



Simcoe County
District School Board

ENERGY

conservation

GUIDE



ecoschools

Acknowledgements

This guide is an adaptation of the EcoSchools *Energy Conservation Guide* produced by the Toronto District School Board (TDSB). The TDSB has donated this resource to the Ontario EcoSchools Program as part of its in-kind contribution to the project.

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► ENERGY CONSERVATION: WHY IS IT IMPORTANT?

Canada, along with the United States, is one of the highest energy consuming nations in the world. And although we derive nearly 60% of our electricity from hydroelectric (water-powered) sources, much of the energy consumption in Canada involves burning fossil fuels (coal, oil and natural gas). While our access to abundant and inexpensive energy supplies contributes to our high standard of living, burning large quantities of fossil fuels also has serious environmental and health consequences.

What exactly are these consequences? The burning of fossil fuels releases particulate matter into the air, causing smog that contributes to health problems and even premature deaths, particularly among the elderly. Fossil fuel consumption (primarily coal) also causes the formation of acid rain that damages forests, lakes and buildings. Most importantly, scientists now generally agree that greenhouse gas emissions produced by burning fossil fuels are contributing to global climate change.

In addition to its environmental costs, the financial cost of school boards' energy use has risen dramatically. *Every dollar that we don't have to spend on energy could be directed back to cleaning and maintaining schools.*

In recent years, many schools have upgraded lighting and installed computer-controlled temperature systems to make the buildings more energy efficient. But the *people* in our school buildings - teachers, students, support staff and other members of the school community - can also make a big difference in school energy use! While savings estimates vary, school communities can expect to reduce their school's energy consumption by 5 - 10% by adhering to the Simcoe County District School Board Ecoschools Energy Conservation Guidelines.

► ENERGY CONSERVATION, CLIMATE CHANGE AND ECOSCHOOLS

Keeping the natural environment healthy for future generations depends on everyone's participation. Climate change is one of the most serious threats to a healthy environment, and schools and school boards have a vital role to play in helping students and staff understand what they can do about it. EcoSchools helps to make explicit the connection between conserving energy and reducing climate-changing greenhouse gas emissions.

The EcoSchools program introduces an environmental perspective to the choices we make in operating our schools and in planning classroom programs - we learn not only about what to do, but also why. This *Energy Conservation Guide* provides a set of tools to help your school develop a systematic approach to energy conservation as a part of everyday school life.

Did you know?



*If students and staff in 1000 classrooms turned off their lights for 3 hours per week when they might otherwise have been left on, a school board would save \$32,000 per year and reduce its carbon dioxide emissions by 100 tonnes.**

*Based on *Energy Management and Sustainability at the Toronto District School Board* (September 2003).

► INTRODUCING THE SIMCOE COUNTY DISTRICT SCHOOL BOARD'S ECOSCHOOLS ENERGY CONSERVATION GUIDELINES

The Energy Conservation Guidelines outline the minimum day-to-day practices and behaviours that schools are encouraged to support. These guidelines may be implemented in stages. *It is highly recommended that schools focus first on establishing or improving school-wide*

strategies for ensuring that lights are turned off when not needed and computer monitors are turned off when not in use. When schools work together they can make a significant contribution to reducing their environmental impact and also save money.

The following Guidelines form the basis of the Energy Conservation EcoReview:

Lights and Equipment

- (1) Lights are turned OFF when not required.
- (2) Computer monitors are either turned OFF or computers are put to SLEEP when not in use.
- (3) Computer peripherals such as printers, scanners and other electronic equipment are also turned OFF when not in use.
- (4) Only the most energy efficient equipment is purchased (e.g., Energy Star).
- (5) An equipment consolidation program is implemented to ensure that energy is not wasted by using more equipment than is necessary (e.g., reducing the number of computer printers through networking).

Heating and Air Conditioning

- (6) Windows and curtains are closed at the end of the school day.
- (7) Space around vents on walls or window sills is kept free of obstruction.
- (8) Doors to the outside of the building are not left open longer than necessary.
- (9) The school adheres to Board standard room temperatures and makes maximum use of its computer controlled temperature system (if available).
- (10) Mechanical equipment and water faucets are checked regularly and problems are reported promptly.

For the long-term success of this program, it will be critical to seize opportunities to explain to staff, students and parents why these activities are important. Teachers are encouraged to use Energy Conservation by Grade (1-8) in the Ontario Ecoschools series to connect energy conservation efforts to their curriculum.

► THE SCDSB ECOSCHOOLS FIVE-STEP PROCESS

SCDSB EcoSchools is a simple program designed to help schools take an organized approach to improving their environmental performance. The five-step process is adapted from an environmental management system developed to give organizations a method for fostering continual improvement. To help you get started, specific samples of an Energy Conservation EcoReview (Step 2) and Action

Plan (Step 3) are included in this guide. Monitoring and evaluation of progress (Step 5) should include completion of the SCDSB environmental incentive program questionnaire titled *How Green is Your School*. The completed questionnaire is to be submitted to Facility Services by the April deadline. Detailed instructions are available from the Facility Services Department.



The power of Simcoe County District School Board's students and staff to make a difference by conserving energy is enormous, especially when everyone participates!

Step 1. Establish the EcoTeam.

Include representatives from across the school community. Please see the *Introduction to EcoSchools and the Five-Step Process Guide* for helpful and concise information about who should be on the team, what the EcoTeam does, how to facilitate good teamwork and the special role of the principal.

Step 2. Assess the needs of the school through the EcoReview

to discover where energy can be conserved. The EcoReview on the next page provides an example to help you with your own school's review based on the Energy Conservation Guidelines. A blank template for planning appears in the Toolkit (page 16).

Did you know?



If 1000 computers were on continuously, the electricity consumed would cost \$100,000 annually. If monitors were turned off (or put to sleep) whenever they are not in use, overall power consumption could be cut by 50%.

Sample: ENERGY CONSERVATION ECOREVIEW

The following review provides an example to help you with your own school's review based on the Energy Conservation Guidelines. The Comments Section has been used extensively to set the energy conservation targets and help craft the school Action Plan (Step 3).

Guidelines	level 1	level 2	level 3	level 4	Comments
	Just Beginning	Approaching Implementation	Implemented	Extensively Implemented	
LIGHTS AND EQUIPMENT					
1) Lights are turned OFF when not required.	X				some staff and students turn off lights, but this practice is not standard throughout the school.
2) Computer monitors are either turned OFF or computers are put to SLEEP when not in use.		X			Office PC computer monitors are often left on when not in use. Computer classes generally do put their Macs to sleep at the end of each period.
3) Computer peripherals such as printers, scanners and other electronic equipment are turned OFF when not in use.	X				Not consistently.
4) Only the most energy efficient equipment is purchased (e.g. Energy Star).		X			some equipment (computers) are Energy Star rated but no conscious effort has been made to buy only energy efficient machines.
5) An equipment consolidation program is implemented to ensure that energy is not wasted by using more equipment than is necessary (e.g., reducing the number of computer printers through networking).	X				No equipment consolidation plan has been developed or implemented. It appears that we have more computer printers than we need.
HEATING AND AIR CONDITIONING					
6) Windows and curtains are closed at the end of the school day.		X			some blinds need fixing, windows and curtains are usually closed after school, but no systematic effort has been made to ensure that this happens.
7) Space around vents on walls or window sills is kept free of obstruction.		X			some vents are blocked in classrooms.
8) Doors to the outside of the building are not left open longer than necessary.	X				Doors are left open longer than necessary during school entry times.
9) The school adheres to Board standard room temperatures and makes maximum use of its computer controlled temperature system (if available).				X	Yes, the custodian does ensure that standards are adhered to and the system is working. Staff and students understand that these steps save energy and reduce greenhouse gas emissions.
10) Mechanical equipment and water faucets are checked regularly and problems are reported promptly.				X	Weekly inspection by custodian. Staff and students report problems promptly.

See the Toolkit (page 15) for a **BLANK** copy of the EcoReview template to aid the EcoTeam in preliminary planning.

Definitions of Rubric Levels used in the EcoReview

The definitions of the rubric levels that appear in the review on the previous page

will help you decide at which level to place your school for each activity that you are assessing.

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Just Beginning	Approaching Implementation	Implemented	Extensively Implemented
Practices your school does not yet participate in	Practices are being implemented slowly and/or there is not school-wide participation	Practices are commonplace within your school	Practices are not only standard within your school, but are taken to the next level

Tips for Conducting an Effective EcoReview

- ▶ Visit all rooms in the school including offices, lunchrooms, resource centre, gym and classrooms.
- ▶ Try to complete the review within a short time. This allows you to remember and document what is happening in your school.
- ▶ Be a detective: ask more than one person for the answer to get a bigger picture of what is actually going on!
- ▶ Get classes involved in doing the review. Participation can provide leadership opportunities that encourage students to take an interest in their school environment. Including the student perspective will also give a more complete picture of the perceived as well as the actual practices occurring in the school.

Encouraging students and staff to turn off computer monitors when not in use is an important element of building a “culture of conservation” throughout the school community.

Step 3. Identify priorities and develop the Action Plan

for conserving energy in your school.

Record decisions in a School Improvement Plan Template. The template on the next page provides a sample to help you with your school’s Action Plan in response to the EcoSchools Energy Conservation Guidelines. The examples we have chosen illustrate school-wide strategies for ensuring that lights are turned off when not needed and computer monitors are turned off when not in use.

Step 4. Implement the Action Plan

involving the entire school community. Emphasize whole school participation. Please see the *Introduction to EcoSchools and the Five-Step Process Guide*

for suggestions about supporting team members and developing communication strategies both to make your EcoSchools initiatives stand out and to encourage broad participation. Sample announcements are included in the Guide.

Step 5. Monitor and evaluate progress.

Recognize and celebrate successes. Please consult the *Introduction to EcoSchools and the Five-Step Process Guide* for helpful tips in conducting this final step. The evaluation includes submission of your school’s *How Green is Your School* questionnaire to the Facility Services Department by the deadline.

Sample: SCHOOL IMPROVEMENT PLAN TEMPLATE FOR RECORDING ECOSCHOOLS ACTION PLAN

School:
<p>Areas of Focus: ECOSCHOOLS—ENERGY CONSERVATION</p> <p>LIGHTS AND EQUIPMENT</p> <p>HEATING AND AIR CONDITIONING</p>
<p>Refer to your EcoReview Comments section as you complete your Action Plan below.</p>

Targets (What do we need to improve?)	Actions (How will we achieve the targets?)	Indicators of Success (How will we know we have achieved the targets?)	Resources (How much will it cost?)			Budget Responsibility (Who will hold the budget?)	Timelines (Start Date / End Date)	Results (To what degree have we met the targets?)			
			Human	#	\$				Material	#	\$
Conserve energy use in the school.	1. Lights are turned off when not required. <div>a. Each classroom will have monitors whose responsibility will be to turn lights off when not needed.</div> <div>b. The grade 4 classes will periodically track and report the "lights-off" efforts of each class to the whole school.</div>	Number of lights turned off when the classrooms are empty. This will be assessed informally and reported on by the Eco Team at three different times throughout the year.	Students and classroom teachers	2 students per class per week	N.A.	Energy Conservation posters, Lights OFF stickers	As needed per class-room	nil	N.A.	Sept. 30/03 - June 30/04	(Record results after analyzing progress at year end.)
	2. Computer monitors are either turned OFF or computers are put to SLEEP when not in use. <div>a. Each classroom will have students whose responsibility will be to turn OFF computer monitors when not in use.</div> <div>b. The Grade 3 class will periodically track the "monitors OFF/sleep your Mac" efforts of each class and report to the whole school.</div>	Number of monitors turned off and computers put to sleep when not in use. This will be assessed informally and reported on by the Eco Team at different times during the year.	Students and classroom teachers	2 students per class per week	N.A.	Monitors OFF/Sleep your Mac stickers	50 stickers	N.A.	N.A.	Sept. 30/03 - June 30/04	(Record results after analyzing progress at year end.)

See the Toolkit section (page 16) for a **BLANK** copy of the School Improvement Plan Template to record Action Plan decisions and results.



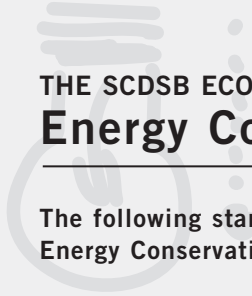
The Energy Conservation Toolkit

This energy conservation toolkit includes ideas and resources to support schools in their quest to conserve energy. We hope that what we have provided here will help to make the planning and implementation of the energy conservation strategies of your school easier, more lively, and more effective!

Over time changes may be made to the resources and information in the following pages. For the most up-to-date information, contact the SCDSB Environmental and Energy Systems Co-ordinator in the Facility Services Department.

ENERGY CONSERVATION GUIDELINES POSTER

This poster may be ordered from the Environmental and Energy Systems Co-ordinator in the Facility Services Department.



THE SCDSB ECOSCHOOLS

Energy Conservation Guidelines


The following standards form the basis of the Energy Conservation EcoReview:

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- (5) An equipment consolidation program is implemented to ensure that energy is not wasted by using more equipment than is necessary (e.g., reducing the number of computer printers through networking).

Heating and Air Conditioning

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ENERGY CONSERVATION STICKERS

Posters and labels serve as constant graphic reminders of ways for staff and students to conserve energy.

Students can make posters for the school. Be sure that students are given accurate information to work with and supervise their creations to ensure that text and illustrations clearly indicate the correct information. Contact the Environmental and Energy Systems Co-ordinator in Facility Services for assistance.

Below are samples of one Board's energy conservation labels.



SCHOOL VENDING MACHINES

Many schools have vending machines that sell cold drinks as well as snacks. These machines constantly use electricity, even when it is not necessary. Technology is available that will power down the machines when they are not being used, saving energy and therefore reducing greenhouse gas emissions. One Board that uses this technology estimates that it has reduced its greenhouse gas emission by 280kg/year per vending machine. With almost 800 vending machines in the Board, this means that greenhouse gas emissions have been reduced by 221 metric tonnes annually.

This reduction in electricity use also saves money. Each vending machine with energy saving technology installed can save about \$90/year in electricity costs. Try contacting your Facility Services or Purchasing Department to find out if your Board has purchased this technology. If it is available, find out how it can be installed in your school's machines. Record the contact information below.



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ECOREVIEW: ENERGY CONSERVATION

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6) Windows and curtains are closed at the end of the school day.					
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9) The school adheres to Board standard room temperatures and makes maximum use of its computer controlled temperature system (if available).					
10) Mechanical equipment and water faucets are checked regularly and problems are reported promptly.					

Enlarge to 11" x 17" to make this a more useful working document for your EcoTeam.

SCHOOL IMPROVEMENT PLAN TEMPLATE FOR RECORDING ECOSCHOOLS ACTION PLAN

School:
<p>Areas of Focus: ECOSCHOOLS—ENERGY CONSERVATION</p>
<p>LIGHTS AND EQUIPMENT</p>
<p>HEATING AND AIR CONDITIONING</p>

} Refer to your EcoReview Comments section as you complete your Action Plan below.

Targets (What do we need to improve?)	Actions (How will we achieve the targets?)	Indicators of Success (How will we know we have achieved the targets?)	Resources (How much will it cost?)			Budget Responsibility (Who will hold the budget?)	Timelines (Start Date / End Date)	Results (To what degree have we met the targets?)
			Human #	\$	Material #	\$		

Enlarge to 11" x 17" to make this a more useful working document for your EcoTeam.

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