

# Enviro-Proofing Your Home

## Activity Information

**Grade Appropriate Level:** 11

**Duration:** 2-3 45 minute periods for Introductory Activities, 2-3 45 minute periods for Poster Project, 1 month (approximately) for final project

**Materials:** teacher should provide research information, web sites, handouts, guest speakers, and supplementary field trips

## Objectives

The goals of this lesson plan are to make Social Studies 11 students more responsible for the production and control of waste in their own lives. Students will **analyze** their home environments and establish **recycling, composting, and energy saving systems** that will lessen their family's impact on the environment while saving them money in the long run. The end result should be that students are more analytical about their own wasteful habits and more accountable for their immediate impact on the environment.

## Prescribed Learning Outcomes

### Social Studies, Language Arts

It is expected that students will:

- gather relevant information from appropriate sources
- develop and express appropriate responses to issues or problems
- demonstrate appropriate research skills, including the ability to collect original data, present and interpret data in graphic form
- demonstrate awareness of the value of social studies education in their daily lives and careers
- explain the environmental impact of economic activity, population growth, urbanization, and standard of living
- identify and assess environmental issues facing Canadians



## Skills

- observing, measuring, communicating, interpreting data, explaining & applying ideas, solving problems

## Introductory Activity

- Before assigning the major project for enviro-proofing their homes, students will spend a few classes learning **background information on waste management and energy efficiency issues** in our society. This will include a look at **municipal and industrial waste management situations**.
- Specifically, topic of **waste management** will be presented to students in a series of lessons about recycling, composting, and saving energy.
- With this knowledge, they should have the background enabling them to complete the **major project** on enviro-proofing their own homes.

## Suggested Instructional Strategies

### Lesson A – Poster Project

- Students will be given a large sheet of paper (either 11” by 17” or poster paper). On this sheet they will draw a **detailed, labelled map** of their apartment, condo, townhouse, house and property, ranch, etc.
- Students will then begin doing an **inventory of the waste** produced in their homes. They will label waste producing areas of their home on the map they have created.
- Students will complete an **energy analysis** of their homes (see attached Home Energy Saver Contract). They will begin by finding out the cost of their monthly **Hydro** and **Heating** costs. They will label the areas of their home where **Hydro** and **Energy** concerns are taxing both the environment’s and their family’s resources (i.e. windows, doors, chimneys etc.)

### Lesson B – Enviro-Proofing Plan

- Students will then detail **a plan** to make their home a more environmentally friendly place.

#### Students must create a system for recycling all of their waste by:

- creating a **recycling centre** in their home
- designating this centre on their map
- labelling and deploying containers for recycling paper, magazines, glass, tin cans, milk jugs, refundable containers, and miscellaneous items
- creating **a schedule** for delivering their recyclables to the appropriate processing centre



#### Students must make their home more energy efficient by:

- implementing the **Home Energy Savings Contract** with their parents (see attached handout)
- exploring the opportunity in having the **Hydro Power Smart Program** ([www.bchydro.com](http://www.bchydro.com)) conduct a free **energy audit** on their home, then using low interest rate loans from Hydro to improve **energy efficiency**.
- implementing **energy saving techniques** by
  - i. hang-drying clothes
  - ii. using cold water to do laundry
  - iii. cutting back on light use
  - iv. taking shorter showers and bathing less
  - v. cutting back on the use of the home heating system
  - vi. hand washing and drying dishes
  - vii. ensuring that the water heater is properly insulated
  - viii. reducing water flow in taps and toilets
  - ix. using rain water to water plants
  - x. using fluorescent light bulbs rather than electric
  - xi. car pooling with friends and family
  - xii. exploring the possibilities of using alternate energy systems such as solar or thermal
  - xiii. Weatherproofing windows, doors, fireplaces etc.

## Suggested Assessment Strategies

- Students must complete **the poster project** detailing their home's **layout, waste and energy deficiencies**, and **the plan for recycling and energy efficiency**. The mark will be negotiated between the student and teacher based on the **quality, thoroughness, and creativity** of their poster project and the implementation of a home waste management system.
- Students will self-evaluate, be evaluated by parents, and by the teacher, who will follow up by phoning home one month after completion of the poster project (see evaluation handout). Students will receive more marks if they have begun to fulfil the requirements of their **enviro-proofing plan**.

## Extension Activities

- **Field trip** tour of the local **landfill**. Students will brainstorm more ways to recycle garbage.
- Students will develop a recycling, energy efficiency plan for their **school** similar to the one for their home. As well, they could develop a similar program for **a relative or friend's home**.
- **Guest speakers** from local **environmental groups, industry and government** will be brought into the classroom to explain their views on waste and energy management.



## Cross-Curricular Interests

Environment & Sustainability, Science-Technology-Society, Media Education

## Suggested Links

[www.ec.gc.ca](http://www.ec.gc.ca)

[www.envirolink.org](http://www.envirolink.org)

[www.env.gov.bc.ca](http://www.env.gov.bc.ca)

[www.earthcare.org/bcen/bcen/html](http://www.earthcare.org/bcen/bcen/html)

[www.rcbc.bc.ca](http://www.rcbc.bc.ca)



**Social Studies 11**

**Enviro-Proofing Your Home**

**Student/Teacher/Parent Evaluation Form**

**This project is worth 100 marks. Please give a written evaluation and a mark out of 100 for each of the following categories.**

**Quality of Poster:  
/100**

**Thoroughness of Work Completed:  
/100**

**Creativity of Completed Work:  
/100**

**Total Mark:  
/100**

**On the backside of this evaluation sheet, please given a written self-evaluation of 100 to 200 words listing the accomplishments and disappointments for this project.**

**Social Studies 11**  
**Home Energy Saver Contract**



I, \_\_\_\_\_(student's name), hereby enter into an agreement with \_\_\_\_\_(parent's name), to save our family money on our hydro and home heating bills. We all agree to live by the energy saving proposals listed here:

1. we will hang dry clothes
2. we will use cold water only to wash clothes
3. we will shut off lights whenever we leave rooms not in use
4. we will take shorter showers and bathe less
5. we will reduce our use of heating energy
6. we will hand dry dishes
7. we will insulate the hot water tank
8. we will properly insulate and weather-strip our house

(Note: Not all of these conditions must be met; they are suggestions only for cutting down on our family's impact on the environment.)

The benefits of this program will be seen in lower costs to energize our home. We all agree that the difference in savings that has accrued by the end of one calendar year over the previous year will be granted to the student whose name is listed herein. After that, the parent whose name is listed herein will gain the money saved.

Date: \_\_\_\_\_

Student's name and signature: \_\_\_\_\_

Parent's name and signature: \_\_\_\_\_

## The World's Shortest Comprehensive Recycling Guide

Good	Bad	Notes
<u>Unbroken glass containers</u> (Clear glass is most valuable.)	Tableware, ceramics, Pyrex, Windows, light bulbs, mirrors.	Only bottle glass is acceptable Ceramics contaminate glass. Mixed colour glass is Worthless, and broken glass is hard to sort.
<u>Clean dry newspapers &amp; Newspaper inserts.</u>	Rubber bands, plastic bags, product samples, water, dirt, mold or other contaminants.	Pack newspapers tightly in large brown grocery bags or tie with natural twine. Protect from rain and snow.
<u>Empty metal cans, caps, lids, bands and foil.</u>	Full cans, spray cans unless instructed, cans with paint or hazardous waste.	Metals can be recycled again and again.
<u>Plastic stamped #1 or #2 on The bottom.</u> Some areas only accept clear plastic or certain shapes.	Plastic types #3, #4, #5, #6 or especially #7. Caps are usually a different type from the bottle – toss if unmarked.	Even a small amount of the wrong type of plastic can ruin a melt. Much plastic collected for recycling is actually land-filled or wasted.
<u>Plastic bags marked #2 or #4.</u>	Unmarked plastic bags.	Many grocery stores take bags
<u>Mixed paper: junk mail, Magazines, photocopies, Computer printouts, cereal or Shoeboxes, etc. (some places take corrugated cardboard &amp; phone books).</u>	Stickers, napkins, tissues, waxed paper, milk cartons, carbon/laminated paper, neon paper, thermal fax paper Any wet or food stained paper.	When in doubt, throw it out!  Paper fibre can be recycled About 7 times before it gets Too small. Plastic window Envelopes are okay in many Areas.
<u>Scrap aluminum such as lawn chairs, window frames and pots.</u>	Non-metal parts and metal parts attracted to magnets.	Aluminum is not attracted to magnets.

**There is no need to remove labels or bands from cans and bottles. Clean only enough to prevent odours. Do not recycle containers with traces of hazardous materials. Do not recycle dirty or food stained paper.**

<u>Motor oil</u> (never dump into storm drains).	Call your garbage company, local quick-lube or <b>1-800-MOTOROIL</b> . Each year do-it-yourselfers improperly dump more oil than the Exxon Valdez spilled.
<u>Automotive batteries, sealed lead/gel-cell batteries.</u>	Keep lead out of the environment; take to an automotive or security dealer for recycling or trade-in.
<u>Rechargeable batteries</u> (cordless phone, camcorder, shaver, portable appliance, portable computer, etc.)	Call <b>1-800-8BATTERY</b> for information. Throw Alkaline and heavy duty batteries in trash Unless prohibited. Nickel-Cadmium Rechargeable batteries contain toxins!
<u>Laser/Ink printer cartridges.</u>	Send to one of the many <u>recyclers or refillers.</u>
<u>Household toxins</u> (paints, oils, solvents, Pesticides, cleaners)	Call your garbage company for advice. Do not dump into storm drains.
<u>Computers, eyeglasses, household goods.</u>	Donate to charity.

**This USA/Canada recycling guide contains generalizations; local procedures may differ. From the 1997 Evergreen Industries. Remember: Unless you buy recycled products, you are not recycling!**