

## Safe Drinking Water Foundation Educational Programs: Purpose and Results

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Did you know?

As of October 25<sup>th</sup>, 2013 there were 1,237 Boil Water Advisories and 48 Do Not Consume Orders across Canada.

Did you know?

As of September 30<sup>th</sup>, 2013 there were 123 First Nations communities across Canada under a Drinking Water Advisory. Approximately one in five First Nations communities are under a Drinking Water Advisory at any given time.

Did you know?

Some First Nations communities are enduring Water Advisories which have lasted longer than a decade, some examples:

Eabametoong First Nation - over 12 years

North Spirit Lake - over 12 years

Neskantaga - over 18 years

In 2011 the average duration of an advisory in a First Nations community was 772.6 days (more than two years!)

Did you know?

In 2013 there were three major municipalities in Canada which imposed Boil Water Advisories: Saskatoon, Montreal and Winnipeg.

What can be done about all of these problems? What can anyone do?

The Safe Drinking Water Foundation (SDWF) was founded in 1997 in order to assist rural communities in developing countries with their drinking water quality situation but it was soon decided that, because there are many rural and First Nations communities in Canada whose drinking water situations are almost as or just as bad as those of rural communities in developing countries, the foundation should work towards helping those in Canada who do not have safe drinking water.

I bet you know that students will be our future engineers, scientists, and our communities', provinces' and nation's leaders! With that in mind, in 2001, the SDWF started creating and sending educational kits to schools. The SDWF sends 1,000 kits to schools across Canada every school year and these kits educate over 60,000 Canadian students about drinking water quality issues and solutions. Over 2,100 schools and other educational institutions have used SDWF kits with their students. After using the kits in their classrooms, teachers and students are encouraged and supported in taking action to share what they have learned with others and to alleviate drinking water quality issues in their regions.

Teachers request enough sponsored kits that 180,000 Canadian students could be directly educated by using these hands on, authentic, relevant kits every school year, but funding is lacking. Currently, Canadian teachers are waiting for over 2,600 sponsored kits to be sent to their schools!

There are four different types of SDWF educational kits:

Elementary Operation Water Drop – students in grades four to eight test their local drinking water and a control water sample for eight different components and then compare their results to the Guidelines for Canadian Drinking Water Quality

High School Operation Water Drop – students in grades nine to twelve test their local drinking water, a raw water sample, an urban water sample, a rural water sample, and a control water sample for 13 different components and then compare their results to the Guidelines for Canadian Drinking Water Quality

Operation Water Biology – students in grades nine to twelve learn about biological water treatment [a more effective and environmentally friendly method of treating drinking water compared to conventional (chemical) water treatment methods], they also learn about ammonia, iron, chlorine and chloramine by conducting hands on experiments

Operation Water Pollution – students in grades five to twelve learn about water pollution (what it is, what causes it, how it is cleaned up, what can be done about the problem, and what they can personally do about the problem). Students also participate in an activity in which they create a sample of polluted water, and learn about the differing economic realities which exist in communities in terms of having the resources available to filter polluted water.

All of these kits are available in French as well as English and the SDWF encourages and supports teachers and their students in taking action to share what they have learned with others and to alleviate drinking water quality issues in their regions after they have used these kits in their classrooms.

What are some of the reasons teachers gave for wanting sponsored kits when they requested the kits via our online form this fall?

Susan, a teacher at Robarts School for the Deaf in London, Ontario, requested sponsored kits because, “It is part of the school curriculum. We are involved in the Me to We program. We are involved with deaf students who need visual information and hands on material.”

Morgan, a teacher at Del Van Gorder School in Faro, Yukon Territories, requested sponsored kits and said, “Our remote community is closely tied to the land through traditions of hunting and fishing. As well, we live in the watershed of one of Canada's largest open pit mines. Many of the future jobs in this area will be related to mine reclamation and water protection.”

Arlene, a teacher at Colonsay School in Colonsay, Saskatchewan, requested sponsored kits and said, “Our school would like to receive the sponsored kits because of the location of our school and the area it serves. We have a variety of water sources at our students’ homes: rural farms, municipal water supplies, town water and Saskatoon city water. It would be interesting for the students to be able to examine and test these water sources and observe the differences.”

Paul, a teacher at Red Sucker Lake First Nation School in Red Sucker Lake, Manitoba, requested sponsored kits and stated, “We would like to have sponsored kits as these kits are very good educational materials that will help students understand water better. Water is a very basic need in order to survive and it is through these kits that they are able to examine, learn, experiment and explore how water becomes polluted, how it is cleaned, and the differences of water from various places. Through these

kits, we are able to provide authentic learning experiences to our students aside from teaching them the theories behind these kits through lectures, and worksheets. These kits will serve as good instruments for students to actually apply what they have been learning about water in the books, and their previous years.”

Jacinta, a teacher at Baltimore School Complex in Ferryland, Newfoundland, requested sponsored kits and exclaimed, “I have used these before – they are such an excellent resource. We do not have access nor the financial means of purchasing one of these kits otherwise. They are a great addition to any science classroom! Thank you so much for this opportunity – I love using these kits and my students love them as well!”

The following is some of the feedback we received from teachers who were lucky enough to receive sponsored kits last school year:

Colleen, a grade eight teacher at John Diefenbaker School in Prince Albert, Saskatchewan said, “Very good program. Instructions were easy to follow and the students enjoyed testing our local water supply,” after using a sponsored Elementary Operation Water Drop kit with her students.

Greg, a grade five teacher at Calgary Science School in Calgary, Alberta exclaimed, “Program is great! It's great to have these kits to do water chemistry with our students,” after using a sponsored Elementary Operation Water Drop kit with his students.

Amy, a grade 11 teacher at Sussex Regional High School in Sussex, New Brunswick said, “My students really enjoyed using these kits. It provided them with an excellent opportunity to be actively involved in water quality education,” after using a sponsored High School Operation Water Drop kit with her students.

Michele, a grade 11 teacher at Turner Fenton Secondary School in Brampton, Ontario stated, “I find the kit to be very useful and comprehensive...Very good program and we have been collecting data on a local water supply for three years for comparison purposes,” after using a sponsored High School Operation Water Drop kit with her students.

Amy, a grade nine teacher at St. Catharines Collegiate in St. Catharines, Ontario exclaimed, “Very user friendly! Students loved the program!” after using a sponsored High School Operation Water Drop kit with her students.

Hayley, a grade 11 teacher at Edison School in Okotoks, Alberta stated, “The kits really help our efforts to increase hands-on real time learning. I didn't even have a pH meter before!” after using a sponsored Operation Water Pollution kit with her students.

Brad, a grade nine teacher at Green Learning Academy in Calgary, Alberta exclaimed, “I LOVE it!” after using a sponsored Operation Water Biology kit with his students.

Anthony, a grade eight teacher at Prince Arthur Junior High in Dartmouth, Nova Scotia said, “Thank you for all of these wonderful resources,” after using a sponsored Operation Water Biology kit with his students.

After students and teachers have used SDWF kits in their classrooms we encourage and support them in taking action to share information with others and to alleviate drinking water quality issues in their regions. The following are some of the actions teachers and their students took last school year after

using SDWF kits:

Michele, a grade 11 teacher at Turner Fenton Secondary School in Brampton, Ontario said, "My experience with our student population is that they are very unaware of where their water comes from and how it is treated. So far most of the impact of our water testing in science class has been within the rest of the school population. Perspectives on water treatment, infrastructure, bottled water versus tap water, and the ban on pesticide and herbicide use on lawns have become topics of discussion with a broader group of students in higher level science classes as well as geography, economics and marketing classes. I believe more students within the school have a greater appreciation for the fact that what we flush down the drain ends up in their drinking water."

Georgina, a grade eight teacher at Jack Donohue Public School in Kanata, Ontario stated that after they used a kit they held a full school event on water awareness.

David, a grade 12 teacher at Sugarloaf Senior High in Campbellton, New Brunswick said that after they used a High School Operation Water Drop kit in their classroom "students have been able to advise their parents and communities about safe drinking water."

Anne, a grade five teacher at Wejgwapniag School in Gesgapegaig, Quebec stated that they "will begin the 2013-2014 school year with a walk throughout the community to pinpoint problem areas that could affect the water system and then see who we could contact to fix them."

Hayley, a grade 11 teacher at Edison School in Okotoks, Alberta said that after they received an Operation Water Pollution kit they held "classes on eutrophication due to run off. Agricultural input of nitrates & phosphates. Lab on growth of algae in different concentrations of fertilizer. Assayed local golf course water before and after it flowed through the course in spring. Assayed water quality of the Sheep River as it flows through the town - thanks for the kits. Field trip to the local sewerage treatment facility - they remove phosphates before water is released into the Sheep River."

Daryl, a grade 11 teacher at Acton District High School in Acton, Ontario stated that after they used an Operation Water Pollution kit in their classroom his students participated in public speaking and websites.

Can you help the SDWF to educate more future leaders about drinking water quality issues and solutions? We need you to visit [www.safewater.org](http://www.safewater.org) and look at the map of the schools which are waiting for sponsored kits and buy a kit for a school. You could choose a school in your area, a school you attended, a school your children attend, any school you would like to receive a kit! If you would rather help with the SDWF's efforts to get more kits to more schools in an overall manner then please visit <http://www.safewater.org/make-a-donation.html> and donate today. Official donation receipts for income tax purposes will be given for donations of \$20 or more.