



Cool It! Climate Leadership Training  
[bcsea.org/cool-it](http://bcsea.org/cool-it)



Cool It! Climate Leadership Training 2016/2017

# Final Report

City of Richmond



*submitted by:*

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## Executive Summary

In 2016-17, BC Sustainable Energy Association's *Cool It! Climate Leadership Training* program reached 541 students in the City of Richmond, through 19 workshops in 11 elementary schools.

During the program challenge, students committed to several energy saving actions over a 4-week period. Students' energy conserving and emissions saving actions at home resulted in the projected savings of a total of 333.442 tonnes of carbon dioxide (CO<sub>2</sub>e), if they continue their actions for one year. This result came from students and their families taking a combined total of 6,547 actions – such as replacing old lightbulbs with new LEDs, taking short showers, having meat-free meals, doing cold water laundry washes and making car-free journeys.

The City of Richmond's commitment of \$10,580 enabled the BC Sustainable Energy Association (BCSEA) to deliver the Cool It! workshops and connect teachers to high quality educational resources to explore climate change actions further. This sponsorship support enabled students and their families to reduce their emissions at a cost of \$31.72 per tonne.

The City of Richmond's generous funding support was recognized by BCSEA through logo placement online, in print materials, in school workshops, and on social media.



## City of Richmond Funded Workshops

### Program Overview

BCSEA's Cool It! program brings Environmental Educators into classrooms to deliver a fun-filled, thought provoking and empowering program that engages students on climate change and energy conservation. Prior to workshop delivery, teachers are provided with educational materials and some preparatory exercises to do with students. During the workshops, grades 4 to 7 students and their teachers are engaged with discussion, animated videos and quizzes, skit activities and games. After discussing their understanding, concerns and current actions on climate change and brainstorming ways to reduce their own impact, the students take home the Climate Leadership Challenge contest and work at home with their families to reduce their household greenhouse gas emissions (GHGs). The contest is a 4-week student-family challenge that supports students taking steps to set realistic achievable goals, reflect on the outcomes, and share successes and challenges.

In addition, a rich set of teacher resources support classes in exploring key themes in energy conservation and climate change mitigation, including the power of optimism. BCSEA's refreshed Cool It! program is designed to encourage student actions and attitudes that support municipal, provincial, and federal emissions reduction targets. It helps empower students and teachers to explore energy conservation and climate change mitigation beyond the workshop, with inquiry and place-based activities linked to local and regional resources and solutions.

After the 4-week Challenge, BCSEA's Environmental Educators return to each classroom to conduct a follow-up visit and collect Challenge forms. The follow-up visit involves a short digital presentation that provides further ideas on how to take and sustain action against climate change. Overall, it provides hope for the future! After the data from all Challenge forms is compiled, notifications for the winning class and winning students are sent out, and students, classes and teachers are rewarded for their efforts.

### Engagement

BCSEA's refreshed program not only supports emissions reductions, it builds teachers' capacity to engage students on these topics and empowers students to go further themselves. By modelling inquiry and place-based thinking in pre-workshop and workshop activities, BCSEA's Environmental Educators enhance the teachers' approach to seeing climate change solutions in a participatory, open-ended, and generative manner.

## Current, fact-based and bias balanced

The Cool It! program provides students and teachers access to current, factual information on climate change and energy conservation including current science-based resources. It has been reviewed by 3<sup>rd</sup> party educators and curriculum developers to minimize bias in content presentation.

## Curriculum-linked and supporting new curriculum

The refreshed Cool It! program helps teachers meet the BC Ministry of Education’s new curriculum needs – supporting core competencies including Creative and Critical Thinking, Communication and Personal and Social Responsibility.

## Program Results

The funding amount of \$10,580 committed by the City of Richmond, enabled BCSEA to deliver 10 Cool It! workshops to 541 grade 4 to 7 students in the City of Richmond during the 2016/17 school year (see table below). The 4-week Challenge involved 332 students performing 6,547 actions resulting in an estimated total reduction of 333.442 tonnes of greenhouse gas emissions (tCO<sub>2</sub>e). This is equivalent to 59 passenger vehicles being taken off the road for a year. 74 students answered the City of Richmond’s bonus questions correctly, and a full summary of Challenge results is found below. In addition, students provided some of their own ideas to conserve energy, and some of the best ideas are provided in Appendix A.

Workshops in the City of Richmond:

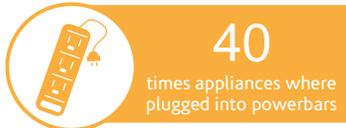
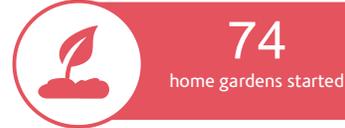
School	Teacher	Grade	Class Size	Contests Returned	Return Rate (%)	tCO <sub>2</sub> e GHG/yr
Jessie Wowk	Bonnie Froh	4/5	28	7	25%	15.747
Ferris Elementary	Kevin Lyseng	5/6	30	27	90%	36.581
James Gilmore	Margaret McCarthy	5/6	30	5	17%	3.264
James Gilmore	Andrea Hunter-Mogg	4 FI	20	0	0%	11.955
James Gilmore	Ektaa Singh	4/5	30	14	47%	19.791
Lord Byng Elementary	Deb Green	4/5	30	15	50%	25.546
Lord Byng Elementary	Colleen Wong	4/5	30	25	83%	5.442
Cook Elementary	Christy Rollo	5/6	30	22	73%	6.216
Cook Elementary	Joanna Fournier	5/6	30	8	27%	11.037
Cook Elementary	Janine Tennant	6/7	30	27	90%	9.440
Cook Elementary	Justine Oye	6/7	30	29	97%	23.923
Mitchell Elementary	Nora Harrison	4/5	30	17	57%	31.204



<b>Errington Elementary</b>	Caroline Waugh	6/7	30	27	90%	9.416
<b>Anderson Elementary</b>	Chelsea Murray	6/7 FI	28	6	21%	18.246
<b>McKay Elementary</b>	Peter Johnsen	4/5	28	25	89%	25.170
<b>Howard DeBeck Elem</b>	Karishma Poonawala	6/7	28	25	89%	26.299
<b>James Whiteside</b>	Chelsea Mason	6/7	25	17	68%	8.095
<b>James Whiteside</b>	Amy Gagnon	7	24	12	50%	7.702
<b>James Whiteside</b>	Jordan McCuaig	6/7	30	24	80%	38.360
<b>Totals</b>			<b>541</b>	<b>332</b>	<b>60%</b>	<b>333.442</b>



## Summary of Cool It! Climate Leadership Challenge results in City of Richmond





## Student and Teacher Recognition and Rewards

To celebrate the hard work and dedication of students and teachers to complete the 4-week contest, BCSEA provides a range of certificates and prizes. 171 students were awarded high achievement certificates and ribbons, and one student won the Best Savings prize.

The winning class is determined by the highest total percentage of contest points possible based on the class size, and the winning class was Jordan McCuaig's Grade 6/7 class at James Whiteside Elementary School (see photo below). Through their participation in the contest Jordan McCuaig's class was able to reduce an estimated 38.360 tonnes of greenhouse gas emissions<sup>1</sup>. The winning class was awarded a certificate in recognition of their hard work as well as a pizza party celebration and Science World passes. Seventeen students in this class scored over 900 points on the contest and were presented with ribbons and certificates. The student who scored the highest points overall of all 19 participating classes was also from Jordan McCuaig's class at James Whiteside Elementary and was awarded a certificate and Green Science Kit.

Teachers played a key part in motivating students to participate in the contest. Teachers of eight classes were rewarded with thank you cards and small gifts for their high contest participation rates.

## Acknowledgement of City of Richmond's Sponsorship and Support

BCSEA is grateful for the funding support from funders like the City of Richmond who have made climate change education programming possible.

The City of Richmond was acknowledged for their support of the Cool It! program as follows:

- The City of Richmond logo was placed on the Climate Leadership Challenge form taken home by students
- The City's logo is featured on the sponsor section of the Cool It! webpage <http://www.bcsea.org/cool-it>
- Presenters acknowledged the support of the City of Richmond during workshops.
- Social media posts in which City of Richmond was tagged, acknowledged financial support from the program

The BCSEA would like to thank the City of Richmond for its partnership in achieving the shared goals of increasing awareness of climate change and energy conservation, and for making real behaviour

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<sup>1</sup> The emissions saved are based upon the assumption that students continue their 4-week challenge activities through a full year upon completing the contest.



change possible for BC students and their families to conserve and reduce their climate impacts.

## Recent Program Upgrades

The program was refreshed in summer of 2016 to:

- Meet changing curriculum requirements for BC teachers
- Update climate change references and data to reflect current values
- Renew and improve the format and actions of the 4-week student contest forms
- Further enrich the teacher resources available to support ongoing learning and inquiry parallel to students doing the contest
- Improve student action data gathering and reporting for program funders

We have been using the 2016-2017 school year to refine these changes and welcome your input and feedback to finalize the program update over the coming year.

We continue to strive to improve contest form return rates through follow-up sessions with classes, teacher outreach, teacher support, and various incentives.

We are very excited to be continuously improving the program and will continue to schedule time and resources for future improvements.

## Contest Points and Quantifying Emissions Savings

### CONTEST POINTS

The Cool It! Climate Leadership Challenge, the contest portion of the program, uses points for student actions as a simple relative emissions value. These points are converted to emissions savings using a formula and emissions factor as described below.

The maximum achievable student points for the refreshed 2016/17 program is 6100. However, some actions have an associated cost for the family (e.g. new LED bulbs; purchasing organic food; a new programmable thermostat). Students taking all no-cost actions can score 3700 points. Students and households who are undertaking conservation actions for the first time are more likely to achieve a more modest point value (900 to 1500 points). The intent is to raise awareness and inspire student and family commitment to take action. For this reason, we made the entry level prize achievable at 900 points, and the next tier at 2500 points. This recognizes the efforts of younger, less able and/or lower socioeconomic households to receive acknowledgement for taking steps – while also rewarding those who are clearly making great strides.



## EMISSIONS SAVINGS

The program estimates GHG savings from contest actions using a GHG calculator tool. For each activity it is assumed that a given savings includes that activity over the period of the contest and continues for at least a full calendar year. Energy savings are measured in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e). These savings are calculated using emissions factors for electricity produced in BC (BC Hydro) and standard emissions factors for natural gas and gasoline. Calculations for usage over a year use standard averages ((e.g. lightbulbs average daily usage over a year = 3 hours per day))

The GHG emissions factors are reviewed and adjusted every 1-2 years as new information becomes available. The calculator tool is also updated regularly to ensure underlying assumptions and calculations are accurate and complete. The BC emissions factor for electricity data, is dominantly hydroelectric based and thus lower than the Canadian average.

Over the past two years we have been audited by two third party organizations Climate Smart and Cowichan Energy Alternatives Society (CEAS)), who helped update our emissions factors and approved our GHG calculation methods to give our reductions more credibility in hopes to attract more funding.

The maximum achievable emissions reductions for the refreshed 2016/17 program is 4.9 tonnes of CO<sub>2</sub>e. However, some actions have an associated cost for the family (e.g. new LED bulbs; purchasing organic food; a new programmable thermostat). Students taking 14 core no-cost actions can achieve savings of 2.4 tonnes per household. An ambitious student could realistically achieve 1.9 tonnes. For many students and households (particularly those undertaking this type of effort for the first time) savings of 0.5 to 1.2 tonnes are more likely. As pointed out above in the POINTS section, BCSEA's intent is to inspire and celebrate students and families taking action which create initial steps towards life-long savings.

Emissions Savings are calculated using BC PowerSmart estimates, Environmental Working Group's Meat Eaters Guide (2012), Canadian Vehicle Survey (2009) and guides produced by BC Hydro and Fortis BC, MetroVancouver, the City of Richmond and the One Tonne Challenge.



## "Over to You"

### A Few Energy-Saving and Eco-friendly Ideas from the Students

Drive an electric or hybrid car

Turn off the light when not using it

Use cloth bags

Use a dual flush toilet

Use newspaper as giftwrap

Use a broom instead of the vacuum

Read instead of playing video games

Reuse things instead of buying them new

Nature hour: spend one hour outside with  
your family

Play outside

Open the window instead of using the fan

Make your own things instead of buying  
them new

Wash with a washcloth instead of having  
a shower

Use a rain barrel

Reuse cloth grocery bags

A public bike share program



A monthly, city-wide, no-electronics day

Use a programmable lightbulb, adjust to the lowest brightness when you don't really need it

Use natural light instead of electricity

Car-free days

A big clean up day where everyone in town cleans

Less screen time

No food waste

Recycle paper