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# Cycling for a Better World

*A solidarity ride enables students to take action on climate change both locally and globally*

**by Gilles Bélisle**

Can high school students change the world? Our experience at Jean-Baptiste-Meilleur Secondary School in Repentigny, Québec, shows that young people have the will and the power to do just that. Every spring for the last nine years, the students at our school have contributed their time and energy to solidarity rides: annual bike-a-thons whose aim is to build a better world. The interest in this program lies in its double challenge: to raise funds through sponsorships to help a developing country, and at the same time to work locally to improve the well-being and sustainability of the community.

Over the years, we have used several themes for solidarity rides, ranging from drinking water and soil erosion to children's rights. A few years ago, the ride's theme was climate change. The challenge for the students was, on the one hand, to raise money to fight desertification in Ghana through the planting of trees, and on the other, to collect signatures on a petition asking the mayor to fast-track the construction of a network of bicycle paths in Repentigny. The outcome: The students' solidarity ride raised $6,000 which was matched by the Canadian International Development Agency and given to an organization that is fighting desertification in Ghana; and their petition gave a major boost to the plans to establish a network of bicycle paths. But beyond the numbers, an entire school had been sensitized to the problem of climate change, its causes and its consequences. A group of young people had understood that, united, we can change things.

Photographs by Gilles Bélisle

*Solidarity ride in Repentigny, Québec.*

Given the enthusiasm shown by both the students and teaching staff for this program, I thought it might be interesting to share my experience, so that — who knows? — perhaps other solidarity rides might be organized in other parts of the world.

## Objectives of a solidarity ride

From an educational perspective, the main goal of a solidarity ride is to lead students to:

- learn about the causes and consequences of climate change;
- learn about the links between climate change and other environmental problems such as deforestation and desertification;
- appreciate that since climate change does not respect borders, we must not only do something in our own neighborhood, but also support and assist people in poorer regions of the world;
- become involved in the fight against climate change through concrete actions of solidarity.

## Getting organized

A solidarity ride can have a tremendous impact on the entire community — provided that it is a success! And to succeed, adequate preparation and lots of organizing are essential. It is a good idea to set up a small cycling committee that includes teachers, students, administrators, parents, professionals and support staff. In addition to providing the project initiators with invaluable support, such a committee will encourage all members of the school community to consult with one another, take responsibility and get involved.

## Awareness-raising and education

In order to achieve the goals of the solidarity ride, the focus must be on awareness-raising and education. The cycling committee could prepare a short presentation to be given to each class. The presentation could focus on:

- the concepts behind the greenhouse effect;
- the causes and consequences of climate change;
- the importance of trees in the fight against climate change;
- the problems of deforestation and desertification, especially in the developing countries that the school has decided to help;

- In the colder months designate a student or staff member to close the curtains at night to conserve heat and to open them during the day for solar warmth and natural light.
- Launch a "Heat Down" campaign which includes a "Sweater Day" for students and staff.

### Technical controls

- Ensure that the school's furnaces are computer-controlled for energy efficiency.
- Insulate hot water pipes and hot water tanks to reduce energy consumption.
- Ensure that insulation is upgraded to current standards during renovations or retrofits.
- Install timers on thermostats to turn heat down at night, on weekends or during holidays when the school is closed.
- Consider installing solar walls on the south side of the building, thus using passive solar energy to heat outside air for use inside the school.
- Install a building automation system to control the heating. These systems monitor outdoor air temperature and supply heat only as needed. They can also be scheduled to heat only when the building is occupied.

## Lighting

Lighting consumes 60 percent of the electricity used in the average school.

- Keep hall lights off in the morning until students arrive.
- Put tape over the switches of lights that are not needed.
- Start a "Lights Off" campaign so that lights are not used during sunny days or in rooms that are not occupied.

### Technical controls

- Reduce lighting in overlit areas. Excessive lighting can cause headaches and is associated with hyperactivity in some children.
- Replace exit lights with L.E.D. exit panels that use less than two volts.
- Arrange for a lighting retrofit or include it in modernization plans. New T-8 fluorescent lamps and electronic ballasts are, on average, 24 percent more efficient, provide a more natural light and have a longer life span than standard fluorescent lighting. They are also quieter and have no visible flicker.
- Install motion sensors in washrooms so that lights, and water pumps on urinals, operate only when there is an occupant.
- Install skylights as a means of increasing the use of free, natural light.
- Install switch timers in storage closets. These will automatically turn off the lights after a preset time period.

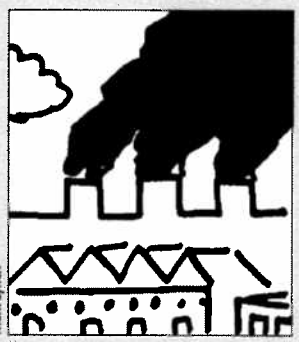
## Transportation

- Take an annual climate change poll at your school. Ask students and staff how they get to school each day and how far they travel. Graph the results, showing the

### How to calculate your school's $CO_2$ emissions (An exercise for the very ambitious)

WHILE IT IS POSSIBLE TO CALCULATE your school's annual contribution to global warming, it does require a bit of research. Here's how to get started.

To compare your school's carbon dioxide ($CO_2$) emissions in 1990 and 2000, for example, start by obtaining copies of the utility bills for these periods. These should be available from your maintenance department, school board office or local utility company. Both electricity and heating fuel contribute directly to the accumulation of greenhouse gases, so both should be evaluated.


Mark Lynch

By calculating the total energy or fuel consumed each year and multiplying it by a conversion factor, you will be able to determine the amount of $CO_2$ produced. For instance, the calculation for natural gas is gigajoules x 0.05916667 = tonnes $CO_2$. The $CO_2$ conversion factors must be obtained from your local utility because they are specific to the fuel used and to the units in which consumption is measured (some natural gas bills show consumption as units of energy, others show it as a volume of gas).

The conversion factor for electricity depends on the resource that is used for generating it. For example, in Alberta where 85% of electricity is generated from soft coal the conversion equation for electricity is kilowatt-hours x 0.00009838 = tonnes $CO_2$. The equation will be different in regions where most electricity is produced from nuclear energy, oil or hydroelectric power. You will need to research the sources of your electricity and ask your local utility company to provide the corresponding conversion equation.

More precise results are obtained by normalizing the data for each year, taking into account factors such as weather variations, changes in the size of the school population, and building renovations.

A detailed analysis can become quite complicated and, for most schools, is unnecessary. The main point of initiating action on climate change is not to determine exact emissions levels but to implement day-to-day solutions to reduce our contribution to the problem.

***— Tom Yohemas***

percentages of people who walk, bike, drive or take public transit. Research the average fuel efficiencies of cars and buses in your area. Using the statistic that vehicles release 2.35 kilograms of carbon dioxide for every liter of gasoline consumed (18.8 pounds per US gallon), determine the total amount of carbon dioxide released by these vehicles in their daily trips to and from school. Graph the emissions of each transport group and post these in the school's main hallway. Repeat this poll each year and make comparisons with previous years.

- Publicize the environmental benefits of public transit. Make posters comparing the different public space requirements of cars, buses and bicycles. Cooperate with local transit authorities to develop advertisements for public transit.
- Discourage parents and school bus drivers from idling their engines in front of the school.
- Encourage carpooling among teachers and older students to save energy and reduce fuel bills and $CO_2$ emissions.
- Start a bicycle club. Have older students teach bike maintenance to younger students. Sell bike helmets as a fundraiser.
- In northern regions where school parking lots have electrical outlets for engine block heaters, use "flip flop" controls that charge only half of the cars at any given moment. Alternatively, vehicles could be plugged in manually by students only when temperatures drop.
- Charge a small fee for parking in the school lot and use the money for treeplanting and other environmental projects.

## Treeplanting

As carbon sinks which take up and store atmospheric carbon, trees play a major role in reducing greenhouse gases.

- Celebrate Arbor Day or May Day with guest speakers and treeplanting to promote community greening.
- Research the importance of protecting rainforests as a means of conserving one of the Earth's largest carbon sinks. The burning of rainforests directly releases massive amounts of $CO_2$, and the replacement of rainforest vegetation with food crops or grass for grazing seriously reduces the planet's carbon storage capacity.
- Adopt a tree in your community.
- Plant deciduous trees on the south side of the school to cool the building and reduce the need for air conditioning during warm months.
- Plant coniferous trees on the north and west sides of the school to reduce the impact of cold winter winds and reduce heating demand.
- Support wilderness protection, since the vegetation in natural areas absorbs greenhouse gases.

## Water Use

Reducing water usage also reduces the energy required for pumping and purifying it.

- Have students survey how much water is used in the school and brainstorm how it can be conserved.
- Eliminate lawn watering by landscaping with native species that require little water.
- Place plastic bottles in toilet tanks to reduce water use.
- Ask local restaurants to serve water only upon request.

### Technical controls

- Install low-flow shower heads to save water and reduce the amount of energy used to heat water.
- Retrofit plumbing to reduce inefficiencies in the use and heating of water.
- Place timers on the boys' urinals to reduce usage of water and electricity. Install water dams in toilets, as they reduce water consumption by 30 percent.

## Renewable Energy

Using alternative sources of energy such as wind and solar reduces our use of fossil fuels.

- Create displays on energy-efficient homes as part of a science fair to educate parents and staff about solar power, insulation, caulking and weatherstripping.
- Make simple solar cookers and food dryers to demonstrate a sustainable means of preparing food.
- Install solar water heaters as part of a retrofit or renovation of the school.
- Contact local renewable energy groups for advice and information.

## Recycling

Recycling metal, paper, glass and other materials into new products requires less energy than making the same products from new materials.

- Purchase school supplies made from recycled materials.
- Encourage paper recycling to reduce the need to cut carbon-storing trees.
- Ask school district authorities to agree to return a portion of the money saved in reducing the school's paper use. Use the funds to support environmental projects.

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