



ENERGY CONSERVATION

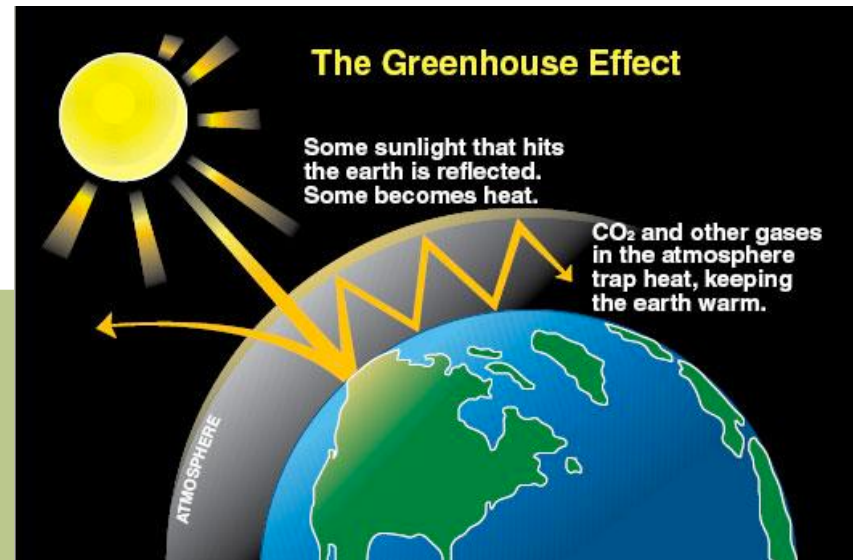
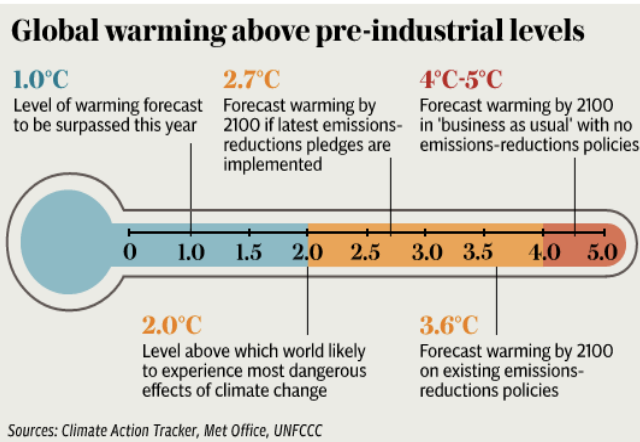


WHY IS IT SO IMPORTANT TO SAVE ENERGY?

We all know it is the 'right thing' to do. We also know that saving energy helps save us money at home and at school, so we can budget towards other, essential items.

But what are the *most* pressing reasons?

- Pollution
- Climate Change



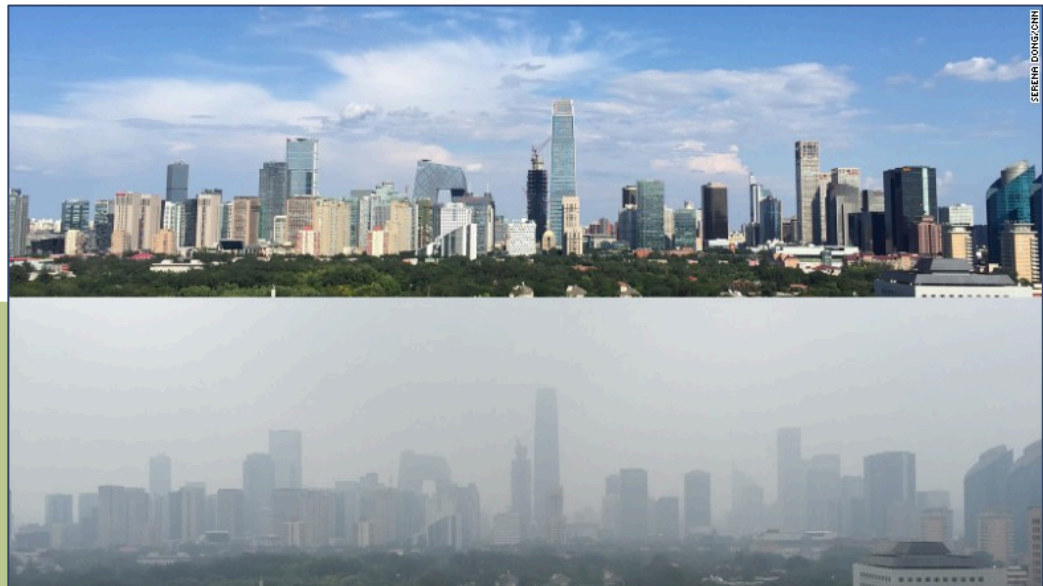
WHY IS IT SO IMPORTANT TO SAVE ENERGY? TO STOP POLLUTION



Every time you ride in a car, or turn on a light, or buy a new electronic device, the energy you use creates pollution, including harmful gases.

Some pollution stays near the ground and causes toxic smog and causes people to have respiratory problems. In some cities in China, people now wear masks and parents can't let their kids go outside to play.

This photo shows two images of Beijing. 1) Top - of a blue sky day from a week before an important military parade (factories had been shut down and cars were banned) and 2) Bottom - of the return of smog the day after the parade.



WHY IS IT SO IMPORTANT TO SAVE ENERGY? TO STOP CLIMATE CHANGE



Burning fossil fuels to generate energy releases greenhouse gases, which rise up into our atmosphere and trap in extra heat which causes climate change.

1. Climate Change Affects our EcoSystems

“Some species and communities such as polar bears and alpine meadows may be left without any remaining viable habitat, putting much of our treasured wildlife at risk.”

<http://www.nature.org/>



WHY IS IT SO IMPORTANT TO SAVE ENERGY? TO STOP CLIMATE CHANGE



2. Climate Change Affects our Water and Food Resources

“Climate change could make it too hot to grow certain foods, and droughts caused by climate change could reduce the amount of water available for watering food crops.

Climate change is affecting where, when, and how much water is available for people to use. Many parts of the world already have very little water, and climate change could make this problem worse.” <http://www3.epa.gov>



WHY IS IT SO IMPORTANT TO SAVE ENERGY? TO STOP CLIMATE CHANGE



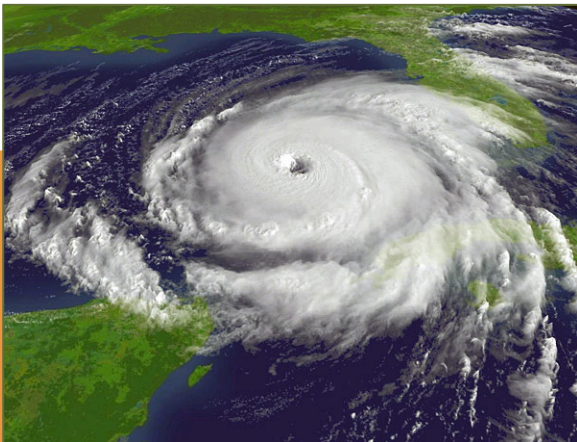
3. Climate Change Affects our Weather

“Carbon pollution is the main reason our planet is getting hotter, increasing the chances of weather disasters, drought, fires, and flood.



There are solutions! For starters, we can cut carbon pollution by reducing our dependence on fossil fuels and increasing our use of clean, renewable energy.”

<http://www.nrdc.org/globalwarming/climate-change-impacts>



Powerful Quotes from the opening day of the 2015 Paris climate change talks



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

"Billions of people are pinning their hopes on what we do in Paris."

German Chancellor Angela Merkel

"This is the fight of our generation ... the entire planet is in danger"

King Abdullah of Jordan

"In damaging our climate we are becoming the architects of our own destruction"

Prince Charles

"We would need at least four planets to maintain our current way of producing, living and consuming... we only have one". *EC President Jean-Claude Juncker*

"Climate change is one of the greatest challenges humanity is facing."

Vladimir Putin, Russian president

"The world has almost run out of time to tackle climate change."

US President Obama

"The UN secretary-general should "declare a global emergency to show that the world is in trouble" *President of Micronesia Peter M. Christian*

THE TIME FOR ALL OF US TO ACT IS NOW!

ENERGY CONSERVATION CAMPAIGN



KEY STEPS FOR A SUCCESSFUL ENERGY CONSERVATION PROGRAM



Step 1

- Plan the Effort and Share the Vision

Step 2

- Design and Implement the Program

Step 3

- Provide Support and Resources

Step 4

- Check Progress and Evaluate Results

Step 5

- Sustain the Effort





ENERGY CONSERVATION PROGRAM

Step 1

•Plan the Effort and Share the Vision

VISION

“Students and staff in all schools will work together with our community partners to become environmentally responsible citizens in a safe, healthy and sustainable environment. We will do this through the delivery of integrated environmental curriculum and programs, and by supporting environmentally appropriate behavior and operational practices.”

Excerpt from the UGDSB Environmental Education and Management Committee

ENERGY CONSERVATION PROGRAM



Step 2

•Design and Implement the Program

WHAT WE NEED TO DO

New Behaviours for:

- Lights
- Technology
- Transportation
- Heating and Cooling
- Personal Comfort

Implement Strategies:

- Kick- off Assembly
- Energy Conservation Posters
- Announcements
- Bulletin Boards
- Competitions/Rewards/Incentives

Tips on How to Save Energy at School

PERSONAL COMFORT

Keep a sweater handy

No need to turn up the heat or air conditioning!




Dress in layers



LIGHTS

Turn off when leaving the room

Use natural light when possible







TECHNOLOGY

Celebrate earth hour every day! Turn off the lights at lunchtime.






Turn off when not in use



TRANSPORTATION

Bike, walk or roll to school


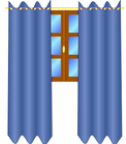


HEATING/COOLING

Vents on window sills, etc. kept clear

Curtains/blinds closed at end of day

Close windows when heating or cooling and at the end of every day



ENERGY CONSERVATION PROGRAM



Step 3

• Provide Supports and Resources

AVAILABLE RESOURCES

- Powerpoint Presentation
- Morning Announcements
- Newsletter Insert
- Poster
- Earth Hour
- Earth Day
- National Sweater Day
- International Walk to School Day
- EcoSchool Checklists & Worksheets
- Online Lesson Plans
- Online Energy Videos



ENERGY CONSERVATION PROGRAM

COMMUNICATION IS KEY!

ENERGY CONSERVATION – Morning Announcement



1ST WEEK'S ANNOUNCEMENT

The environmental theme for this month is energy conservation.



Simply put - Energy makes us cool down, turn on and use energy sources such as fossil fuels. Every time you ride in a car or use an electronic device, the energy creates harmful gases. Some pollutants are toxic smog and causes people to have asthma. In China, people now wear masks and play. We are lucky in Canada that we don't but we want to keep it that way. So we need ways to stop wasting energy and on.

Stay tuned for next week's announcement a bit more about how using too much energy causes climate change.

Slogan of the week: Conserve our energy!

ENERGY CONSERVATION – SCHOOL NEWSLETTER INSERT



We all know saving energy is the 'right thing' to do. Every time you ride in a car, or turn on a light, or buy a new electronic device, the energy you use creates pollution, including harmful gases.

We can make a big difference!

Canadians are far too wasteful – we really don't need to use so much! Each of us can make a big difference by thinking about our habits and making changes, starting today.

What should we do?

- ✓ Walk, bike or roll to school – use the car less often!
- ✓ Turn off lights when the room is empty or when natural light is sufficient.
- ✓ Put computers, monitors, printers, photocopiers and other electronics on standby or sleep mode when not in use and turn them off at the end of the school day.
- ✓ Celebrate Earth Hour every day – at lunchtime' turn off the classroom lights!



ENERGY CONSERVATION EVENTS



EARTH HOUR



- Resources available from <http://www.earthhour.org/>
- Video: [Use Your Power to Change Climate Change](#)



EARTH DAY



Earth Day[®]
CANADA



- Resources available from <https://earthday.ca/> or <http://www.earthday.org/>
- Video: [The Wonders of Planet Earth](#)

ENERGY CONSERVATION EVENTS



NATIONAL SWEATER DAY

- Ideas available from [National Sweater Day / WWF](#)



INTERNATIONAL WALK TO SCHOOL DAY/WEEK

- Resources available from [Active and Safe Routes to School](#)
- And from [iwalk- International Walk to School](#)



GREAT RESOURCES FROM ECOSCHOOLS FOR ENERGY CONSERVATION

■ Certification Points



ENERGY CONSERVATION - CLAIM 20 POSSIBLE POINTS

	Points
2.1 Staff and students turn off lights when not needed	3
2.2 Electronics (computers, monitors) turned off when not in use	3
2.3 Printers, photocopiers on standby or turned off at end of day	1
2.4 Computers and Printers networked and consolidated to reduce numbers	1
2.5 Close blinds/curtains when needed to minimize heat loss	1
2.6 Classroom air vents (e.g., on window ledges) kept clear of paper, etc.	1
2.7 Exterior doors not left open	1
2.8 Board adheres to standard room temperatures	1
2.9 Regular Inspections of mechanical equipment, etc.	2
2.10 Students regularly monitor energy conservation practices	2
<i>Proof – three energy conservation walkabout worksheets completed on different dates</i>	
2.11 Students communicate energy conservation goals and successes	2
<i>Proof – announcements, newsletter inserts, or bulletin board of results</i>	
2.12 Students explore energy conservation results	2
<i>Proof – classroom lighting worksheet or equivalent</i>	

GREAT RESOURCES FROM ECOSCHOOLS FOR ENERGY CONSERVATION



- Tracking sheets
- Turn off lights/monitors stickers

ENERGY CONSERVATION WALKABOUT WORKSHEET

	Are lights turned off when not required?	Are electronics (monitors, LCD projectors, smart boards, etc.) turned off when not in use?	Are printers, scanners, and photocopiers on standby when not in use and turned off at the end of the day?	Are heating and cooling vents clear of any obstructions?
DATE				
ROOM				



GREAT RESOURCES FROM ECOSCHOOLS FOR ENERGY CONSERVATION

■ Energy Saving Ideas



Energy Hogs



When a classroom has left a light or other electronics on while they were not present, place the Energy Hog on the teacher's desk. It is up to the classroom to find the next room that has left on the lights, etc. to get rid of the Hog!

Energy Awards



There are many creative ways to highlight your school's eco-achievements. Giving awards to classrooms that hosting 'earth hour' lunches can build momentum around energy conservation at your school.

Computer Monitor Monsters



Made out of pompoms and googly eyes, these friendly monsters can be left in libraries and computer labs to remind users to turn off monitors when they leave.

GREAT RESOURCES FROM ECOSCHOOLS FOR ENERGY CONSERVATION

Lesson Plans



Date



SCHOOL ENERGY CONSUMPTION ASSESSMENT WORKSHEET

Adapted from EcoSpark's Wattwise: Teacher Guide Handout #1, available at ecospark.ca

Develop a more complete picture of your school's overall energy use to inform best practices and support your energy conservation goals. Consider enhancing classroom learning by using the information collected on this worksheet as part of an energy unit.

School Name: _____ Board: _____

Year School Built: _____ Size (sq ft): _____ Current Student Popul: _____

Electricity Consumption Information and Calculations

Monthly electricity use: _____ (kWh) Month: _____

Last year's electricity use for the same month (if available): _____

Annual electricity use (if available): _____ Year: _____



COMPARING LIGHT BULBS



Grade 6, Science and Technology

Source: Adapted from TDSB's Heat in the Environment

DESCRIPTION

In this learning activity, students will explore their daily energy use and ways to reduce their energy consumption. They will do a hands-on experiment to compare the amount of heat that incandescent and fluorescent light bulbs use.

CURRICULUM LINKS - SCIENCE AND TECHNOLOGY, GRADE 6

Understanding Matter & Energy- Electricity & Electrical Devices

Overall Expectation: 1

Specific Expectations: 1.1, 1.2, 2.1, 2.6

PLANNING NOTES

Materials

- 2 lamps
- 2-3 incandescent light bulbs
- 2-3 fluorescent light bulbs

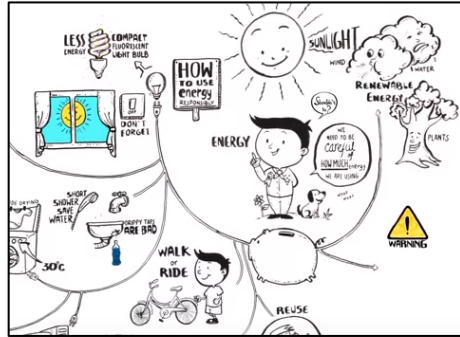
Prior Learning

The use of energy improves our lives, but has many different kinds of impacts on the environment. In recent years, more attention has been paid to generating electricity in more

FIND LOTS OF RESOURCES ONLINE!



■ Energy Videos



[How To Save Energy for School Teaching](#)



[Different Sources of Energy, Using Energy Responsibly](#)

■ Lesson Plans

- [Canadian Geographic Classroom Energy Diet Challenge](#)
- [National Geographic Climate & Energy Guides](#)
- [NASA Global Climate Change](#)
- [Earth Rangers](#)
- [Learning for a Sustainable Future](#)
- [Back to Nature Network](#)
- [Teachers' Corner, Evergreen](#)



ENERGY CONSERVATION PROGRAM



Steps 4&5

•Check Progress, Evaluate Results, Sustain the Effort

CELEBRATE SUCCESS!

Changing people's energy-use behaviors is hard! Your campaign will be more successful and you will sustain momentum if you model the actions you wish to see, and provide lots of encouragement.



**Never doubt that a small group of
thoughtful committed citizens
can change the world; indeed,
it's the only thing that ever has.**

Margaret Mead

