



# Just Do It!

## Taking Action on Climate Change

Action projects encourage students to take action on an issue of concern and provide empowering learning opportunities. By reviewing and sorting examples and case studies of action projects, students build knowledge, problem-solving and decision-making skills. In addition, students are provided with inspiration, options, and ideas for tackling an issue individually and/or as part of a community or class.

### Lesson Objectives

- Introduce concept of “action projects”
- Familiarize students with a range of possible action projects

### Activity Time

- One 50-minute class period

### Setting

- Indoor or outdoor learning area

### Materials

For each group\*:

- one copy of **Types of Action Projects** category sheet
- set of **Climate Change Action Project Cards**
- flipchart paper
- markers

\***Note:** Approximately four students per group

### Subject Area /Grade Level

Science 10, Social Studies 11, Civic Studies 11, Geography 12

### Keywords

Climate change, impact, action, mitigation, adaptation, greenhouse gas emissions

### Prescribed Learning Outcomes

#### Science 10: Processes of Science

- demonstrate scientific literacy
- demonstrate ethical, responsible, cooperative behaviour

#### Science 10: Earth and Space Science

- explain the effects of thermal energy within the atmosphere
- evaluate possible causes of climate change and its impact on natural systems

#### Social Studies 11: Skills and Processes

- apply critical thinking
- demonstrate effective written, oral, and graphic communication skills
- demonstrate skills and attitudes of active citizenship

#### Social Studies 11: Human Geography

- assess environmental challenges facing Canadians, including global warming

### Prior Knowledge Required

Before starting this activity, ensure the students have a good conceptual understanding of:

- climate change (especially possible causes of current climate change)
- adaptation (within ecosystems as well as human systems)
- predicted potential impacts of climate change in your region



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*Nobody makes a greater mistake than he who did nothing because he could only do a little.*

— Edmund Burke, British statesman

## Introduction

Climate change is currently a topic of global interest and concern. What can we do? As individuals, we can take action by making simple shifts in our daily lifestyles such as choosing activities that reduce our personal contribution of greenhouse gas emissions. As a community, e.g., a class of students, we can work together on action projects that tackle the issue of climate change at a variety of levels.

Action learning is an important part of education. Too often students are left feeling overwhelmed at the enormity of environmental problems, particularly something as vast and complex as climate change. Through taking action on an identified problem, students begin to understand that they have the power to bring about positive and significant change. Action projects can range in complexity: from making a community notice board of climate change news and events to developing maps of safe bike routes to the school to making the school carbon neutral. Action projects provide venues for using creative and critical thinking skills, developing project planning, field-testing and implementation skills, and supporting students in actually taking responsible action on issues and problems that affect them and their community.

The adage “the first step is the hardest” is often the case when contemplating taking on an action project. Where does one start? Ensuring that students are directly involved in choosing a project that is relevant and interesting to them is a very important motivating factor when undertaking an action project.

This activity is a good introduction to action projects, as it encourages students to review and discuss a wide variety of actual action projects while categorizing them. Through exploring the range of possibilities of what individuals, groups, and communities can do to address climate change and identifying action projects that appeal to them, students take the first step in potentially launching action projects of their own.

## Procedure

### 1 Introduce concepts and activity

Explain the activity to the students and explain the concept of “action projects”. Divide the class into groups of four people. Distribute to each group: a set of **Climate Change Action Project Cards**, one **Types of Action Projects** category sheet, one sheet of flipchart paper and markers. Tip: use durable card stock to make each set of **Action Project Cards**.

### 2 Review action project categories

Read through the category sheet, **Types of Action Projects**, as a class. Next have the groups divide up their set of **Climate Change Action Project Cards** so each group member has approximately the same number of cards to read and categorize.

### 3 Sort action projects by category

Direct the groups to sort the cards into types of action projects, using the headings on the category sheet (Educate and Inform, Political Action, etc.). Encourage the students to read aloud, discuss, and sort each card as a group. As a summary, each group should record the headings on the chart paper and list the title of each card under the appropriate heading. Groups can make new headings as required.

Note the blank **Action Projects Cards**! Tell students that if they have been involved in action projects, know of others, or have an idea for one that addresses the issue of climate change, they should make a card and add it to their pile. Categorize these cards under the current headings or create new ones as needed.

Alternatively, *prior* to viewing the **Types of Action Projects** category sheet, ask the groups to sort the **Action Project Cards** into piles of similar types of projects and to determine their own category headings and descriptions. Summarize as above. Use the category sheet as a reference, point of discussion, and/or confirmation of the groups’ summaries.



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## 4 Class debrief of action project categories

Display each group's summary. Debrief the sorting process with the class by asking them the following questions:

- Were the action projects difficult to categorize?
- Did some of them overlap?
- Why do you think this is? (A: *Many larger projects include several smaller projects within them: e.g., a Hands-on Project may also include Educate and Inform, Raise Money projects.*)
- What category of action projects did you like the most? Why?
- Which project surprised you the most?
- Which category has the most impact in addressing climate change? Why?

## 5 Choose your favorite

Ask groups to pick a project that is most interesting to them, and prepare to share their responses to the following questions:

- What is your action project? What category does it fit into and why?
- Describe why your group selected this project. Why is it important?
- Describe how the action project addresses the issue of climate change.
- Describe how you might do the action project as an individual or group. What would you need to do (e.g., what would be the action plan)? Where might you look for information, resources, experts or organizations to help? What would the timeline be?
- List some challenges you think you might face and ideas for solving these challenges.
- What other impacts on individuals, community and/or natural ecosystems does this action project have?

## 6 Group presentations

Give each group time to share their selected action project with the class. Presentations should address the above questions. List each group's selected projects to create a class display of possible projects to undertake.

## 7 Next steps

If the class agrees to take on doing an action project, determine what research they may need to do to help them decide on a single project. See Leap into Action! to help guide you and the class in the next steps of choosing the action project and getting started.

## Assessment

- 1 Review each group's summaries to assess knowledge attainment related to types of action projects. Look for evidence of cooperation amongst the group members to create reasonable groupings of action projects.
- 2 During the presentation, look for evidence of scientific literacy, solid understanding of the potential causes of climate change (e.g., link between increasing levels of greenhouse gases in the atmosphere and increasing average global temperature), the potential impact of climate change, and examples of how we might mitigate the impact (e.g., appropriate action projects that either reduce the amount of carbon dioxide emissions or increase the amount of carbon dioxide removed from the atmosphere).
- 3 Ask each group to provide a plan of action outline. Assess the plan for a reasonable understanding of action project planning and implementation, including the opportunities and challenges that may be present. Use the **Action Project Rubric** provided.

## Extensions

- 1 Ask students to determine different ways to tackle one particular climate change issue and to outline possible plans of action.
- 2 Have students choose one or several action projects to implement as individuals and/or a class, and document their progress in writing and with a digital camera. Use the **Action Project Rubric** provided.



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## Source

This lesson has been modified with permission from *Leap into Action! Simple Steps to Environmental Action*: A project of the BC Conservation Foundation and WildBC.  
Author: Susan Staniforth

## Resources

**BC Green Games:** [www.bcgreengames.ca](http://www.bcgreengames.ca)  
The Gallery provides many inspirational action projects, including ones relating to climate change, done by students in K to Grade 12 throughout BC.

**B.C. Ministry of Environment:** [www.env.gov.bc.ca/epd/climate/](http://www.env.gov.bc.ca/epd/climate/)  
Along with an overview of the science, this site reports on the predicted impacts of climate change in BC.

**Environment Canada:** [www.ec.gc.ca/cc/](http://www.ec.gc.ca/cc/); [www.msc-smc.ec.gc.ca/education/scienceofclimatechange/understanding/index\\_e.html](http://www.msc-smc.ec.gc.ca/education/scienceofclimatechange/understanding/index_e.html)  
Both sites provide extensive background information on the science, adaptation and impact of climate change, as well as taking action.

**Leap into Action! Simple Steps to Environmental Action:** A project of the BC Conservation Foundation and WildBC. 2004. Author: Susan Staniforth.  
A clear, comprehensive guide to help students and teachers in the choosing, developing, planning, implementing, and evaluating action projects. Background information, case studies, and resources are included. Available through WildBC: [www.wildbc.org](http://www.wildbc.org)

**Pembina Institute:** [www.pembina.org](http://www.pembina.org); [www.greenlearning.ca](http://www.greenlearning.ca); [www.re-energy.ca](http://www.re-energy.ca)  
The Pembina Institute provides excellent resources, on-line teaching units, grade-specific information, energy calculators and research sites on climate change and renewable energy.



### 1 Educate and Inform

These projects teach other people about an issue. Examples include writing newspaper articles or pamphlets; presenting plays, poems and songs; making posters, murals and advertisements; and hosting school celebrations (e.g. Earth Day, Bike to School Day).

### 2 Personal Consumer Action

Reduce individual carbon footprint (e.g., the amount of greenhouse gas emissions) by altering individual shopping and lifestyle habits, including choosing to refuse, reduce, reuse and/or recycle. For example, individual consumers choose to: not buy unnecessary items or those with excessive packaging, buy fewer items and/or buy used items. This action also considers supporting local farmers and businesses. By changing individual behavior, people can be models for others to change.

### 3 Business Choice Action

Investigate stores and businesses to see how their products and/or services can be more environmentally friendly and make suggestions for change. For example, stocking locally made items and organic produce, selling and using recycled products, giving credit for people who bring their own bags, using fuel-efficient delivery vehicles, etc.

### 4 Raise Money

Raise money for a cause, like purchasing land for conservation, buying bike racks or native plants, buying carbon credits to offset greenhouse gases emitted when traveling, or adopting an animal like a polar bear. Fundraise to make your own project happen.

### 5 Political Action

Create change through creating and/or organizing groups at the class or school level that address policy regarding climate change in the school system and/or community. Groups can meet with local government about issues, speak at public meetings, develop and circulate petitions, write letters and do media releases, etc.

### 6 Hands-on Projects

Make direct changes to the environment like greening schoolgrounds by planting native species of shrubs and trees, stream cleanups, habitat restoration projects, etc. By enhancing green spaces, more carbon dioxide will be removed from the atmosphere. Projects can also include protecting local green spaces, developing anti-idling zones at schools, etc.

### 7 Transportation Choices

Encourage and support environmentally-sound transportation and recreation decisions that reduce greenhouse gas emissions. These include promoting walking, biking, car-pooling, taking public transport, choosing fuel-efficient vehicles, and choosing “low-impact” recreation like hiking and canoeing.

### 8 Other: Your Own Category

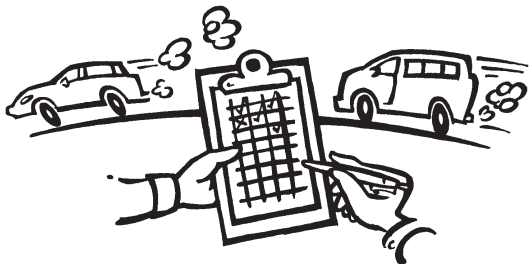
Adapted from Staniforth (2004) *Leap into Action!*; Project WILD (1995) *Taking Action: An educator's guide to involving students in environmental action projects*; and Learning for a Sustainable Future (2002) *A Guide for Engaging Students in Community Action Projects*.



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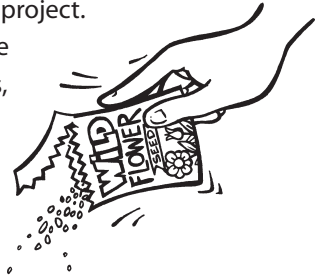
### Drive Less! Challenge

Driving is responsible for almost half of the average Canadian's personal greenhouse gas (GHG) emissions. For every 4 km you don't drive, but walk, bike, bus and/or car-pool instead, you reduce the amount of GHG you emit to the atmosphere by 1 kg. Survey and record your class's mode of transportation, e.g., how does everyone get to and from school each day? Determine viable alternatives. Take the **Drive Less! Challenge** and try reducing your driving over a one month period and calculate the GHG saved as individuals and as a class.



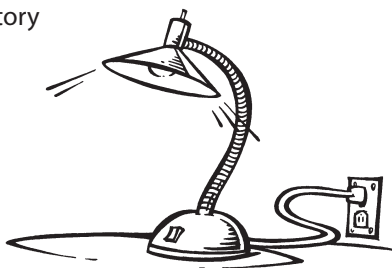
### Community Wildflower Garden

Several schools in Surrey worked to change a grassy field into a beautiful wildflower and butterfly garden that everyone can enjoy by partnering with businesses, community members, and service clubs. Nurseries donated trees and shrubs, students grew many plants from seed, and service clubs funded benches and walking/wheelchair paths for seniors who lived in a nearby residence. Some of the seniors became key consultants, lending their gardening and landscaping expertise to the project. Beyond the shelter and shade provided by trees and shrubs, green plants capture and potentially store carbon dioxide (a greenhouse gas), helping to reduce the total amount in the atmosphere.



### Energy Trackers

Complete a personal and class energy use inventory over 24 hours. Each person in your class monitors their energy use at home - everything from the toaster in the morning to the bedside lamp at night. Record the item used, the length of time used, whether or not it was necessary, and possible less energy demanding alternatives, especially those that don't rely on burning fossil fuels. As a class, monitor your energy use while at school, including things such as lights, heat, and transportation. Graph and organize the data collected. Follow up the inventory with personal and class action plans with commitments to use less energy.



### Eat Local, Eat Organic

Students at a Vancouver school worked to analyze where the food they ate in the school cafeteria originated. They then drew up a plan to find some local and/or organic sources of some foods, including fruit, vegetables, bread and milk. Students approached the school administration and cafeteria staff with their findings. By switching to some local suppliers, the school was able to reduce their energy use and GHG emissions while supporting local farmers without paying more for their lunches.

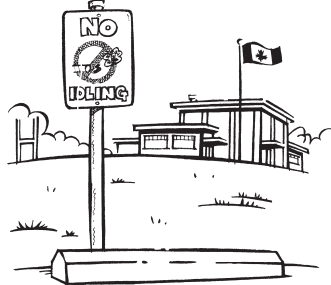




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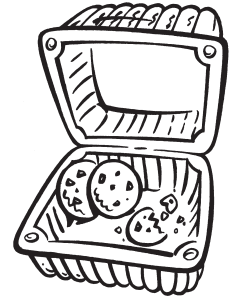
### Anti-Idling Zone

Students at a middle school in Prince George worked to monitor the number of seconds cars idled outside their school pick-up and drop-off zone. Many people think idling is good for car engines, but it isn't: according to car makers, 10 seconds of idling time is all most vehicles need to warm up (30 seconds on a cold winter day). If one person reduced car idling by 10 minutes per day, they save 125kg per person of GHG emissions per year. After advertising idling facts in the school newsletter and posting "Please No Idling" signs, students noted a significant reduction in car idling, and better air quality around the school.



### Over-Packaging Attack!

High school students near Kelowna went on a field trip to their local grocery store. They were recycling in their classroom, and noticed that a lot of the food sold at the store was over-packaged, especially fruits, vegetables and cookies. Excess packaging wastes energy and resources, and most of it gets dumped into landfills where burning and decomposition contribute greenhouse gases. The class decided to write to the store with their concerns, and collected samples of the excess packaging material to send along with their letters. The store manager personally visited the class and discussed ways that the packaging could be reduced, which the store eventually put into practice.



### Lights Out!

Students calculate the amount of energy used in their classroom by counting light bulbs and the hours they are on each day, and work to turn those lights off when not needed. Check all light bulb labels and identify their type (incandescent, compact fluorescent, halogen, fluorescent) and wattage (e.g. 23 watts, 100 watts). Count the bulbs in the class to estimate the total amount of wattage when all the lights are on, then figure out how long the lights are on each day. Multiply the hours by the watts to get watt-hours per day / week / month. By



turning off lights on bright days or when no one is using the classroom, figure out your energy savings.

### Community Recycling

Host a school wide Trade Day or Community Swap by asking students and staff to contribute items from home they are no longer using such as books, clothes, household items, etc. Some schools have even hosted "renewed" clothing fashion shows! This is a great way to promote re-use, recycle, reduce energy and resource consumption– and it's fun. Anything left over at the end of the day can be donated to a local charity group.



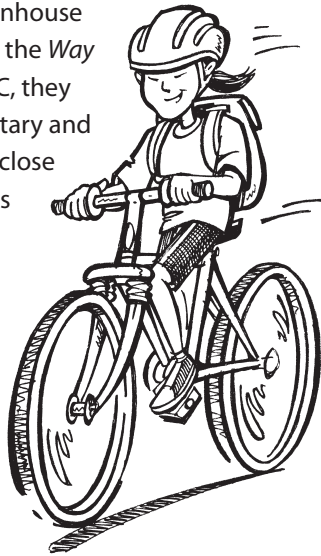


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## Climate Change Action Project Cards

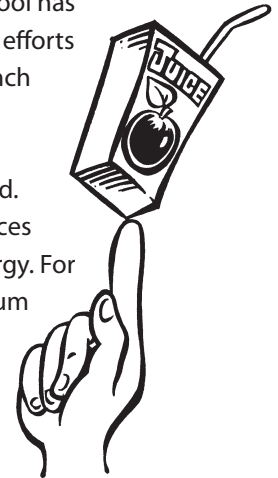
### Way to Go! Bike Path Partners

Middle school students developed a petition to lobby their municipal government for a bike path on a busy road near their school to encourage less driving, and thus less greenhouse gas emissions. Assisted by the *Way to Go!* Program run by ICBC, they partnered with an elementary and secondary school located close by, and organized students from all three schools to circulate the petition. City council asked the students to make a presentation and considered budgeting for the bike path.



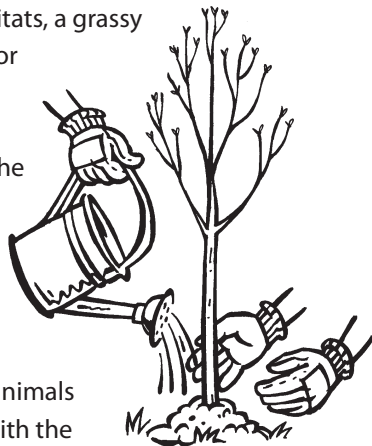
### Juice Box Power

Students at Westridge Elementary started up a recycling program for juice box/pop can/plastic bottles at their school. A system was established where every Friday afternoon the grade 6 class would collect and sort containers for recycling. The school has expanded their waste reduction efforts to include a weekly litter-less lunch program, and the money raised through the recycling program goes into a student field trip fund. Recycling keeps valuable resources out of the landfill and saves energy. For example, using recycled aluminum scrap to make new cans uses 95 percent less energy than making them from bauxite ore, the raw material.



### Get out the Trowels

Students from General Gordon Elementary in Vancouver created an outdoor classroom with butterfly and bird habitats, a grassy meadow and a place for kids to play in the shade of trees. An information board in the schoolyard provides information about the project, tips on how to green urban backyards, and facts about the plants and animals that share the space with the students. Trees and shrubs provide shelter and shade, reducing school heating/cooling costs, and green plants capture carbon dioxide.



### Take Back the Wetlands!

Black Mountain Elementary School in Kelowna sits on the hills overlooking Okanagan Lake and right next to the Gopher Creek wetland. In Spring 2000, students participated in a wetland restoration project, planting about 100 native riparian shrubs and trees including willow, alder, saskatoon berry and birch. Funding was provided for the project by the City of Kelowna and the Canadian Wildlife Fund. Now public awareness about the importance of wetlands has increased and the area is used as an outdoor classroom. Trees and shrubs provide shelter and shade and capture carbon dioxide, helping reduce GHG's.

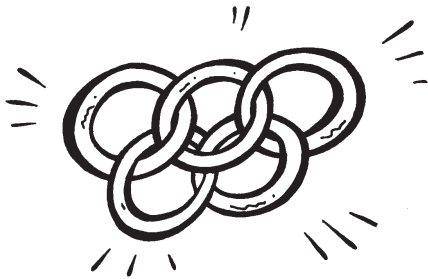




# Just Do It!

### Energy Conservation Olympics

Spark the competitive spirit! Organize Energy Conservation Olympics between different classes with the main goal of reducing resource and energy use to limit the amount of greenhouse gas emissions. Determine who recycled/reused/reduced the most, biked or bussed to school the most, shut off classroom lights the longest, developed the most creative announcements and posters regarding climate change actions, etc. Create the challenges, the form of recognition, and celebrate your success!



### Spread the News!

Set up and maintain a notice board or e-newsletter that lists upcoming local environmental events and action projects in the local community, city, and/or region that address the issue of climate change. Include a resource section, feature article, etc. Organize class or school participation in some of these events or projects.



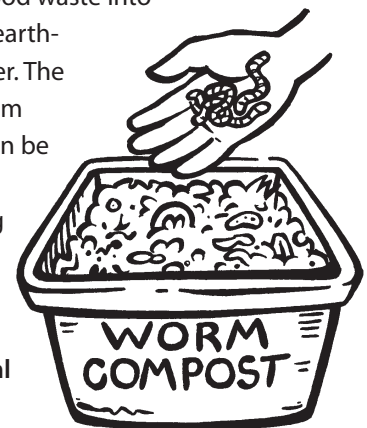
### Waste Audits

Conduct a waste audit of classroom garbage. For a week, garbage cans in the classroom, cafeteria or hall are dumped out, and the garbage sorted and identified. Students analyze data and identify what types of garbage are key issues. Brainstorm alternatives to the big garbage generators (e.g., recycling, composting, refusing excess packaging, public education through posters, garbage-free lunch events) and put one or more into action! Less packaging and garbage equals less greenhouse gases.



### Get Squirmin'

High school students in Fort St James learned about worms, composting and reduced their garbage at the same time by composting. The students adopted a red wiggler worm compost bin and learned how to maintain, harvest and use the compost. Worm composting is a method for recycling food waste into compost - a rich, dark, earth-smelling soil conditioner. The great advantage of worm composting is that it can be done indoors and outdoors, thus allowing year round composting. Check out [www.cityfarmer.org/wormcomp61.html](http://www.cityfarmer.org/wormcomp61.html) for how to get started.

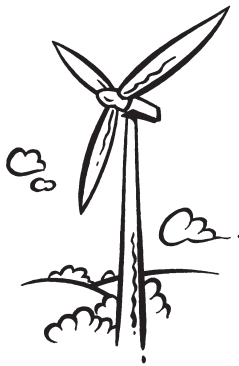




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### **Alternative Energy**

Research possible alternative sources of energy, including wind or solar power, and determine if any could be used at your school or in the community. Raise awareness at an assembly, through newsletters, or posters in the school hallways. Start raising funds and/or a letter writing campaign to the school district to consider implementing your suggestions.



### **Climate Change Action Project... your idea here!**

### **Climate Change Action Project... your idea here!**

### **Climate Change Action Project... your idea here!**



# Just Do It!

Name(s) \_\_\_\_\_  
 Date \_\_\_\_\_

## Action Project Rubric

Category	Expectation	4	3	2	1
<b>Project Development</b>	<i>Project is clearly outlined in proposal.</i>	Uses prior knowledge to identify a problem or issue. Has a clearly stated goal. Breaks project down into a series of steps that will lead to accomplishing the goal. Identifies complexities and challenges.	Uses some prior knowledge to identify a problem or issue. Has a clearly stated goal. Breaks project down into smaller steps that are somewhat sequential. Has not identified all the complexities and challenges inherent in addressing the problem or issue.	Has identified an appropriate problem or issue but lacks a clearly stated goal. Organized as a catalogue of information about the topic that does not necessarily lead to accomplishing the goal.	Problem or issue identified is too broad or vague to provide a coherent goal.
<b>Proposal Follow Through</b>	<i>Carries out steps outlined in proposal.</i>	Carries out each step of the proposal; follows proposal closely and adapts when necessary.	Carries out most steps in the proposal.	Carries out some steps of proposal; does not refer back to proposal during project or adapt appropriately.	Carries out few if any steps of the proposal; does not refer back to proposal during project.
<b>Interest and Investment</b>	<i>Demonstrates interest and investment in project.</i>	Demonstrates great enthusiasm about project and puts much time into carrying it out well.	Demonstrates interest in the project and makes sure it is completed.	Demonstrates little interest in the project; puts forth some effort to carry it out.	Demonstrates no interest in project; does not put forth effort to complete it.
<b>Collaboration</b>	<i>Collaborates effectively with team members; tasks delegated equally.</i>	Collaborates effectively with team members; all team members take significant role in project and encourage each other continually.	Collaborates with team members; most tasks are delegated evenly and team members share the load of the work.	Collaborates effectively with team members some of the time; some team members take on significant more work than others.	Does not collaborate well with team members; some team members take on all the work while others do nothing.
<b>Time Management</b>	<i>Manages time effectively.</i>	Manages time effectively and meets deadlines in place for project completion.	Manages time effectively most of the time.	Manages time effectively some of the time; does not meet all deadlines.	Does not manage time effectively; misses deadlines and procrastinates.
<b>Resourcefulness</b>	<i>Utilizes resources identified in proposal.</i>	Utilizes resources identified in proposal well and finds new resources as project progresses.	Utilizes most resources in proposal.	Utilizes some of the resources in proposal.	Does not utilize any resources for the project.
<b>Troubleshooting</b>	<i>Deals effectively with difficulties.</i>	Encounters difficulties in stride and brainstorm solutions to problems that arise; creative approaches to problem solving; when necessary, redefines goal and takes appropriate steps.	Encounters difficulties and is interrupted momentarily, but gets back on track by seeking the help of others.	Difficulties hold up progress often; makes an attempt to seek the help of others.	Does not overcome difficulties; does not ask for help when needed.
<b>Goal Accomplishment</b>	<i>Accomplishes goal of project.</i>	Accomplishes all aspects of the goal of the project.	Accomplishes parts of the goal of the project.	Makes an attempt to accomplish the goal of the project.	Does not attempt to accomplish the goal of the project.
<b>Reflection and Self-evaluation</b>	<i>Reflects on process and determines improvements.</i>	Thoroughly reflects on the process of the project. Provides insightful suggestions as how to improve a similar project in the future.	Reflects on the process of project and provides a few good suggestions as how to improve a similar project in the future.	Some reflection on the process of project and provides minimal suggestions as how to improve a similar project in the future.	Minimal reflection on the process of project and does not provide suggestions for improvement.

Source: This modified rubric is based on the 21<sup>st</sup> Century Skills Collaboration and Community Action Project Rubric. (cellt.org/diglig/2-14/ActionProjectRubric.pdf), Springfield Township High School Virtual Library (<http://www.sdast.org/shs/library/restrub.html>); and Action Research Project Scoring Rubric 2008-2009 ([www.sparonline.net/arc.html](http://www.sparonline.net/arc.html))

