.

<p>Lather Up!</p>	<p>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.</p>	<p><i>Heritage and Citizenship, Grade 3 (Pioneer Life)</i></p> <ul style="list-style-type: none"> ◆ Compare & contrast life in a pioneer settlement with that in their own community (ex.: indoor plumbing, who would bring water from town well, etc.) ◆ Compare & contrast the lives of pioneer and present-day children of similar ages <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Heritage and Citizenship, Grade 4 (Medieval Times)</i></p> <ul style="list-style-type: none"> ◆ Compare aspects of life in a medieval community and their own community ◆ Make connections between social or environmental concerns of medieval times and similar concerns today <p><i>Heritage and Citizenship, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Demonstrate how innovations made by various early civilizations have influenced the modern world <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy ◆
<p>Reduce – Reuse – Recycle</p>	<p>In a game of relay and sorting, students learn symbolism and the importance of new recycling programs</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Heritage and Citizenship, Grade 3 (Pioneer Life)</i></p> <ul style="list-style-type: none"> ◆ Compare & contrast life in a pioneer settlement with that in their own community (ex.: indoor plumbing, who would bring water from town well, etc.) ◆ Compare & contrast the lives of pioneer and present-day children of similar ages <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Heritage and Citizenship, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Demonstrate how innovations made by various early civilizations have influenced the modern world

		<p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy <p><i>Fundamental Movements Skills, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Demonstrate the principles of movement while refining movement skills ◆ Perform a combination of locomotion/traveling skills using equipment
<p>Reservoir Rendezvous</p>	<p>Students will understand why lakes in the Haliburton Highlands are reservoirs for the Trent Severn Waterways. Using an interactive model of a watershed, the students learn the importance of water management and how it affects our watersheds, with a focus on transportation. Students will manipulate water levels in a watershed model in order to maintain safe boating within a water system.</p>	<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us ◆ Recognize devices that are controlled automatically, at a distance or by hand <p><i>Healthy Living, Grade 3 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ List safety procedures and practices in the home, school and community <p><i>Canada and World Connections, Grade 3 (Urban and Rural Communities)</i></p> <ul style="list-style-type: none"> ◆ Identify & compare distinguishing features of urban and rural communities ◆ Explain how communities interact with each other and the environment to meet human needs <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy <p><i>Heritage and Citizenship, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Demonstrate how innovations made by various early civilizations have influenced the modern world <p><i>Fundamental Movements Skills, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Demonstrate the principles of movement while refining movement skills ◆ Perform a combination of locomotion/traveling skills using equipment <p><i>Heritage and Citizenship, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Identify technological developments that assisted and promoted the exploration of North America

		<p><i>Canada and World Connections, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Identify some important international agreements in which Canada participates ◆ Identify Canada's connections with the United States through trade and technology (e.g. waterways)
<p>Three Times a Day</p>	<p>Students simulate daily household routines and evaluate the impacts of their everyday actions on the environment. They investigate the rate of water flow, discover simple home water saving technologies and hypothesize about the impacts these technologies have on the environment. In a simulation, students will have the opportunity to examine brushing their teeth and comparing water consumption using a variety of techniques. How much water can you save three times a day?</p>	<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us ◆ Recognize devices that are controlled automatically (e.g. timers, washing machines), at a distance or by hand (e.g. the flushing mechanisms on a toilet) <p><i>Healthy Living, Grade 3 (Healthy Eating)</i></p> <ul style="list-style-type: none"> ◆ Describe a variety of ways to prevent tooth decay <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Heritage and Citizenship, Grade 4 (Medieval Times)</i></p> <ul style="list-style-type: none"> ◆ Make connections between social or environmental concerns of the medieval times and similar concerns today (e.g. the spread of disease) <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy

Water Attitudes Activity Centres

ACTIVITY	DESCRIPTION	LEARNING EXPECTATIONS
<p>Ontario Provincial Police Marine Unit</p>	<p>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.</p>	<p>Water Safety and safe boating practices. Fun for all!</p> <p><i>Healthy Living, Grade 3 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ List safety procedures and practices in the home, school and community <p>Explain relevant safety procedures</p> <p><i>Healthy Living, Grade 4 (Personal Safety and Injury Prevention)</i></p> <ul style="list-style-type: none"> ◆ Identify people and community agencies that can assist with injury prevention and emergency situations

<p style="text-align: center;">Pioneer Water Race</p>	<p>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.</p>	<p><i>Heritage and Citizenship, Grade 3 (Pioneer Life)</i></p> <ul style="list-style-type: none"> ◆ Compare & contrast life in a pioneer settlement with that in their own community (with respect to services, jobs, schools, stores and use of natural resources) ◆ Identify early settlers and their origins, and describe their lives and contributions ◆ Describe the changes that occurred in their communities since the time of pioneers ◆ Explain how pioneers used natural resources (e.g.: water, forests, land) ◆ Describe the major components of a pioneer settlement ◆ Compare & contrast the lives of pioneers and present-day children of similar ages ◆ Collect and evaluate information about human and environmental interactions during the early settlement period <p><i>Heritage and Citizenship, Grade 4 (Medieval Times)</i></p> <ul style="list-style-type: none"> ◆ Compare aspects of life in medieval community and their own community ◆ Make connections between social or environmental concerns of medieval times and similar concerns today <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources
<p style="text-align: center;">The Fish is Right!</p>	<p>With the use of riddles, picture clues and a relay race, students will have fun familiarizing themselves with the different species of fish here in Ontario, and will appreciate that different species of fish rely on different habitats within a lake.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources

<p>The Soap Box</p>	<p>We want to hear from you! How do you feel about water ... what is your "attitude" towards water? This is a creative way to let us know about your experiences at the Haliburton-Muskoka Children's Water Festival.</p>	
<p>Up on the Watershed</p>	<p>Students investigate the importance of water management in a watershed by using funnel models, seeing the effects that dams, wetlands, etc. have on the water cycle</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Canada and World Connections, Grade 3 (Urban and Rural Communities)</i></p> <ul style="list-style-type: none"> ◆ Identify & compare distinguishing features of urban and rural communities ◆ Explain how communities interact with each other and the environment to meet human needs <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy

<p style="text-align: center;">Wash Out</p>	<p>Using a model, students will follow the path of water to understand how water movement can change the landscape and how destructive water properties can be for communities near watersheds.</p>	<p><i>Life Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which plants are important to other living things, and the effects of human activities on plants. ◆ Describe ways in which humans can protect natural areas to maintain native plant species (e.g. establishing conservation areas, wildlife reserves, wetlands sanctuaries). <p><i>Earth and Space Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the similarities and differences between various soils and the effects of moving water on soils. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Earth and Space Systems, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the physical properties of rocks and minerals and the effects of erosion on the landscape. ◆ Describe the effects of human activity (e.g. land development, building of dams, mine development, erosion-preventing measures) on physical features of the landscape, and examine the use of rocks and minerals in making consumer products. ◆ Identify ways in which soil erosion can be controlled or minimized (e.g. by planting trees, by building retaining walls).
---	---	--

Water Technology Activity Centres

ACTIVITY	DESCRIPTION	LEARNING EXPECTATIONS
<p>Constructed Wetlands – Nature’s Purifier</p>	<p>Using a model, students will come to understand different methods of treating waste water which don’t include harmful chemicals or expensive facilities. Nature has a way of taking care of pollution and waste, these are wetlands.</p>	
<p>How Much Water Does It Take?</p>	<p>Comparing common consumable products, students learn how water is</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Heritage and Citizenship, Grade 3 (Pioneer Life)</i></p> <ul style="list-style-type: none"> ◆ Compare & contrast life in a pioneer settlement with that in their own

	<p>used in product development, the various stages of productions involved in many items, and how much and when water can be consumed in product development.</p>	<p>community (ex.: indoor plumbing, who would bring water from town well, etc.)</p> <ul style="list-style-type: none"> ◆ Compare & contrast the lives of pioneer and present-day children of similar ages <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats <p><i>Heritage and Citizenship, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Demonstrate how innovations made by various early civilizations have influenced the modern world <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>Municipal Wastewater Treatment Plant</p>	<p>A model of a municipal wastewater treatment plant showing how it works and what can be treated and what cannot be treated.</p>	<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Earth and Space Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the similarities and differences between various soils and the effects of moving water on soils. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Describe ways in which humans can affect the natural world <p><i>Earth and Space Systems, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Describe the effects of human activity (e.g. land development, building of dams, mine development, erosion-preventing measures) on physical features of the landscape, and examine the use of rocks and minerals in making consumer products. ◆ Recognize devices that are controlled automatically (e.g. timers, washing machines), at a distance or by hand (E.g. the flushing mechanisms on a toilet) <p><i>Energy and Control, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy ◆ Identify design features that improve the energy efficiency of buildings, devices, and systems <p><i>Life Systems, Grade 5 (Human Organ Systems)</i></p>

		<ul style="list-style-type: none"> ◆ Identify types of industries involved in the processing and preserving of foods ◆ Describe ways in which various kinds of organisms (e.g. Bacteria, fungi) are used to recycle human waste ◆ Explain how the health of human beings is affected by environmental factors ◆ Explain the benefits and disadvantages of using some technological innovations <p><i>Life Systems, Grade 6 (Diversity of Living Things)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate the interrelationships among living things
--	--	--

Water Protection Activity Centres

ACTIVITY	DESCRIPTION	LEARNING EXPECTATIONS
The Amazing Aquifer	Investigate the sources of groundwater, how it travels through the earth, and how it is extracted for our use. Students will also find out how pollutants affect our groundwater and how pollution can be prevented. Students use oral descriptions to pose questions, make predictions and relay their observations.	<p><i>Canada and World Connections, Grade 3 (Urban and Rural Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe some possible relationships between communities and natural environments ◆ Describe ways in which they and their families use the natural environment ◆ Compare the characteristics of their community to those of a different community ◆ Describe ways in which people interact with other communities <p><i>Earth and Space Systems, Grade 3 (soils in the environment)</i></p> <ul style="list-style-type: none"> ◆ Investigate the components of various soils and describe the effects of moving water on these soils ◆ Demonstrate an understanding of these similarities and differences between various soils and the effects of moving water on soils <p><i>Canada and World Connections, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Identify Ontario's major natural resources and their uses and management ◆ Identify the physical regions of Ontario and describe their characteristics (e.g. Canadian Shield)
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,	<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p>

	<p>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.</p>	<ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>Bugs in the Mud</p>	<p>Discover the strange creatures living in the Benthic Zone! Staff from the MOE will help you find and identify bugs that are important indicators of your lakes health.</p>	<p><i>Earth and Space Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Identify living things found in the soil (e.g. roots, earthworms, larvae) <p><i>Life Systems, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them <p><i>Life Systems, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of ways in which classification systems are used to understand the diversity of living things and the interrelationships among living things ◆ Identify and describe the characteristics of invertebrates, and classify invertebrates into phyla ◆ Compare & contrast vertebrates and invertebrates ◆ Describe microscopic living things using appropriate tools to assist them with their observations ◆ Describe ways in which micro-organisms meet their basic needs ◆ Identify various kinds of plant or animal organisms in a given plot ◆ Describe specific characteristics or adaptations that enable each group of vertebrates to live in its particular habitat, and explain the importance of maintaining that habitat for the survival of the species
<p>Rolling Through the Shed</p>	<p>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.</p>	<p><i>Earth and Space Systems, Grade 4 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of

		<p>these changes on the plants and animals within the habitats</p> <ul style="list-style-type: none"> ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>It's a Trout's Life</p>	<p>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.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources
<p>Just Dam It!</p>	<p>This station allows students to get a hands-on approach to beaver dam</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste

	<p>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. Through props and discussion, various adaptations which allow the beaver to create and maintain its aquatic lifestyle will be explored.</p> <p>PLEASE NOTE: In response to popular demand, there will be two model activity centres available to accommodate the students.</p>	<p>water can affect our health and the health of other living things</p> <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy <p><i>Heritage and Citizenship, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Describe the attitude to the environment of various First Nations groups and show how it affected their practices in daily life ◆ Explain the reasons for the Viking, French and English explorer’s journeys (fur trade) ◆ Describe the expansion of European influence through the founding of the first trading posts and explain how the fur trade served the interests of both Europeans and the First Nations peoples
--	---	---

<p>Lay My Egg!</p>	<p>The purpose of this station is to help students become more aware of the variety of birds which utilize water bodies and to emphasis that many of</p>	
--------------------	--	--

	<p>these birds require different types of habitat for other stages of their lifecycle, such as nesting. Working in small groups or in pairs, students will learn some general habits and characteristics of some common water birds found in the Haliburton area. Students will also get some identification skills through life sized bird profiles and photos (optional) as well as an opportunity to link these birds to their preferred nesting habitat with true to size and colour eggs.</p>	
<p>Life on the Edge</p>	<p>Students will realize the diversity of species in a natural shoreline ecosystem through a counting exercise. The students will count the different types of plants, animals that they find in sectioned off areas. Students will see the dramatic difference between the number of species found at natural shorelines versus non-shorelines and shorelines which have been affected by human impact.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources

		<ul style="list-style-type: none"> ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy <p><i>Life Systems, Grade 6</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of ways in which classification systems are used to understand the diversity of living things and the interrelationships among living things ◆ Identify and describe the characteristics of invertebrates, and classify invertebrates into phyla ◆ Compare & contrast vertebrates and invertebrates ◆ Describe microscopic living things using appropriate tools to assist them with their observations ◆ Describe ways in which micro-organisms meet their basic needs ◆ Identify various kinds of plant or animal organisms in a given plot ◆ Describe specific characteristics or adaptations that enable each group of vertebrates to live in its particular habitat, and explain the importance of maintaining that habitat for the survival of the species
<p>Low Impact Camping</p>	<p>Employees/Volunteers with the Haliburton Highlands Water Trails will be on site to demonstrate low impact camping techniques when camping near or on the water.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources

		<ul style="list-style-type: none"> ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
Migration Headache	Kinark Outdoor Centre will provide this fun activity where 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.	
No Water Off A Duck's Back	Students take the role of wildlife biologists observing feathers when they are wet, dry or soaked in oil and giving oral descriptions of their observations. Students are encouraged to think about ordinary actions, such as pouring used oil or other contaminants down road sewers or household drains and how these could cause pollution, which endangers wildlife habitats and damages ecosystems.	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them (ex: ducks live in water bodies such as marshes because they need food and shelter provided there and water for movement) ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat (e.g. ducks will not be able to float, swim or maintain their proper body temperature if their feathers are altered due to pollution, they also lose their natural habitat and will die)
Septic Sights	How does a toilet work? Students examine how the mechanism in an ordinary household device works and determine the appropriate way to dispose of common household items. Watch water trickle through the sewage pipes into the septic bed in a rural wastewater scenario. Where do the wastewater and solid wastes go if one is not connected to the municipal wastewater system?	<p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us ◆ Recognize devices that are controlled automatically (e.g. timers, washing machines), at a distance or by hand (E.g. the flushing mechanisms on a toilet) <p><i>Earth and Space Systems, Grade 3 (Soils in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Recognize the dependence of humans on soil <p><i>Earth and Space Systems, Grade 4 (Rocks, Minerals and Erosion)</i></p> <ul style="list-style-type: none"> ◆ Describe the effects of human activity on physical features of the landscape, and examine the use of rocks and minerals in making

		<p>consumer products <i>Heritage and Citizenship, Grade 4 (Medieval Times)</i></p> <ul style="list-style-type: none"> ◆ Compare aspects of life in medieval community and their own community ◆ Make connections between social or environmental concerns of medieval times and similar concerns today <p><i>Energy and Control, Grade 5</i></p> <ul style="list-style-type: none"> ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy ◆ Identify design features that improve the energy efficiency of buildings, devices, and systems
<p>Unwelcome Guests</p>	<p>Students learn how invasive species are introduced into water systems and the potential impact invasive species have on one aquatic habitat.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy

<p style="text-align: center;">Turtle Trauma</p>	<p>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.</p>	<p><i>Life Systems, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the concepts of habitat and community, and identify the factors that could affect habitats and communities of plants and animals ◆ Investigate the dependency of plants and animals on their habitat and the interrelationships of the plants and animals living in a specific habitat <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources
<p style="text-align: center;">Stream Savers</p>	<p>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.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Life Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which plants are important to other living things, and the effects of human activities on plants. ◆ Describe ways in which humans can protect natural areas to maintain native plant species (e.g. establishing conservation areas, wildlife reserves, wetlands sanctuaries). <p><i>Earth and Space Systems, Grade 3</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the similarities and differences between various soils and the effects of moving water on soils. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Earth and Space Systems, Grade 4</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the physical properties of rocks and minerals and the effects of erosion on the landscape. ◆ Describe the effects of human activity (e.g. land development, building of dams, mine development, erosion-preventing measures) on physical features of the landscape, and examine the use of rocks and minerals in making consumer products. ◆ Identify ways in which soil erosion can be controlled or minimized (e.g. by planting trees, by building retaining walls).

<p>Where are all the Turtles?</p>	<p>The Kawartha Turtle Trauma Centre is a registered charity in Peterborough that provides veterinary and rehabilitative care to injured native turtles to eventually release them back into their natural habitat. With seven of the eight species of Ontario turtles now listed as "Species at Risk", KTTC also provides a public education program to promote turtle conservation and stewardship. Learn all about turtles and why there aren't as many as there used to be!</p>	
--	---	--

Water Science Activity Centres

ACTIVITY	DESCRIPTION	LEARNING EXPECTATIONS
<p>How Clear is Your Lake?</p>	<p>A hands-on activity where students learn about water clarity and the role algae plays in a lake ecosystem. There are six stations where students can use a secchi disk to measure water clarity in their "mini lake". Students are encouraged to participate and ask questions.</p>	<p><i>Matter and Materials, Grade 4</i></p> <ul style="list-style-type: none"> ● Demonstrate understanding that certain materials can transmit, reflect or absorb light or sound
<p>How Wet is Our Planet?</p>	<p>Presented by "Let's Talk Science", an award winning, national, charitable organization that deliver science learning programs and services.</p> <p>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.</p>	

<p>Mother Nature's Respirator</p>	<p>Students will investigate the capacity of water to hold oxygen for aquatic life respiration. Using two models, students will simulate natural processes of oxygenating water, and how to measure levels of oxygen in water.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>Prey I Won't Get Eaten</p>	<p>Species within the food chain rely on one another for survival. Food chains need healthy habitats and communities in order to sustain all life. Because humans are at the top of the food chain, we must conserve natural resources, habitats and the communities within them.</p>	<p><i>Measurement, Grades 4&6</i></p> <ul style="list-style-type: none"> ◆ The purpose of this program is to learn about the food chain and communities in nature. It focuses on web of life with ecosystems, while teaching children about the importance of habitat. ◆ This activity is part of the biodiversity preservation and science theme.
<p>Somethin' Fishy's Goin' On</p>	<p>Students will gain an appreciation of acid rain and its impact on life in Haliburton and Muskoka Lakes. Using water test kits, students will conduct pH and alkalinity tests on lake water samples to determine the level of acidity. This will be followed by a brief demonstration and discussion on what</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us. <p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats

	<p>happens to aquatic life when acid levels are high and why Haliburton and Muskoka Lakes are so susceptible to acid rain.</p>	<ul style="list-style-type: none"> ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>The Ribbon of Life</p>	<p>Students will enjoy a brief introduction to “The Ribbon of Life”; that highly productive area lining our lakes, rivers and streams. The functional benefits provided by ribbon of life will be discussed, as well as species interactions within this area. A unique board game will then be played, challenging students to create a healthy riparian zone along their own shoreline, before aquatic “dangers” such as pollutants and invasive species can enter their waterway.</p>	<p><i>Science and Technology, Grade 4 (Understanding Life Systems: Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Analyze the effects of human activities on habitats and communities ◆ Investigate the interdependence of plants and animals within the specific habitats and communities ◆ Demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them <p><i>Science and Technology, Grade 6 (Understanding Life Systems: Biodiversity)</i></p> <ul style="list-style-type: none"> ◆ Assess human impacts on biodiversity, and identify ways of preserving biodiversity ◆ Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics ◆ Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans
<p>Water World</p>	<p>Students will learn the Hydrological Cycle through graphics and watch the hydrology cycle in action using a model.</p>	<p><i>Earth and Space Systems, Grade 2 (Air and Water in the Environment)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate awareness of the ways in which the disposal of waste water can affect our health and the health of other living things <p><i>Energy and Control, Grade 3 (Forces and Movement)</i></p> <ul style="list-style-type: none"> ◆ Identify objects, devices and systems in everyday life that are affected by forces and movement and explain in what ways they are useful to us.

		<p><i>Life Systems, Grade 4 (Habitats and Communities)</i></p> <ul style="list-style-type: none"> ◆ Describe ways in which humans can change habitats and the effects of these changes on the plants and animals within the habitats ◆ Recognize that animals and plants live in specific habitats because they are dependent on those habitats and have adapted to them ◆ Describe ways in which humans can affect the natural world (e.g.: urban development forces some species to go elsewhere and enables other species to multiply too rapidly; conservation areas can be established to protect specific habitats) ◆ Show the effects on plants and animals of the loss of their natural habitat <p><i>Measurement, Grade 4 (Capacity, Mass and Volume)</i></p> <ul style="list-style-type: none"> ◆ Solve problems related to their day to day environment using measurement and estimation <p><i>Fundamental Movement Skills, Grade 4 (Locomotion and Traveling)</i></p> <ul style="list-style-type: none"> ◆ Combine locomotion/traveling skills in repeatable sequences, incorporating a variety of speeds, levels and energy resources <p><i>Energy and Control, Grade 5 (Conservation of Energy)</i></p> <ul style="list-style-type: none"> ◆ Demonstrate an understanding of the importance of energy in relation to the wise use of renewable and non-renewable energy resources ◆ Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
<p>Wetland Discovery Trailer</p>	<p>This interactive, educational display is built into a 20 foot trailer and includes programming on a touch screen which displays on a back drop inside the trailer. Students will be introduced to the four main types of wetlands found in southern Ontario, their physical characteristics and the species that can typically be found in each wetland type. As well, students can learn more about the Trent-Severn Waterway such as the species at risk who live along it and best practices along the shoreline to maintain a healthy water system.</p>	
<p>Why So Porous?</p>	<p>Presented by "Let's Talk Science", an award winning, national, charitable organization that deliver science learning programs and services.</p>	

	<p>A hands-on activity that shows students different soil types and their porosity. This activity will also discuss the effects of very porous and non-porous soils on ecosystems.</p>	
--	--	--

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.

In general, the parts of the Curriculum most directly involved with this event are:

Grade 3: Energy and Control – Forces and Movement
 Heritage and Citizenship – Pioneer Life
 Earth and Space Systems – Soils in the Environment
 Canada and World Connections – Urban and Rural Communities

Grade 4: Life Systems – Habitats and Communities
 Earth and Space Systems – Rocks, Minerals and Erosion

Grade 5: Energy and Control – Conservation of Energy
 Earth and Space Systems – Weather

Grade 6: Social Studies – Aboriginal Peoples and European Explorers
 Life Systems – Diversity of Living Things
 Health and Physical Education – Fundamental Movement Skills

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:

- ◆ Allowing each group of students time to prepare and present a report to the class on what they saw, did and learned on Festival Day. 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.
- ◆ Design a worksheet, to be completed at or after each activity centre at the Festival. Have your students prepare a folio that includes a diary or “Time-Log” of the day’s activities and the worksheets from each centre.

- ◆ 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 “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. In addition to using the Festival evaluations and feedback forms as part of your Student Evaluation and Reporting program this term, please consider sending in a report on student learning at the Festival and/or a photo collage along with the evaluation you are provided. Send to the Festival Coordinator, Irene Heaven at iheaven@outtolearn.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 requires you to either start earlier and use the Festival as the culmination of a series of lessons and activities, or to use the Festival as the starting point for a week or two of further review and study. Either method suggests that the curriculum focus for your grade-level be developed into a study-series with the Festival as a key focus. This might be work on Pioneer Life, Wildlife Habitats, Urban Water Systems, Conservation and/or Pollution Studies, Human Body Systems and Need for Water, the Chemistry and Physics of Water – all depending on the content strands your grade is responsible for.

Other subjects can easily be included in the program. Language skills involving critical reading, writing descriptive narrative material, creating stories or scripts, developing arguments – again depending on your grade level and the curriculum objectives – are natural extensions to the Water theme and the Festival activities. 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 many lesson plans and further suggestions on how to involve your class further with the Water theme.

Ideas to get you going:

- ◆ Use activities from the HMCWF Teacher's Resource Kit
- ◆ 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 the water topic
- ◆ 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



Teacher Resources

Books

- **The Amazing Water Book.**
Deborah Seed: Kids Can Press. ISBN 1550740032
- **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.ocup.org

Grade 3 – Social Studies

- Early Communities In Ontario
- Long Ago Before I Was Born

Grade 3-4

- Life in an Ecosystem
- Life Systems
- Not In My Backyard (Integrated Arts Unit)

Grade 4

- Life Systems: Habitats and Communities
- At the Watering Hole (Integrated Arts Unit)

Grade 4/5

- Inside/Outside

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 at 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.

Publications available from Environment Canada

Education levels are specified for each publication (primary, intermediate, secondary). These can be obtained free of charge using the order form on their website, http://www.ec.gc.ca/water/en/info/puds/e_teacher.htm

- **Acid Rain Colouring Poster.**
Designed to teach children about the concerns and effects of acid rain on our environment.
- **Every Drop Counts: A Speaker's Kit on Water Conservation and Water Efficiency.**
Downloadable off the website. The kit consists of a PowerPoint presentation (slides and speaking notes) and support material.
- **Explore Water with Holly Heron.**
Available on the site as a PDF file and from Environment Canada as a colouring book. Targeted at ages 5 to 9 years, showing how to become better environmental citizens.
- **From the Mountains to the Sea: A journal in Environmental Citizenship.**
Available on the site as a PDF file. Children's activity book illustrating the interdependence of all parts of an ecosystem.
- **Let's not take Water for Granted.**
Available on the site as a PDF file. Teaching suggestions, reading materials and learning activities to help teachers of Grades 5 to 7 use the information from A Primer on Fresh Water. Covers nine topics plus introduction and vocabulary.
- **A Primer on Fresh Water: Questions and Answers.**
Answers a wide range of questions on different aspects of water, its physical characteristics, availability both above and below ground, its uses, and how it's shared and managed.
- **Resource Kit: Kids WaterFest at the Museum of Industry (Stellarton, NS).**
Available on the site as a PDF file. Complete kit is 773 KB. Educator's notes and student activities designed to provide an overview of the importance of water.
- **Water for the 21st Century (poster)**
The poster asks people to take action to conserve and protect our fresh water as we enter the 21st century.
- **Water Facts Sheets:**
A collection of fact sheets in the Freshwater Series. Some are out of print but can be viewed on the website:
 - A-1: Water – Nature's Magician
 - A-2: Water – Here, There and Everywhere
 - A-3: Clean Water – Life Depends On It
 - A-4: Water Works!
 - A-5: Groundwater – Nature's Hidden Treasure
 - A-6: Water Conservation: Every Drop Counts
 - A-7: Water, Art and the Canadian Identity – At the Water's Edge

- A-8: Water – the Transporter
- A-9: Water – Vulnerable to Climate Change

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

- **It's a Natural**
Pamphlet filled with information about how to get a water conserving landscape.
- **H₂O Makes Everything Go!**
Pamphlet that quizzes users with 9 questions about water and it's many uses.
- **Yes, you can...**
Explains how to fix a leaky faucet by yourself.
- **Yes, you can...**
Install a water aerator
- **25 Things you can do to Prevent Water Waste**
Nine ways in the bathroom, six ways in the kitchen and laundry room and ten ways outside to prevent water waste.
- **Five Basic ways to Conserve Water**
Information on five easy ways to save water.
- **A Consumers Guide to Water Conservation: The inside story**
Learn how to check for leaks, conserve water in the shower and reduce the amount flushed
- **A Consumers Guide to Water Conservation: The outside story**
Eight tips for conserving water outside
- **Get your Hands Dirty**
Describes soil textures, seven types of organic material
- **How does your Garden Grow?**
Offers alternatives to reduce the amount of water needed for your garden.
- **Lawn Watering Tips**
Offers tips on how much and when to water your lawn to maintain lawn.
- **Caution! Your Hose may be Hazardous to your Health!**
Describes how to prevent backflow of water to keep your family safe from fertilizers and weed killers.

- **It's Up to Us**
Information to become aware of the dangerous household chemicals that can pollute the water.
- **Blue Thumb Basics**
Helps you to become aware about drinking water issues and advocates conservation.
- **Blue Thumb Series: 25 Facts About Water**
Discusses some facts about water and how to get involved in drinking water issues.
- **Good Soil For Effective Watering.**
Learn about various types of soil and how to maximize its properties for optimum water use and long-lasting lawns and gardens.
- **Preventing Floods and Leaks in your Home.**
Learn how to look for water leaks.
- **Blue Thumb Series: Water Saving tips for Kids by Kids.**
How children can keep water safe and how they can conserve.

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.
- **The Great Peace: the Gathering of Good Minds.**
Working world Training Centre Inc. www.workingworld.ca
This CD brings a message of universal peace and understanding presented from a First Nations perspective
- **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.

- **Environment Canada's Greenlane**

<http://www.ec.gc.ca/envhome.html>

Information about various environmental issues, such as nature, clean water, clean air, and climate change.

- **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.ec.gc.ca/envirozine/english/home_e.cfm

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.

- **Canadian Climate, Environment Canada**

<http://www.cmc.ec.gc.ca/climate/home-e.html>

General information on water as it relates to climate.

- **Adopt-A-Pond**

<http://www.torontozoo.com/adoptapond/index.html>

A wetland conservation program operating out of the Toronto Zoo that allows people and groups to adopt a pond.

- **Otonabee 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>
Information on drilling safe drinking water wells and building hand pumps, and training programs.
- **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://www.cwra.org/About_CWRA/Project_Wet/_project_wet.html
A Canadian program to promote the appreciation and knowledge of water resources in the classroom.
- **Water Survey of Canada**
<http://www.msc.ec.gc.ca/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.kc.kc.html>
Site for kids with activities and info.
- **Water Science for Schools, U.S Geological Survey**
<http://www.usgs.gov/education.html>
General information for kids and teachers, as well as online activities.
- **American Water Works Association**
<http://www.awwa.org>

- **Kids for Puget Sound**
<http://www.pugetsound.org/kids/default.html> Seattle, WA, U.S.A
- **Great Lake Information Management**
http://www.on.ec.gc.ca/water/greatlakes/gl_kids-e.html
Resource - Kids resources
- **Canada's Aquatic Environments**
<http://www.aquatic.uoguelph.ca>
Promotes awareness of aquatic ecosystems
- **Ducks Unlimited Canada**
<http://www.ducks.ca/edu/resource.html>
- **Canadian Centre for Inland Waters- Water research in the Great Lakes**
<http://www.nwri.ca>
- **Citizen's Environmental Watch- Ontario wide, citizen run monitoring project**
<http://www.utoronto.ca/envstudy/cew/education/waterquality.htm>
- **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://volws.bc.ca/education/Educationfs.html>
- **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/Education/Connection/index.html>
- **Water Use It Wisely**
<http://www.wateruseitwisely.com/game>
Incorporates water conservation tips into a memory game
- **Take Action for Water**
<http://www.wrc.govt.nz/TA/water/kids/games.cfm>
Environmental Education Program
- **BellLive**
<http://www.bellmuseum.org/distancelearning/watershed2.html>
Electronic Learning Adventures help kids learn about the environment