

ACTIVITY:

GET REAL



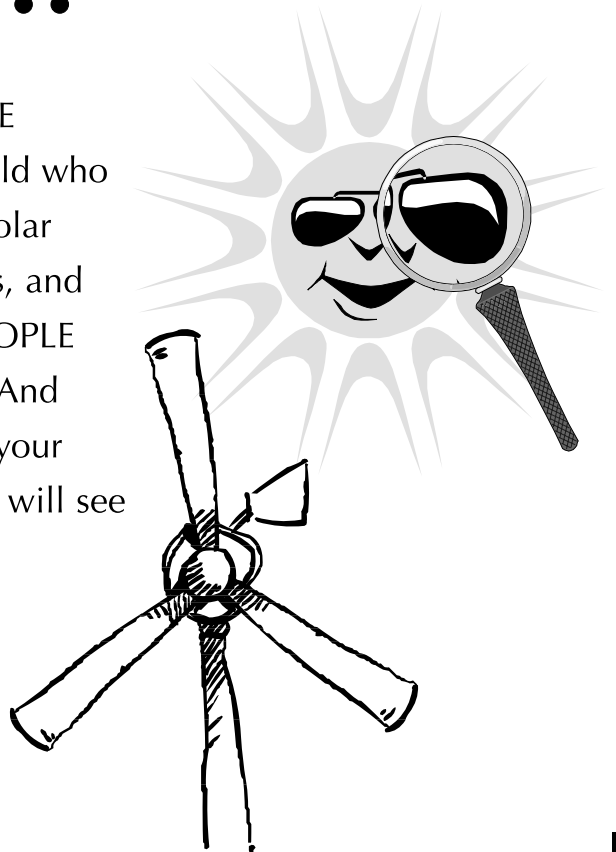
INTRO

Renewable energy technologies are not just fantasy or science fiction! Solar panels, wind turbines, and other kinds are being used in Canada - maybe even in your own backyard!

It's time for us to expect alternative energies to be used in our everyday lives. Houses should be built with solar power, earth energy and wind energy in mind. Businesses should reduce their energy costs and impacts on the environment by going "alternative." Schools can use clean energy technologies in-house to teach kids how to reduce greenhouse gas emissions and save money on energy costs through hands-on experience.

Let's **GET REAL.**

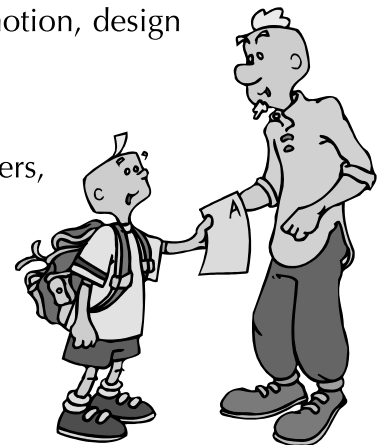
The EcoKids Club has searched out some REAL-LIFE examples of people in Canada and around the world who are using renewable energy technologies such as solar water heaters, earth energy heat pumps, solar walls, and wind turbines. We want you to know that YES, PEOPLE ARE USING ALTERNATIVE ENERGIES in Canada. And with support from EcoKids like you, as you talk to your families and grow into the next workforce, Canada will see a lot more alternative technologies and a lot less greenhouse gases.



SUPERVISOR INFORMATION

SUBJECTS & SKILLS DEVELOPMENT:

- ◆ Language ◆ Science & Technology
- * use of conventional and non-conventional texts and media to locate information (e.g. encyclopaedias, Internet, library, telephone calls)
- * understanding different forms and styles of written material
- * plan and carry out a research project (ask questions, clarify, analyze, report writing)
- * independent or group work
- * investigation of materials that absorb light and heat (e.g. solar power & heat pumps)
- * energy sources, transformation and technology
- * structures and mechanisms – characteristics, forces, motion, design
- * build vocabulary
- * application of classroom studies to the world around
- * social skills – communication with community members, businesses, and so on
- * letter writing, telephone conversation



OBJECTIVES:

- provide real life examples of renewable technologies being used
- show that renewable technologies can become a part of our everyday lives
- create an interest in renewable technologies and a desire to use them
- partner real life examples with in-class club activities
- build social skills through interaction with people, organizations and businesses outside of your club, school or youth group

YOU NEED:

- EcoKids Information Sheets (pgs. 15 - 18)
- access to photocopier
- discussion/research time

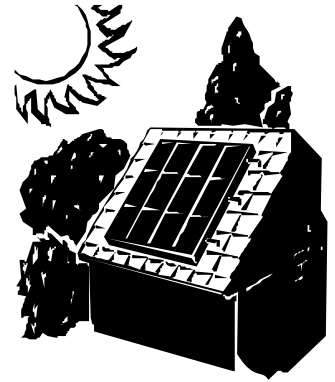
ECOKIDS INSTRUCTIONS:

Use the REAL-LIFE examples of people using alternative energy technologies below as starting points for discussions and further projects of your own design. Select examples that interest you, and compare them to your own school or community.

Solar Schools

This project was started by the International Solar Energy Society to teach sustainability and to design schools to be environmental learning tools. You can download the "Solar Schools - Brighter Future" booklet that describes a number of schools that are using solar energy systems (photos are included) and shares artwork and essays from the students at the schools.¹⁸

Go to www.ises.org and click on "ISES Scientific and Technical Projects." Write your own distinctive essays, poetry and artwork. Send your work to the EcoKids Club office to have it posted in the Gallery on EcoKids Online.

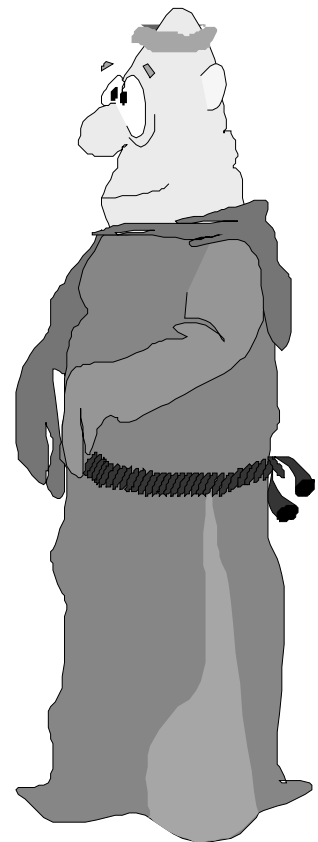


Solar Powered Monastery

In the northern desert of New Mexico, the Benedictine monastery Christ in the Desert is completely solar-powered. The monks are even using solar power to get online. They've created an amazing community that uses solar power for lights, heat, appliances, construction tools, computers, and purifying water smack dab in the middle of the desert!¹⁹

For articles about the monastery, go to <http://wire0.ises.org/wire/wire.nsf> or www.siemens.com and use the search tools at either site to do a keyword search for words such as "monastery." The monks' web site features photos of the monastery, daily activity logs, and other information related to their religious study (go to www.christdesert.org and click on "Our Life").

Try creating some of your own solar-powered devices by picking up instructions on www.picoturbine.com or other renewable energy sites (check EcoKids Online for more sites with project instructions, starting in April 2001 - www.ecokids.earthday.ca).



World's Largest Wind Energy Farm

What's 242 feet tall with blades that are 77 feet long? Each of the 450 wind turbines being built in the United States near the borders of Washington, Oregon, and British Columbia. This wind farm, known as the "Stateline Project," will make enough energy to power 70 000 homes and should be operational by the end of 2001.^{20,21,22}

Go to www.statelinewind.com for more information on the "Stateline Project" and photos of the massive wind turbines. Make your own model-sized, wind turbine using instructions on www.picoturbine.com.

Or check EcoKids Online, starting in April 2001 (www.ecokids.earthday.ca) for an even bigger list of sites with projects.



Wind Farms in Your Neighbourhood?



You don't have to feed or water 'em! And they're popping up all over Canada – wind farms, that is. Lots of companies are using wind turbines to create electricity that can be used by homes and businesses through their regular electricity grid. Canadian companies/utilities include Wind Power Inc., Vision Quest Windelectric Inc., Tacke Windpower, TransAlta, AXOR and Toronto Hydro.

Check out the wind power biz at: windpower.ca, greenenergy.com, www.transalta.com, torontohydro.com. and, other web sites. Is wind power available in your hometown? Find out who owns wind turbines and/or sells wind power in your area. Contact local power companies. Invite a guest speaker from one of the companies to speak to your club about "green power." If you're in Prince Edward Island book a school trip to the Atlantic Wind Test Site (see the resource section on pg. 40 for booking info). Check out the live web cam showing you wind turbines in Middelgrunden, Denmark, at www.windpower.dk.

Calgary's Public Transit Powered by the Wind

Calgary will soon have its C-Train powered by the wind. The electricity that powers the C-Train will come from wind power starting in September 2001! For the latest news go to www.greenenergy.com/RideTheWind.pdf. Switching to wind power will stop 21 000 tonnes of CO₂ from going into the air each year. Calgary will be the first city in North America to run a transit system on clean power.²³

If your city has a public transit system, find out what kind of power/fuel it uses for trains, buses, and other vehicles. Does the transit company plan to do anything to reduce their greenhouse gases and save money on energy?



A High School that's Warmed by the Earth

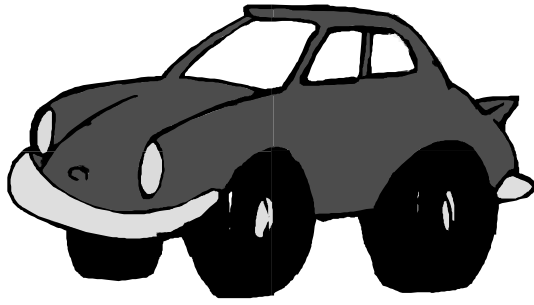
Father Michael McGivney Secondary School in Markham, Ontario has a ground-source heat pump system that'll WOW ya! The pipes in their system use water to carry heat from the ground to the school's air system. The school also uses the earth energy system to heat their water. There are 360 "U-shaped" tubes lined up in a row that go 200 feet into the ground outside the school. This is where the water (inside the tubes) picks up and drops off heat (depending on the season). The whole system cost about \$2.6 million and saves about \$9 400 a year in energy.²⁴

Other schools in Canada with earth energy systems:¹⁶

- Bob McMath Secondary School in Richmond, BC
- Swan Lake First Nations School in Brandon, MB
- St. Paul Catholic High School in Trenton, ON
- Plainville Public School in Northumberland, ON
- Go to www.earthenergy.ca for more information.



Find out what it takes to keep students and staff at your school warm in the winter and cool in the summer. What kind of heating system does your school have? What about the high school you'll be attending in a few years? How energy-efficient are these heating systems? Are there plans to improve energy efficiency in the schools or install a new heating system?



Hybrid Cars

HYBRID CARS are cars that can be powered by a combination of stored electricity and/or gas. Although, they're not on the road much yet, they will be soon. Contact the various manufacturers or retailers of hybrid "alternative" cars (e.g. Toyota, Honda) to request an information package on the hottest release to-date. Perhaps these will be the cars that EcoKids will be driving their families in. Divide your club into groups. Invite each group to investigate a different car company and present their findings to the rest of the club. Have the groups discuss which car they think is the best.



There are more REAL examples of renewable technologies throughout this E-PAK. Can you find them all?

