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## Households and the Environment Survey

### Secondary level teacher's kit



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- ... not applicable
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- 0<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- <sup>P</sup> preliminary
- <sup>r</sup> revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- <sup>E</sup> use with caution
- F too unreliable to be published
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# Statistics Canada Households and the Environment Survey Lesson Pack

## Theme 1: eWaste and Environmental Trends



### Overview:

Information from Statistics Canada's 2011 *Households and the Environment Survey* revealed that disposal of electronic devices that have reached the end of their useful lives is a significant issue for Canadians. Some of these items contain materials that are harmful if put in a landfill; these items are considered household hazardous waste.

In this theme, students will explore the impact that unwanted electronic products, or eWaste, have on the environment. They will use Statistics Canada's 2011 *Households and the Environment Survey* to investigate eWaste in Canadian households. Students will also analyse data to identify trends related to eWaste, survey their peers, compare survey results to the national and provincial averages, and investigate the environmental impact of the hazardous materials found in electronics waste.

### Suggested Grade Level:

- Grades 9-10

### Topics:

- Science
- Mathematics

### Cross-curricular Connections:

- English Language Arts
- Technology Education

### Materials:

#### Lesson 1: Introduction to Electronic Device Waste

- 2011 *Households and the Environment Survey*: Table 19

#### Lesson 2: Canada's Electronic Device Waste

- Handout: Graphing Sheet
- 2009 *Households and the Environment Survey*: Table 19
- 2011 *Households and the Environment Survey*: Table 19

#### Lesson 3: Compare Canada to the Classroom

- Handout: eWaste Survey

## Lesson 4: Long-term Impact of Electronic Device Waste

- Handout: Hazardous Materials Presentation
- 2011 *Households and the Environment Survey*: Table 19
- Rubric: Hazardous Materials Assignment

### Assignments:

- Create an impact statement.
- Analyse data and graph trends.
- Conduct a peer-survey and identify variables.
- Present information about household hazardous materials.

# Theme 1 - Lesson 1:

## Introduction to Electronic Device Waste

**Estimated Completion Time:** 1+ hours

### Learning Objectives:

Science:

- Assess the impact of human activities on the sustainability of ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts.
- Investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.

Geography:

- Identify various ways in which communities in Canada dispose of their waste material, and describe potential environmental impacts of these methods.

### Assignment:

- Create an impact statement.

### Activity

Introduce the concept of household hazardous waste to the class by having the class brainstorm all of the hazardous materials in their homes. These could include:

- Leftover or expired medications
- Medical sharps
- Paints and solvents
- Engine oil and anti-freeze
- Batteries
- Compact Fluorescent lights (CFLs)
- Fluorescent Tubes
- Cleaning agents

If it was not mentioned while brainstorming, propose the idea of electronic devices as hazardous waste. There are several chemicals and materials, such as lead and cadmium, found in common electronic devices that can be extremely hazardous to the environment and to humans. Electronic device waste is sometimes referred to as “eWaste.”

Continue to brainstorm with the class by compiling a list of electronic devices that they have in their home. This could include:

- Computer
- Cell Phone
- Television
- DVD player
- Videogame console
- Modem
- Wireless Router
- Digital clock
- Microwave oven
- Tablet computer

- Cable/satellite box
- Satellite dish
- Remote control
- Printer
- Scanner
- Calculator
- Telephone
- Mp3 player
- Digital camera

Divide the class into small groups. Have groups investigate three of the electronic devices on the list to try and ascertain:

- What is the average lifetime of these devices?
- Are any hazardous materials found in these devices?
- How many devices of this type will the average household dispose of in a ten year period?

Have students use Table 19 of the Statistics Canada 2011 *Households and the Environment Survey* to identify:

- What percentage of households in their home-province had a dead or unwanted computer to dispose of?
- In what ways did households in their home-province dispose of their computers?

Have students brainstorm and create an Impact Statement about some of the possible effects that Canadian eWaste disposal tendencies may have. This could include:

- Environmental impact of hazardous materials in landfills
- Environmental impact of electronics recycling programs
- Social and economic impact of useable electronics being discarded

### **Guiding Questions:**

- Are you surprised by your findings? Why or why not?
- How does this affect the way you think about the electronics you use?
- Will this affect your future behaviour? In what way?

## Theme 1 - Lesson 2:

### Canada's Electronic Device Waste

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Science:

- Assess the impact of human activities on the sustainability of ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts.
- Demonstrate an understanding of the dynamic nature of ecosystems, particularly in terms of ecological balance and the impact of human activity on the sustainability of terrestrial and aquatic ecosystems.
- Analyse and interpret qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis, identifying possible sources of error, bias, or uncertainty.

Mathematics:

- Develop and apply reasoning to make mathematical conjectures, assess conjectures, and justify conclusions, and plan and construct organized mathematical arguments.

Geography:

- Identify various ways in which communities in Canada dispose of their waste material, and describe potential environmental impacts of these methods.
- Describe ways in which communities can improve their environmental sustainability.

#### Assignment:

- Analyse data and graph trends.

#### Activity:

Have students review Table 19 of the Statistics Canada 2009 *Households and the Environment Survey* to identify:

- In 2009, what percentage of Canadian households had eWaste to dispose of?
- In 2009, what percentage of households in their home-province had eWaste to dispose of?

**Hint:** If there is insufficient data regarding the trends for students' home-province, have them use the national data.

Have students compare the results found in Table 19 of the Statistics Canada 2009 and 2011 *Households and the Environment* reports. Prompt students to:

- Use Handout: Graphing Sheet to create a graph that compares the percentage of Canadians who had unwanted eWaste to dispose of in both years.
- Identify any trends they observe.

Following these trends, have students predict what percentage of households in their home-province will have had unwanted eWaste to dispose of in the current year.

**Guiding Questions:**

- What trend did you notice when comparing the data for 2009 and 2011?
- What do you think this trend implies about our use and disposal of electronics?

Following these trends, have students predict a percentage of households, nationally and in their home-province. Who will have unwanted eWaste to dispose of in the current year.

Have students add these predictions to their graph.

**Guiding Questions:**

- Do you think that people your age are more or less likely to have unwanted electronics? Why or why not?
- Do you think that people your age are more or less likely to dispose of unwanted electronics using an environmentally conscientious method? Why or why not?



# Theme 1 - Lesson 2: Canada's Electronic Device eWaste Handout: Graphing Sheet

Use the template below to graph the rates of households who have unwanted electronics waste (eWaste) in their homes.

### Canadians with Unwanted eWaste

Percentage of Households with eWaste	100																																		
	90																																		
80																																			
70																																			
60																																			
50																																			
40																																			
30																																			
20																																			
10																																			
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>														
	Year																																		

## Theme 1 - Lesson 3:

### Compare Canada to the Classroom

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Science:

- Formulate scientific questions about observed relationships, ideas, problems, and/or issues, make predictions, and/or formulate hypotheses to focus inquiries or research.
- Investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.

Mathematics:

- Develop and apply reasoning to make mathematical conjectures, assess conjectures, and justify conclusions, and plan and construct organized mathematical arguments.
- Make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other sources.

Geography:

- Identify various ways in which communities in Canada dispose of their waste material, and describe potential environmental impacts of these methods.
- Describe ways in which communities can improve their environmental sustainability.
- Identify actions that individuals can take to live more sustainably, and explain the benefits for their local community.

#### Assignments:

- Conduct a peer-survey and identify variables.

#### Activity:

Have the class use *Handout: eWaste Survey* to complete the electronic device waste component of the *Households and the Environment Survey*.

As a class, track the students' survey results, and calculate the class average.

The students will each be administering this survey to a group of their peers. Have students create a hypothesis as to whether their sample group will differ from the provincial average in the 2011 survey, the provincial average they predicted for the current year, and the class average they just calculated. Their hypothesis should answer:

- Why do they think they will be the same or different?
- Will their findings be higher or lower than the provincial average?

Have each student use *Handout: eWaste Survey* to survey ten other students in their grade.

**Hint:** Instead of using the eWaste Survey, add an additional challenge by having students develop their own survey questions to administer to their peers.

Have each student analyse their results to determine what percentage of the class had unwanted electronics products in need of disposal. After they have done this, average the class's findings to find the "grade average."

Have students graph their findings alongside their predicted trends.

- What does the graph show?
- Was their hypothesis correct or incorrect?

Have students brainstorm variables that may impact their findings. Possible variables include:

- Age
- Location
- Sample size
- Socio-economic status
- Ethnicity
- Gender

Have students identify how these variables could change their findings.

**Guiding Question:**

- Why do you think it is important to identify variables in your survey?
- How might these variables change the data you collect?
- Which variable do you think most significantly impacts your data?

## Theme 1 - Lesson 3: Compare Canada to the Classroom

### Handout: eWaste Survey

Use these survey questions to track the amount of eWaste used by your classmates.

1. In the past 12 months, did you have any of the following unwanted **electronic products** to dispose of?
  - a. Computers
  - b. Printers or fax machines
  - c. Televisions or computer displays
  - d. Audio-video equipment (includes DVD players, VCRs, speakers, portable digital music players)
  - e. Cellular phones
  - f. Electronic gaming equipment
  - g. None of the above
2. What did you do with your **computers**? Did you...
  - a. Put them in the garbage
  - b. Take or send them to a depot or drop-off centre
  - c. Return them to a supplier/retailer
  - d. Donate or give them away
  - e. Repair or sell them
  - f. Still have them
  - g. Other
3. What did you do with your **televisions** or computer displays? Did you...
  - a. Put them in the garbage
  - b. Take or send them to a depot or drop-off centre
  - c. Return them to a supplier/retailer
  - d. Donate or give them away
  - e. Repair or sell them
  - f. Still have them
  - g. Other
4. What did you do with your **audio-video equipment**? Did you...
  - a. Put it in the garbage
  - b. Take or send them to a depot or drop-off centre
  - c. Return them to a supplier/retailer
  - d. Donate or give them away
  - e. Repair or sell them
  - f. Still have them
  - g. Other
5. What did you do with your **cellular phones**? Did you...
  - a. Put them in the garbage
  - b. Take or send them to a depot or drop-off centre
  - c. Return them to a supplier/retailer
  - d. Donate or give them away
  - e. Repair or sell them
  - f. Still have them
  - g. Other
6. What did you do with your **electronic gaming equipment**? Did you...
  - a. Put them in the garbage
  - b. Take or send them to a depot or drop-off centre
  - c. Return them to a supplier/retailer
  - d. Donate or give them away
  - e. Repair or sell them
  - f. Still have them
  - g. Other

## Theme 1 - Lesson 4:

### Long-Term Impact of Electronic Device Waste

**Estimated Completion Time:** 2+ hours

#### Learning Objectives:

Science:

- Demonstrate an understanding of the dynamic nature of ecosystems, particularly in terms of ecological balance and the impact of human activity on the sustainability of terrestrial and aquatic ecosystems.
- Investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.
- Assess the impact of human activities on the sustainability of ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts.

Geography:

- Identify various ways in which communities in Canada dispose of their waste material, and describe potential environmental impacts of these methods.
- Describe ways in which communities can improve their environmental sustainability.
- Identify actions that individuals can take to live more sustainably, and explain the benefits for their local community.

#### Assignments:

- Present information about household hazardous materials.

#### Activity:

Ask students to refer back to the list of hazardous materials that they created in *Lesson 1: Introduction to Electronic Device Waste*.

Distribute *Handout: Hazardous Materials Presentation Assignment* and review the assignment with the class.

Break the students into groups of 2-3 members and have each group research the effect of one of these materials on the environment. Some of the hazardous materials found in electronics waste include:

- Polychlorinated biphenyls (PCB)
- Tetrabromo-bisphenol-A (TBBA)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDE)
- Chlorofluorocarbon (CFC)
- Cadmium
- Lead
- Lithium
- Mercury
- Nickel

- Polyvinyl chloride (PVC)
- Arsenic
- Barium
- Beryllium
- Rare Earth Elements (Yttrium, Europium)
- Zinc Sulphide
- Americium

Have each group present their findings to the class. Each group should include:

- The name of the hazardous material
- The hazardous material's purpose in electronics
- A brief explanation of the type of devices in which the hazardous material is found
- Any possible long-term effects of the hazardous material if it is disposed of improperly
- These effects could include:
  - The long-term impact on the environment, caused by improper disposal of this material
  - The long-term impact on public health, caused by improper disposal of this material
  - The long-term impact on the environment caused by creating, extracting, or refining this material
- Students should also investigate:
  - Is there an alternative to using this material?
  - Is there a safe method of disposal or recycling?
- Using the results found in Table 19 of the 2011 *Households and the Environment Survey* data and the data generated in *Lesson 3: Compare Classroom to Canada*, each group should estimate how many households in Canada, in their home-province, and in their school community, have this sort of hazardous electronics waste in their home.

**Hint:** Teachers can evaluate these presentations by using Rubric: *Hazardous Materials Assignment Rubric*.

### Guiding Questions :

- What are some of the environmental concerns caused by improper disposal of this material?
- Can this material have a negative impact on public health?
- Are there environmental concerns related to recycling this material?
- Is there a safe alternative? If so, why aren't more companies using it?

## Theme 1 - Lesson 4: Long-Term Impact of Electronic Device Waste

### Handout: Hazardous Materials Presentation

For this assignment, groups of 2-3 members will investigate and present their findings related to a hazardous material that is commonly found in electronic devices and therefore, commonly found in eWaste.

Some materials commonly found in electronic devices include, but are not limited to:

- Polychlorinated biphenyls (PCB)
- Tetrabromo-bisphenol-A (TBBA)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDE)
- Chlorofluorocarbon (CFC)
- Polyvinyl chloride (PVC)
- Arsenic
- Barium
- Beryllium
- Cadmium
- Lead
- Lithium
- Mercury
- Nickel
- Rare Earth Elements (Yttrium, Europium)
- Zinc Sulphide
- Americium

Your group's investigation and presentation should explain:

1. The name of the hazardous material
2. The hazardous material's purpose in electronics
3. A brief explanation of the type of devices in which the hazardous material is found
4. Any possible long-term effects of the hazardous material if it is disposed of improperly

These effects could include:

- a. The long-term impact on the environment, caused by improper disposal of this material
  - b. The long-term impact on public health, caused by improper disposal of this material
  - c. The long-term impact on the environment caused by creating, extracting, or refining this material
5. Your group should also investigate:
    - a. Is there an alternative to using this material? If so, why are these alternatives being or not being used?
    - b. Is there a safe method of disposal or recycling?
  6. Estimate how many households in Canada, in your home-province, and in your school community, have this sort of hazardous electronics waste in them. Use the data found in Table 19 of the 2011 *Households and the Environment Survey* data and the data generated in *Lesson 3: Compare Classroom to Canada*.

## Theme 1- Lesson 4: Long-Term Impact of Electronic Device Waste Hazardous Materials Assignment Rubric

Level 1	Level 2	Level 3	Level 4
Attempts to explain the types of devices in which this hazardous material is found.	Explains the types of devices in which this hazardous material is found.	Clearly identifies key purposes that the hazardous material has in electronic devices, explaining the types of devices in which it is found.	Clearly identifies key purposes that the hazardous material has in electronic devices, explaining the types of devices in which it is found and its role within those devices.
Attempts to identify possible long-term impact on the environment caused by improper disposal of the hazardous material.	Identifies possible long-term impact on the environment caused by improper disposal of the hazardous material.	Identifies and explains possible long-term impact on the environment caused by improper disposal of the hazardous material.	Identifies and explains possible long-term impact on the environment caused by improper disposal of the hazardous material, examining repercussions on the environment and on human activity.
Attempts to identify possible long-term impact on the environment caused by creating, extracting, or refining the hazardous material.	Identifies possible long-term impact on the environment caused by creating, extracting, or refining the hazardous material.	Identifies and explains possible long-term impact on the environment caused by creating, extracting, or refining the hazardous material.	Identifies and explains possible long-term impact on the environment caused by creating, extracting, or refining the hazardous material, including effects on a local and global scale.
Attempts to identify alternative materials that could be used.	Identifies alternative materials that could be used.	Identifies alternative materials that could be used, and provides evidence why these alternatives might or might not be used.	Identifies alternative materials that could be used, and provides economic, social, and environmental evidence why these alternatives are or are not used.
Attempts to identify if there is a safe method for disposal of the hazardous material.	Identifies if there is a safe method for disposal of the hazardous material.	Identifies if there is a safe method for disposal of the hazardous material, and identifies why it is or is not being used.	Identifies if there is a safe method for disposal of the hazardous material, and provides economic, social, and environmental evidence why it is or is not being used.



Level 1	Level 2	Level 3	Level 4
Attempts to estimate how many households in <b>Canada</b> have this sort of hazardous material.	Estimates how many households in <b>Canada</b> have this sort of hazardous material.	Uses Statistics Canada data to estimate how many households in <b>Canada</b> have this sort of hazardous material.	Uses Statistics Canada data to estimate how many households in <b>Canada</b> have this sort hazardous material, providing examples of what the source of the hazardous materials might be.
Attempts to estimate how many households in their <b>home-province</b> have this sort of hazardous material.	Estimates how many households in their <b>home-province</b> have this sort of hazardous material.	Uses Statistics Canada data to estimate how many households in their <b>home-province</b> have this sort of hazardous material.	Uses Statistics Canada data to estimate how many households in their <b>home-province</b> have this sort of hazardous material, providing examples of what the source of the hazardous materials might be.
Attempts to estimate how many households in their <b>community</b> have this sort of hazardous material.	Estimates how many households in their <b>community</b> have this sort of hazardous material.	Uses data from a survey to estimate how many households in their <b>community</b> have this sort of hazardous material.	Uses data from a survey to estimate how many households in their <b>community</b> have this sort of hazardous material, providing examples of what the source of the hazardous materials might be.

# Statistics Canada Households and the Environment Survey Lesson Pack

## Theme 2: Household Energy Use



### Overview:

Information from Statistics Canada's 2011 *Households and the Environment Survey* revealed that home energy consumption and conservation is a significant issue for Canadians.

In this theme, students will explore different methods of home energy conservation. They will use Statistics Canada's 2011 *Households and the Environment Survey* and other Statistics Canada surveys to investigate household energy expenditures, purchasing choices that can impact energy consumption, and home energy audits. They will use this knowledge to create a venture plan for a company that performs home energy audits and makes modifications to increase energy efficiency.

### Suggested Grade Level:

- Grades 10-12

### Topics:

- Business
- Environmental Science
- Mathematics

### Cross-curricular Connections:

- Family Studies
- English Language Arts
- Technology Education

### Materials:

#### Lesson 1: Household Energy Budget

- Handout: Monthly Household Budget
- Handout: Budget Graphing
- Average Household Expenditure (CANSIM Table: 203-0021)

#### Lesson 2: Purchasing Choices that Impact Energy Consumption

- 2011 *Households and the Environment Survey*: Table 14
- Population, by Sex and Age Group (CANSIM Table: 051-0001)

### Lesson 3: Energy Audits

- 2011 *Households and the Environment Survey*: Table 15

### Lesson 4: Create a Venture Plan

- Handout: Venture Plan Assignment
- Rubric: Venture Plan Assignment
- 2011 *Households and the Environment Survey*: Tables 1, 2, 13-15, 18-20

### Assignments:

- Create a household budget.
- Research an energy-saving product.
- Conduct a survey about energy audits.
- Perform an energy audit.
- Create a venture plan.

## Theme 2 - Lesson 1:

### Household Energy Budget

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Environmental Science:

- Analyse, on the basis of research, social and economic issues related to a particular environmental challenge.

Mathematics:

- Gather, interpret, and describe information about living costs, and estimate the living costs of different households in the local community.
- Design, explain, and justify a monthly budget suitable for an individual or family described in a given case study that provides the specifics of the situation (e.g., income; personal responsibilities; costs such as utilities, food, rent/mortgage, entertainment, transportation, charitable contributions; long-term savings goals).

#### Assignment:

- Create a household budget.

#### Activity:

Begin this activity by asking students to discuss the items on which a family or household must spend their money. As a class, brainstorm things that should be factored into a household's budget. These items may include:

- |   |                          |
|---|--------------------------|
| • Food  | • Healthcare             |
| • Shelter                                     | • Personal care          |
| • Utilities (water, fuel, electricity, etc.)  | • Recreation             |
| • Household operations (communications, etc.) | • Education              |
| • Household furnishing and equipment          | • Income taxes           |
| • Clothing                                    | • Personal insurance     |
| • Transportation                              | • Miscellaneous expenses |

Distribute *Handout: Monthly Household Budget* and ask the students to use it to create a complete monthly budget for a household of three people, with a combined annual income of \$75,000. Students should try to include all of the expenses that they brainstormed as a class.

After students have created their budget, have the class share some of their budgetary expenses with each other. Encourage students to compare how much they allotted for each category, and discuss their reasoning.

Distribute Statistics Canada's 2012 *Average Household Expenditure* (CANSIM 203-0021) table to the students. Ask students to compare their budget to national average for household expenditures for the year 2012. Ask them to pay specific attention to the "Water, fuel and electricity for principal accommodation" line-item.

Have students investigate what their own family spends on water, fuel, and electricity each month. Encourage them to compare their family's monthly budget or expenses with the national average and with the budget they created.

**Hint:** Each student's family's energy budget is for personal use and does not need to be shared with the class.

Have students use *Handout: Budget Graphing Sheet* to graph:

- The monthly, national average of household energy expenditure
- The monthly household energy expenditure from their budget
- Their family's monthly energy expenditure (Optional)

### **Guiding Questions:**

- How close was your budget for energy expenses to the national average? Why do think there were differences?
- Does your family spend more or less each year on energy than the national average?
- How do you think that you could reduce the amount of money you need to budget for energy expenses each month?

## Theme 2 - Lesson 1: Household Energy Budget

### Handout: Monthly Household Budget

Use the table below to create a complete monthly budget for a household of three people, with a combined annual income of \$75,000.

Item	Monthly Cost	Annual Cost
Food	\$	\$
Shelter	\$	\$
Utilities (Water, Fuel and Electricity)	\$	\$
Household Operation (Communication, Etc.)	\$	\$
Household Furnishing and Equipment	\$	\$
Clothing	\$	\$
Transportation	\$	\$
Health Care	\$	\$
Personal Care	\$	\$
Recreation	\$	\$
Education	\$	\$
Personal Insurance	\$	\$
Income Taxes	\$	\$
Miscellaneous Expenses	\$	\$
<b>Total Expenditure:</b>	\$	\$

**Hint:** First determine the monthly costs for this household, and then determine the annual costs.

## Theme 2 - Lesson 1: Household Energy Budget Handout: Budget Graphing

Use the template below to compare your proposed monthly budget for utilities (water, fuel and electricity) to your family’s monthly energy budget and the monthly national average as described in Statistics Canada’s 2012 *Average Household Expenditure* (CANSIM 203-0021)

**Note:** Each student’s family’s energy budget is for personal use and does not need to be shared with the class.

<b>Monthly Utilities (Water, Fuel, Electricity) Cost (\$)</b>	500																		
	475																		
	450																		
	425																		
	400																		
	375																		
	350																		
	325																		
	300																		
	275																		
	250																		
	225																		
	200																		
	175																		
	150																		
	125																		
	100																		
	75																		
	50																		
	25																		
				Proposed Monthly Budget					Family's Monthly Budget										
	<b>Budgets</b>																		

## Theme 2 - Lesson 2:

### Purchasing Choices that Impact Energy Consumption

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Environmental Science:

- Analyse, on the basis of research, social and economic issues related to a particular environmental challenge (e.g., overfishing, deforestation, acid rain, melting of the polar ice cap) and efforts to address it.
- Explain how an environmental challenge has led to advances in science or technology.
- Describe a variety of human activities that have led to environmental problems and/or contributed to their solution.

Business:

- Use methods of marketing research to determine whether demand exists for a proposed good or service.

#### Assignment:

- Research an energy-saving product.

#### Activity:

Begin this activity by having students investigate how compact fluorescent light bulbs (CFLs) and incandescent light bulbs work. Have them identify:

- The process that produces light
- How much energy this process requires

Have students compare the two types of light bulbs and identify which is more energy-efficient. Ask students to identify energy-savings if they were to replace every light bulb in their house with energy-efficient lights, such as compact fluorescent lights or LEDs.

Have students use Table 14 of the Statistics Canada 2011 *Households and the Environment Survey* to identify what percentage of households nationally, and in their home-province use CFLs in their homes? In order to do this, students will have to make some assumptions about:

- Number of light bulbs in a household
- The amount of time each day that these lights are on
- The cost of electricity per kilowatt hour



Using this information, the information on energy-savings they found during their investigation, and the population found in *Population, by Sex and Age Group* (CANSIM 051-0001) have students calculate the energy- and financial savings for their home-province. In order to do this, students will have to make some assumptions about:

- Number of people in a household

**Hint:** For an additional challenge, have students search for statistical tables on CANSIM, or find market research to support the assumptions they are making.

### Guiding Questions:

- How could the assumptions you have made affect your data?
- How much money and energy can using this product save a home owner?

Divide students into groups and have them research a product for the home that can conserve energy. Ask students to try to identify the energy- and financial savings that can be provided by using certain products. These products may include:

- High efficiency appliances
- Programmable thermostats
- Dimmer switches for lights
- Using fans instead of air conditioners

Have students identify:

- What the product does
- How the product works
- How popular the product is
- Why do people use this product

### Guiding Questions :

- Would you use this product in your home? Why or why not?
- Are there disadvantages to using this product?

## Theme 2 - Lesson 3:

### Energy Audits

**Estimated Completion Time:** 2+ hours

#### Learning Objectives:

Environmental Science:

- Analyse, on the basis of research, social and economic issues related to a particular environmental challenge.
- Explain how an environmental challenge has led to advances in science or technology.
- Use a research process to investigate how evidence, theories, and paradigms reflecting a range of perspectives have contributed to our scientific knowledge about the environment.

Business:

- Use methods of marketing research to determine whether demand exists for a proposed good or service.

#### Assignment:

- Conduct a survey about energy audits.
- Perform an energy audit.

#### Activity:

Energy audits are an inspection used to assess the energy needs and efficiency of a building. Begin this lesson by having your students use Table 15 of Statistics Canada's 2011 *Households and the Environment Survey* to identify how many households in their home-province have had an energy audit performed on their home.

#### Guiding Questions :

- What are some benefits of performing an energy audit?
- Why do you think the majority of home owners have had energy audits performed in the last 10 years?

Next, have students develop a survey that they will administer to home owners in their community. Have the students develop questions for a survey related to energy audits. Their survey should identify:

- How many people in their community have had an energy audit performed on their home?
- How many people in their community made modifications to their property as a result of the audit?
- What kinds of modifications were made?
- When were the energy audits performed?

After the students have developed their questions, have them administer their survey to people in their community. Have the students determine an appropriate sample size and demographic (e.g. regions, age, new home owners, etc.) for the class so that they can identify how many home owners they must each survey.

**Hint:** For an additional challenge, have the students conduct research to determine an appropriate demographic.

After the students have finished administering their surveys, have them analyze the results to answer the questions posed. Have students combine their analyses to create a larger class-set of data.

### Guiding Questions:

- Is your community more or less likely to have an energy audit than the national and provincial average?
- Do you think your community is an example of an “average” community? What is different?

Next, students will perform an energy audit on their own homes. Have students create a checklist of things they should look for to determine the energy efficiency of their homes. This may include:

- Air leaks
- Insulation
- Heating and cooling equipment
- Lighting
- Appliances and electronics

**Hint:** Students can use Natural Resources Canada’s May 2014 EnerGuide Home Evaluation Preparation guide, or their Energy Advisor Procedures Manual to find information about Energy Audits.

Have students select an issue that they discovered during their energy audit, and investigate a product or modification that could assist in making this item more energy efficient.

### Guiding Questions:

- How easy is it to fix this issue?
- How much money do you think it would cost the home owner to fix this issue?
- How much money do you think the home owner could save over a period of 10 years if you fixed this issue?

## Theme 2 - Lesson 4:

### Create a Venture Plan

**Estimated Completion Time:** 3+ hours

#### Learning Objectives:

Business:

- Determine what land, buildings, capital, equipment, and services are required to operate their proposed business venture.
- Determine the human resource needs (e.g., employees, partners) for their proposed venture.
- Describe the process involved in producing a new product or delivering a new service.
- Determine the goods and potential suppliers that are required for their chosen venture.
- Compare ways in which a specific good or service can be distributed to customers.
- Identify the most appropriate method to deliver their good or service.
- Compare ways of advertising and promoting a venture, and create appropriate advertisements and promotional strategies for their chosen venture.
- Describe the strategy used to determine the price for their new good or service.
- Analyse specific financial goals for their chosen venture.
- Demonstrate the effective use of business communication techniques (e.g., presentations, business reports, forms, charts) when developing, carrying out, and presenting their venture plan.

#### Assignment:

- Create a venture plan.

#### Activity:

Begin this activity by asking students to hypothesize:

- Which province appears to be the most environmentally conscious and why?
- Which province appears to be the least environmentally conscious and why?
- Where does their home-province fit in? Is it more or less environmentally conscious than the national average?

Set up “data stations” around the classroom, each containing survey data. Tables, 1,2, 13-15, and 18-20 of Statistics Canada’s 2011 *Households and the Environment Survey* should be distributed amongst the data stations. Have students test their hypotheses by rotating between the stations and, for each statistical table, record:

- The name of the table
- The national average
- The top three provincial averages
- The bottom three provincial averages

After students have finished rotating through the stations, have them analyse the data they have collected to check their hypotheses.

Distribute *Handout: Venture Plan Assignment* and have students review the assignment. This assignment can be used as a grade 11-12 Independent Study Unit.

Students will be creating a venture plan for an energy audit company. They will use the information they have gathered from their investigations using the 2011 *Households and the Environment Survey* and the survey they conducted in their community during *Lesson 3: Energy Audits* to select a province or region that they think would be a viable market for a company that performs energy audits and makes related modifications to homes.

Students will write a venture plan that will include:

- Overview
- Resource Analysis
- Production Plan
- Market Plan
- Financial Plan

For a full explanation of the requirements of each section, see *Handout: Venture Plan Assignment* and *Rubric: Venture Plan Assignment*.

After students have written their venture plans, have them perform a peer-to-peer review with another classmate and incorporate their peer's feedback into their venture plan.

Finally, have students present their venture plans to the class as a 5-10 minute "pitch presentation". This presentation should concisely explain their venture, the market they have chosen, their production plan, marketing plan, and financial plan. They should support their decisions by including statistics relating to the rate of energy audits and household renovations carried out as a result.

### Guiding Questions:

- Why did you select this regional market?
- What is one stumbling block to this venture being successful? How do you plan to overcome this?
- How will you market your venture? How much will this cost?
- What are some of your start-up expenses?
- If things go well, how much will you have made in 2 years?

## Theme 2 - Lesson 4: Create a Venture Plan

### Handout: Venture Plan Assignment

For this assignment, you will be creating a venture plan for a company that performs energy audits and makes related modifications to residential homes.

1. Your venture plan should include the following:

a. An Overview that includes:

- An executive summary that summarizes key points from each section of the venture plan
- A description of the company, noting the services you will be offering and the selected target market
- A company mission statement.

Note: A mission statement is a clear statement of purpose which provides a framework within which the company's strategies are formulated

b. A Resource Analysis that includes:

- A list and identification of the cost of any buildings and equipment required to operate the business
- A list and identification of the cost of any human resources needed to operate the business

c. A Production Plan:

- Describe the services the company will offer.
- Describe the management and organization of the company.

d. A Marketing Plan

- Use information collected from Statistic Canada's 2011 *Households and the Environment Survey*, and data from the survey conducted in your community to select a province or region that would be a viable market for the company.
- Conduct market research to find the size of the energy audit industry nationally, and in your target market.
- Compare at least three different methods for delivering the company's services to customers by weighing pros and cons.
- Select the most appropriate method of delivering the company's services to customers.
- Identify pricing for the company's services, including a flat rate for energy audits, an hourly rate for labour, and any other pricing requirements.
- Compare at least three possible advertising methods for the company, estimating price and possible impact on target market.
- Identify the most appropriate method of advertising the company.

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e. A Financial Plan

- Calculate the start-up capital needed for the company, using information generated in the Resource Analysis.
  - Create a realistic cash-flow projection for the company including:
    - Start-up capital (money available when the venture begins)
    - Cash outflows (expenses; such as materials, equipment, wages, etc.)
    - Cash flow incomes (money generated from business)
2. Once your venture plan is complete, you will share your venture plan with a peer from your class and receive feedback.
3. After you have incorporated the feedback suggestions from your peer review, you will present your business plan to the class, as if they were a group of investors. This 5-10 minute “pitch presentation” should include:
- A concise explanation of your venture
  - Which market you have chosen and why you chose it
  - A summary of your production plan
  - A summary of your marketing plan
  - A summary of your financial plan
  - Statistics to support your pitch
  - Visual aids to support your pitch

## Theme 2- Lesson 4: Create a Venture Plan

### Venture Plan Assignment Rubric

Component	Level 1	Level 2	Level 3	Level 4
<b>Overview</b>	Executive summary attempts to include key points of the venture plan.	Executive summary includes some key points of the venture plan.	Executive summary accurately summarizes most key points of the venture plan.	Executive summary concisely and accurately summarizes all key points of the venture plan.
	There is an attempt to describe the venture and note a key service or target market.	The venture is described, noting one key service and a target market	The venture is described clearly, noting several key services and an appropriate target market	The company is described clearly and accurately, noting a range of services and a well-researched target market.
	Mission statement provides some indication of purpose for the company.	Mission statement is a general statement of purpose for the company.	Mission statement is a clear statement of purpose which provides a framework within which the company's strategies are formulated.	Mission statement is a clear statement of purpose which represents the company's philosophy and attitude and provides a framework within which its strategies are formulated.
<b>Resource Analysis</b>	Listed equipment needs are not realistic or are missing several key pieces of equipment.	Listed equipment needs are realistic, but missing one key piece of equipment.	Listed equipment needs are complete and realistic.	Listed equipment needs are complete and realistic, considering stated philosophy of the company and the nature of the services the company is offering.
	Costs assigned to needed equipment are guesses of actual costs, without evidence provided.	Costs assigned to needed equipment are estimations of actual costs.	Costs assigned to needed equipment are estimations of actual costs, based on preliminary research.	Costs assigned to needed equipment are accurate estimations of actual costs, based on extensive research.
	Listed human resource needs are realistic, missing several key team members.	Listed human resource needs are realistic, but missing one key team member.	Listed human resource needs are complete and realistic.	Listed human resource needs are complete and realistic, and minimize start-up costs.
	Costs assigned to human resource needs are guesses of actual costs, without evidence provided.	Costs assigned to human resource needs are estimations of actual costs.	Costs assigned to human resource needs are reasonable estimations of actual costs, including competitive wages.	Costs assigned to human resource needs are reasonable estimations of actual costs, including competitive wages, as well as insurance, profit sharing, or other competitive advantages.



Component	Level 1	Level 2	Level 3	Level 4
<b>Production Plan</b>	Attempts to describe the services the company offers.	Describes services the company offers, including the performance of energy audits.	Clearly describes services the company offers, including the performance of energy audits and resulting modification to residential homes.	Clearly describes services the company offers, including the performance of energy audits, consultations, cost quoting, and resulting modification to residential homes.
	Some management roles and company organization are indicated.	Management roles and company organization are indicated.	Management roles and company organization are clearly defined, with specific tasks assigned to specific roles.	Management roles and company organization are clearly defined, with a brief job description given for each specific role.
<b>Marketing Plan</b>	Attempts to use information gathered from Statistics Canada to support their selection of a target market for their venture.	Uses information gathered from Statistics Canada to support their selection of a target market for their venture.	Uses information gathered from Statistics Canada and their own independent survey to support their selection of a target market for their venture.	Uses information gathered from Statistics Canada and their own independent survey to provide evidence that their selection of a target market is a strong choice.
	Attempts to include reference to the size of the energy audit industry.	Estimates the size of the energy audit industry nationally or in their target market.	Identifies the size of the energy audit industry nationally and in their target market with evidence.	Identifies the size of the energy audit industry nationally and in their target market, with evidence, and an assessment of realistic market-share for the company.
	Examines one method for delivering the company's services to customers.	Compares two methods for delivering the company's services to customers.	Compares three methods for delivering the company's services to customers.	Compares four or more methods for delivering their services to customers.
	Attempts to identify a delivery method for the company's services.	Identifies a delivery method for the company's services.	Selects a delivery method for the company's services by considering the pros and cons for each method of delivery.	Selects a delivery method for the company's services by researching other companies and considering the pros and cons for each method of delivery.
	Makes reference to pricing for services.	Provides a pricing list for services including a flat-rate for energy audits.	Provides a comprehensive pricing list for services including a flat-rate for energy audits, and an hourly rate for labour.	Provides a comprehensive pricing list for services including a flat-rate for energy audits, an hourly rate for labour, consultation, and quoting, identifying profit margins for each.
	Examines one advertising method.	Compares two different advertising methods, estimating price and possible impact on target market.	Compares three different advertising methods, estimating price and possible impact on target market.	Compares four or more different advertising methods, estimating price and possible impact on target market.

Component	Level 1	Level 2	Level 3	Level 4
<b>Marketing Plan</b>	Selects an advertising method.	Selects an advertising method considering price.	Selects an advertising method considering price and impact on the selected target market.	Selects an advertising method considering audience size, price and impact on the selected target market.
<b>Financial Plan</b>	Attempts to identify start-up capital needed for the venture.	Identifies start-up capital needed for the venture.	Identifies start-up capital needed for the venture by considering the equipment and human resource needs identified in the Resource Analysis.	Identifies start-up capital needed for the venture by considering the equipment and human resource needs identified in the Resource Analysis and adds a pre-determined percentage as a contingency budget.
	Cash-flow projection is unrealistic based on market size, and available company resources.	Cash-flow projection is based on estimates of start-up capital, expected cash outflows, and a generous estimate of cash flow incomes.	Cash-flow projection is based on estimates of start-up capital, expected cash outflows, and a realistic estimate of cash flow incomes.	Cash-flow projection is based on start-up capital needs, expected cash outflows, and a conservative estimate of cash flow incomes.
<b>Presentation</b>	Presentation is less than four minutes.	Presentation is between four and five minutes.	Presentation is between five and seven minutes.	Presentation is between eight and ten minutes.
	Presentation contains one statistic that supports ideas.	Presentation contains two statistics that support ideas.	Presentation contains three statistics that support ideas.	Presentation contains four or more statistics that support ideas.
	Presentation contains appropriate visual aids.	Presentation uses appropriate and creative visual aids to communicate ideas.	Presentation uses two to three appropriate and creative visual aids that effectively communicate ideas.	Presentation uses four or more appropriate, creative, and engaging visual aids that effectively communicate ideas and connect with the audience.
	Presentation explains the venture, target market, production plan, marketing plan, and financial plan but key pieces of information are missing.	Presentation explains the venture, target market, production plan, marketing plan, and financial plan.	Presentation clearly explains the venture, target market, production plan, marketing plan, and financial plan.	Presentation clearly and concisely explains the venture, target market, production plan, marketing plan, and financial plan.

# Statistics Canada Households and the Environment Survey Lesson Pack

## Theme 3: Investigate an Environmental Issue



### Overview:

Information from Statistics Canada's 2011 *Households and the Environment Survey* reveals Canadian's awareness of and response to a variety of environmental and ecological issues.

In this theme, students will explore one of these issues in-depth. They will conduct independent research to learn about an Environmental issue, compare statistics from the *Households and the Environment Survey* to assess the impact of their chosen topic. Additionally, students will survey their peers to determine the level of awareness about their chosen topic, and use this information to create a community education plan to raise the level of awareness for a chosen target audience.

### Suggested Grade Level:

- Grades 9-10

### Topics:

- Mathematics
- Science

### Cross-curricular Connections:

- English Language Arts
- Visual Arts

### Materials:

#### Lesson 1: Learn About an Environmental Issue

- 2011 *Households and the Environment Survey*: Tables 1-20

#### Lesson 2: Assess the Impact on the Environment

- 2011 *Households and the Environment Survey*: Tables 1-20

#### Lesson 3: Assess the Level of Awareness

- 2011 *Households and the Environment Survey*: Tables 1-20

## Lesson 4: Raise the Level of Awareness

- Handout: Community Education Plan Assignment
- Rubric: Community Education Plan Assignment
- 2011 *Households and the Environment Survey*: Tables 1-20

### Assignments:

- Research an environmental issue.
- Investigate the impact of an environmental issue.
- Conduct a survey to determine the level of awareness about an environmental issue.
- Create a community education plan.

## Theme 3 - Lesson 1:

### Learn About an Environmental Issue

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Science:

- Investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.
- Select, organize, and record relevant information on research topics from various sources, including electronic, print, and/or human sources.
- Analyse and interpret qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis, identifying possible sources of error, bias, or uncertainty.
- Identify and locate print, electronic, and human sources that are relevant to research questions.

Mathematics:

- Make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other sources.

#### Assignments:

- Research an environmental issue.

#### Activity:

Begin this lesson by having students brainstorm a list of issues and topics that impact the environment and/or public health. This could include:

- Radon Awareness
- Household Hazardous Waste
- Water Usage and Conservation
- Clean water
- Energy Conservation
- Land degradation

Students will then each select an item from the list they generated and conduct independent research to identify:

- Why this is an important issue
- How this issue impacts the environmental and/or public health

**Guiding Questions :**

- Why do you think this issue is important?
- What are some of the long-term effects of this issue?
- Is there a solution? What is required?

Students will then use Statistics Canada's 2011 *Households and the Environment Survey* to compare their home-province's level of adoption of solutions for these issues to the national average.

For example, if a student has selected water conservation as their environmental issue, refer them to the Table of Contents in the 2011 *Households and the Environment Survey*. There they will see that water conservation is covered in Tables 1 and 2. The student can then use those tables in their investigation.

**Guiding Questions :**

- How does your home-province's rate of adoption of solutions compare to the national average?
- Why do you think this is the case?

## Theme 3 - Lesson 2:

### Assess the Impact on the Environment

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Science:

- Investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems.
- Select, organize, and record relevant information on research topics from various sources, including electronic, print, and/or human sources.
- Analyse and interpret qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis, identifying possible sources of error, bias, or uncertainty.
- Identify and locate print, electronic, and human sources that are relevant to research questions.
- Draw conclusions based on inquiry results and research findings, and justify their conclusions.

Mathematics:

- Make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other sources.

#### Assignment:

- Investigate the impact of an environmental issue.

#### Activity:

Begin this lesson by having students share some of the information they discovered while researching an environmental issue. Have each student:

- Explain their topic
- Explain why it is important
- Explain possible long-term impacts

Next, have students use Statistics Canada's 2011 *Households and the Environment Survey*, in conjunction with their independent research to determine ways in which this issue locally impacts their home-province. This could include:

- Energy conserved/wasted
- Waste produced/recycled
- Environmental damage
- Potential for recycling of materials
- Health repercussions such as, lives saved or illnesses prevented
- Financial repercussions

Finally, have students develop a method of visually representing their findings in the form of an infographic, graph, or digital poster using free online presentation tools.

**Guiding Questions:**

- What was the most interesting fact you uncovered about your topic?
- What statistics do you think will be the most impactful when people hear it?
- Why have you chosen this method of visually representing your findings?



## Theme 3 - Lesson 3:

### Assess the Level of Awareness

**Estimated Completion Time:** 1+ hours

#### Learning Objectives:

Science:

- Select, organize, and record relevant information on research topics from various sources, including electronic, print, and/or human sources.
- Analyse and interpret qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis, identifying possible sources of error, bias, or uncertainty.
- Draw conclusions based on inquiry results and research findings, and justify their conclusions.
- Communicate ideas, plans, procedures, results, and conclusions orally, in writing, visually, and/or in electronic presentations, using appropriate language and a variety of formats.

Mathematics:

- Make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other sources.
- Develop and apply reasoning to make mathematical conjectures, assess conjectures, and justify conclusions, and plan and construct organized mathematical arguments.

#### Assignment:

- Conduct a survey to determine the level of awareness about an environmental issue.

#### Activity:

Begin this lesson by discussing the different methods students have seen before for raising awareness about an issue. This might include:

- Posters
- Television commercials
- Radio commercials
- Social media posts
- Emails
- Petitions

Have students arrange each item on the list they create from the most to the least effective.

Next, have students design and administer a survey to their peers and people in their community relating to their selected environmental issue. Their survey should determine:

- The level of awareness related to their topic
- The level of adoption of the suggested behaviors that can positively impact their topic
- Reasons people chose to adopt or not adopt suggested behaviors

Have students graph their findings to make a visual representation of their results.

If possible, have students compare their findings to applicable data in Statistics Canada's 2011 *Households and the Environment Survey*.

### **Guiding Questions :**

- What do you think is the best method of raising awareness?
- How would you describe the level of awareness about your topic in your community?
- How does your community's level of awareness about your topic compare to the averages for Canada and your home province?

## Theme 3 - Lesson 4:

### Raise Awareness

**Estimated Completion Time:** 3+ hours

#### Learning Objectives:

Science:

- Select, organize, and record relevant information on research topics from various sources, including electronic, print, and/or human sources.
- Analyse and interpret qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis, identifying possible sources of error, bias, or uncertainty.
- Draw conclusions based on inquiry results and research findings, and justify their conclusions.
- Communicate ideas, plans, procedures, results, and conclusions orally, in writing, visually, and/or in electronic presentations, using appropriate language and a variety of formats.

#### Assignment:

- Create a community education plan.

#### Activity:

Begin this lesson by having students identify a key piece of information related to their topic that their research shows people are not aware of.

Distribute Handout: *Community Education Plan Assignment* and have the students review it. Ask students to develop a strategy and product to educate a target audience within their community about their selected environmental issue.

Some target audiences they might consider are:

- Young students
- Teenagers
- The elderly
- Business owners
- Parents
- Property managers
- Home owners

Their plan should include:

- Statistics derived from Statistics Canada's *Households and the Environment Survey*
- Information cited from their independent research
- Information gathered from the survey they conducted of their peers and their community
- Plans to make a product to communicate this information to their target audience

The resulting product should be appropriate in form and content for their target audience. The format of their creation could be:

- A digital poster
- An Infographic
- A radio commercial
- A television commercial

Students will present what they created to the class, and deliver it to the target audience (as appropriate).

### **Guiding Questions :**

- What key piece of information do you think people should be made aware of?
- Why did you select this target audience?
- How will your product help educate your target audience?

## Theme 3 - Lesson 4: Raise Awareness

### Handout: Community Education Plan Assignment

For this assignment, you will develop a plan and product to educate a target audience within your community about your selected environmental issue.

1. Select an appropriate target audience for your community education plan.
  - Some target audiences you might consider are:
    - Young students
    - Teenagers
    - The elderly
    - Business owners
    - Parents
    - Property managers
    - Home owners
2. Develop your community education plan.
  - Your plan should include:
    - Data derived from Statistics Canada's *Households and the Environment Survey*, or other reputable statistical source, to persuade the target audience
    - Information from your independent research, including details related to the long-term impact of this issue
    - Information gathered from the survey you conducted of your peers and your community
    - Designs for a product to communicate this information to your target audience
    - A strategy for communicating your plan to people (e.g. social media, advertisements, etc.)
3. Develop your community education product or products.
  - This product or products should be appropriate in form and content for their target audience.
  - The format of their creation could be:
    - A digital poster
    - An Infographic
    - A radio commercial
    - A television commercial
    - A piece of music
4. Present your community education product to your class and deliver it to your target audience (as appropriate).

## Theme 3- Lesson 4: Raise Awareness

### Rubric: Community Education Plan Assignment

Component	Level 1	Level 2	Level 3	Level 4
<b>Plan</b>	Identifies a target audience.	Identifies and defines a target audience.	Identifies and defines a target audience with a clear explanation why this audience is appropriate for outreach.	Identifies and defines a target audience with a clear explanation why this audience is appropriate for outreach and demonstration of insight into audience characteristics.
	Includes some data from Statistics Canada's <i>Households and the Environment Survey</i> in plan.	Includes relevant data from <i>Canada's Households and the Environment Survey</i> in plan.	Includes persuasive data from <i>Canada's Households and the Environment Survey</i> in plan.	Includes persuasive data from <i>Canada's Households and the Environment Survey</i> and one other reputable statistical source in plan.
	Demonstrates some evidence of independent research.	Includes information from independent research.	Includes information from independent research, including details related to the one area of long-term impact.	Includes information from independent research, including details related to several areas of long-term impact.
	Completes a survey of target audience.	Completes a survey of target audience and presents information extracted from survey in plan.	Completes a survey of target audience and incorporates information extracted from survey into plan.	Completes a survey of target audience, incorporates information extracted from survey into plan, and presents information in an effective infographic.
	Includes basic concept for one appropriate educational product in plan.	Includes detailed concept for one appropriate educational product in plan.	Includes detailed concept for one appropriate educational product and basic concept for two complementary products.	Includes detailed concepts for two or more appropriate educational products.
	Indicates some thought about strategy for product launch.	Outlines general strategy for product launch.	Describes clear strategy for product launch.	Describes clear, insightful strategy for product launch.

Component	Level 1	Level 2	Level 3	Level 4
<b>Product</b>	Develops a community education product that contains content inappropriate for the target audience.	Develops a community education product that contains some appropriate content for the target audience.	Develops a community education product that contains appropriate content for the target audience.	Develops a community education product or products that contain appropriate and appealing content for the target audience.
	Develops a community education product in an inappropriate format for their target audience.	Develops a community education product format that may be appropriate for some of the target audience.	Develops a community education product format that is appropriate for the target audience.	Develops a community education product format that is appropriate and engaging for the target audience.
	Includes some evidence from Statistics Canada's <i>Households and the Environment Survey</i> , survey of target audience, or independent research.	Includes some evidence from Statistics Canada's <i>Households and the Environment Survey</i> , survey of target audience, and independent research.	Includes relevant evidence from Statistics Canada's <i>Households and the Environment Survey</i> , survey of target audience, and independent research.	Includes relevant and persuasive evidence from Statistics Canada's <i>Households and the Environment Survey</i> , survey of target audience, and independent research.
<b>Presentation</b>	Presents the community education product to the class, with little or no context.	Presents the community education product to the class, explaining the issue about which they are raising awareness.	Presents the community education product to the class, explaining the issue about which they are raising awareness, why they chose the target audience, and why they chose the selected format.	Presents the community education product to the class in a way that actively engages the class, explaining the issue about which they are raising awareness, why they chose the target audience, and why they chose the selected format