

# Global Warming Awareness

Workshop for ELSA 4/5



## ELSA Net workshop - Level 4/5

### Global Warming Awareness

**Content objectives:**

- Students will understand the science of global warming
- Students will be able to talk about the impacts of global warming
- Students will learn about the effects of climate change on Canada's north
- Students will gain ideas to take action in their daily lives

**Language objectives:**

- Students will learn vocabulary related to climate change
- Students will practice listening and note taking skills
- Students will find, remember and report information
- Students will read analytical article and practice reading comprehension
- Students will practice communicative skills in decision making

**Materials:**

- vocabulary cards

**Activity 1**

- teacher resource
- diagram overheads
- diagram worksheets
- greenhouse gas cards
- carbon dioxide graph
- GVRD posters

**Activity 2**

- Impacts posters
- questions worksheet and answers

**Activity 3**

- reading
- comprehension questions

**Activity 4**

- Instruction sheet
- Transportation chart
- Pros and cons cards

**Activity 5**

- Instruction sheet
- question cards
- Survey

**Activity 6**

- Instruction sheet
- Game board

- Game cards
- Dice and markers

Time	Activity	
15 min	<b>Warm-up-brainstorm</b>  Full class	<p><b>Environment questions:</b> what do you know about the changing climate? Reasons for climate change, energy use, emissions</p> <p><b>Questions:</b> What is the environment? What do you think is the worst problem facing Canada's environment? In the countries you came from, are there environmental problems? What are they? Do you think people should think about the environment in their daily lives? Why/why not?</p> <p>While brainstorming, write vocabulary that may be new to some students on the board.</p>
15 min	<b>Vocabulary</b>	Industrial Revolution  Photosynthesis  Sustainable  Absorbed  Reflected  Atmosphere  Fossil fuels  Emissions  Pollution  Energy Efficient  Introduce the vocabulary list on the board, eliciting meanings and giving explanations. Students do matching exercise, using definitions Words and definitions are on separate cards with magnets on the back. Students each have one card, they must talk to other students to find the match for their card. Practice pronunciation and stress.

20 min	<b>Activity 1</b>  <b>Listening and filling in diagrams/matching cards</b>  <b>Activity</b>	<p>Students will listen to explanations of the science behind global warming.</p> <p><b>1.How a greenhouse works</b>-Students will listen, then give answers to fill in the diagram on the overhead.</p> <p><b>2.How the greenhouse effect works</b>-Students will listen and fill in information on their own diagram and then answers will be checked on the overhead.</p> <p><b>3.Where greenhouse gases come from</b>-Students will listen and match cards of types of greenhouse gases and what produces them.</p> <p>4.Students will guess if carbon dioxide is increasing or decreasing in our atmosphere and the students will listen to see if they are correct. Then graph will be shown and students will guess how much the carbon dioxide will increase by 2050.</p> <p>Sources: on “where to find more information” sheet</p>
20 min	<b>Activity 2</b>  <b>Gathering info</b>	<p><b>Impacts:</b> Posters with information about potential and actual impacts of global warming are set up around the room. Students work in pairs to gather information to fill in a workpage. Students read the questions together. Leaving the worksheet at the table, students go to the walls at opposite sides to read information. They return to their seats to share the information with their partners and fill in the page. They may need to make several trips to gather all of the information.</p> <p>6-8 topics: each student finds info on three to four impacts and fills in worksheet with partner, check answers against a master (during break they can look at posters they didn't already read). Rising sea levels, tropical storms, crop yields, water availability, flooding, animal extinction, disease, fishing Vocabulary: some vocab dealt with on the posters. Go over increasing/decreasing and check for comprehension.</p>
15 min	<b>Break</b>	
25 min	<b>Activity 3</b>  <b>Reading</b>	<p>Students work in groups of five, each student reads one section while the others answer questions on a workpage, two questions for each section.</p>

		<b>Reading:</b> effects of Global Warming on Canada's native people in the North.
5 min	<b>Intro to stations activity</b>	Brainstorm with a web on the board: what are some things you can do in your personal lives to reduce the effects of global change? 3 stations: Instruction sheet for each activity
50 min	<b>Personal action</b>  <b>Activity 4</b>  <b>Activity 5</b>  <b>Activity 6</b>	<b>Transportation:</b> Students follow written instructions. This station has a chart listing four means of transportation; bus, car, bicycle and walking. Cards listing the pros and cons of each method are placed on the chart in the appropriate box. Students will also write their own pros and cons and place them in the appropriate box.  <b>Conserving energy at home</b> – Students read a card with a question and then turn it over to read the answer, as well as tips for conserving energy at home. They then complete a survey to find out which actions they already take, which they could take and which they wouldn't choose to take. If there is time they discuss their survey answers.  <b>Food and Consumption choices</b> – buy locally, eat less meat, buy recyclables, environmentally friendly products, cutting down on packaging, using cloth bags etc.  Game board Students will play a game which involves making a choice, such as whether to buy grapes transported from South America, or apples grown in the Okanogan.
15 min	<b>Wrap up</b>	Do you think it would be hard to make these changes? Which ones are too hard for your life right now? Which changes would be easy? Which ones are you thinking of trying? What do you think is the most important thing to do?  Answer any questions, hand out follow up materials to teacher (where to find more information?), fill in evaluations.

## Teacher Resource to Explain The Science of Global Warming

### **1. To be explained using the “How a greenhouse works diagram”**

“What is a greenhouse? A greenhouse is a house made of glass that keeps plants warmer than the temperature outside. The rays of light from the sun go through the glass and are absorbed by the plants and soil inside the greenhouse. The plants and soil change the light energy from the sun into heat. This heat then is kept inside the greenhouse by the glass so the temperature inside the greenhouse is warmer than outside.”

*Put the overhead of the greenhouse on the board before starting the explanation. After the explanation ask the students to fill in the labels on the diagram.*

- 1. What is coming from the sun?*
- 2. What is the greenhouse made of?*
- 3. What do the plants and soil change the light energy into?*

### **2. To be explained using the “Greenhouse effect diagram”**

“The atmosphere is like a blanket made of gases and little drops of water that covers the earth. It protects the earth from the harmful rays from the sun. It also keeps the earth warm like the glass of a greenhouse. Like in the greenhouse the rays of light energy from the sun come to the earth. Different things happen to the energy from the sun. About half of the energy that the sun gives off doesn’t make it to the earth’s surface. 50 % of the energy from the sun is either reflected by the atmosphere, or by snow and ice on earth and bounces back in to space, or is absorbed by the atmosphere and never gets to the earth’s surface. So that leaves about 50% of the earth’s energy that gets to the earth’s surface. This energy is absorbed by the land and oceans on earth. The land and oceans change the energy in to heat and this is what warms our planet and makes it possible for the plants

and animals we have now to live. The energy from the sun that the land and oceans have changed to heat does two things: Some of it goes back in to space. But some is kept in by the atmosphere like the glass of the greenhouse keeps the heat in. The gases that don't let the heat through the atmosphere in to space are called greenhouse gases. Greenhouse gases absorb the heat that is coming from the land and oceans and bounce it back to earth. These greenhouse gases warm up the earth."

*Give each student a copy of the "Greenhouse Effect" diagram to fill in the missing information while you are explaining.*

*Answers*

- 1. This is the atmosphere*
- 2. Reflected by the atmosphere*
- 3. Reflected by the snow and ice*
- 4. Absorbed by the atmosphere*
- 5. Absorbed by the land and oceans on earth*
- 6. Heat kept in by the atmosphere.*

### **3. Script to use for the Greenhouse gases cards**

"Other than water, there are 3 main greenhouse gases. One is Nitrous oxide  $N_2O$  which comes from agricultural fertilizers that are used to grow plants on farms. The second one is Methane  $CH_4$  which comes from farm animals such as sheep and cows, landfills or garbage dumps and from rice paddies, which are the fields where people grow rice. Nitrous oxide and methane absorb much more of the heat from the earth than carbon dioxide, but there is much less of them in the atmosphere than the third gas.

Carbon dioxide is the most important because there is much more of it in the atmosphere than nitrous oxide or methane. Carbon dioxide comes mainly from the burning of fossil fuels such as coal, oil and gas. It also comes from plants and animals but today most carbon dioxide being created and going in to our atmosphere comes from people using coal, oil and gas. Things like factories burning coal to produce energy, driving cars and trucks, and heating our houses, produce carbon dioxide."

*Give each pair/group of students cards of pictures that they have to match to the correct type of gas.*

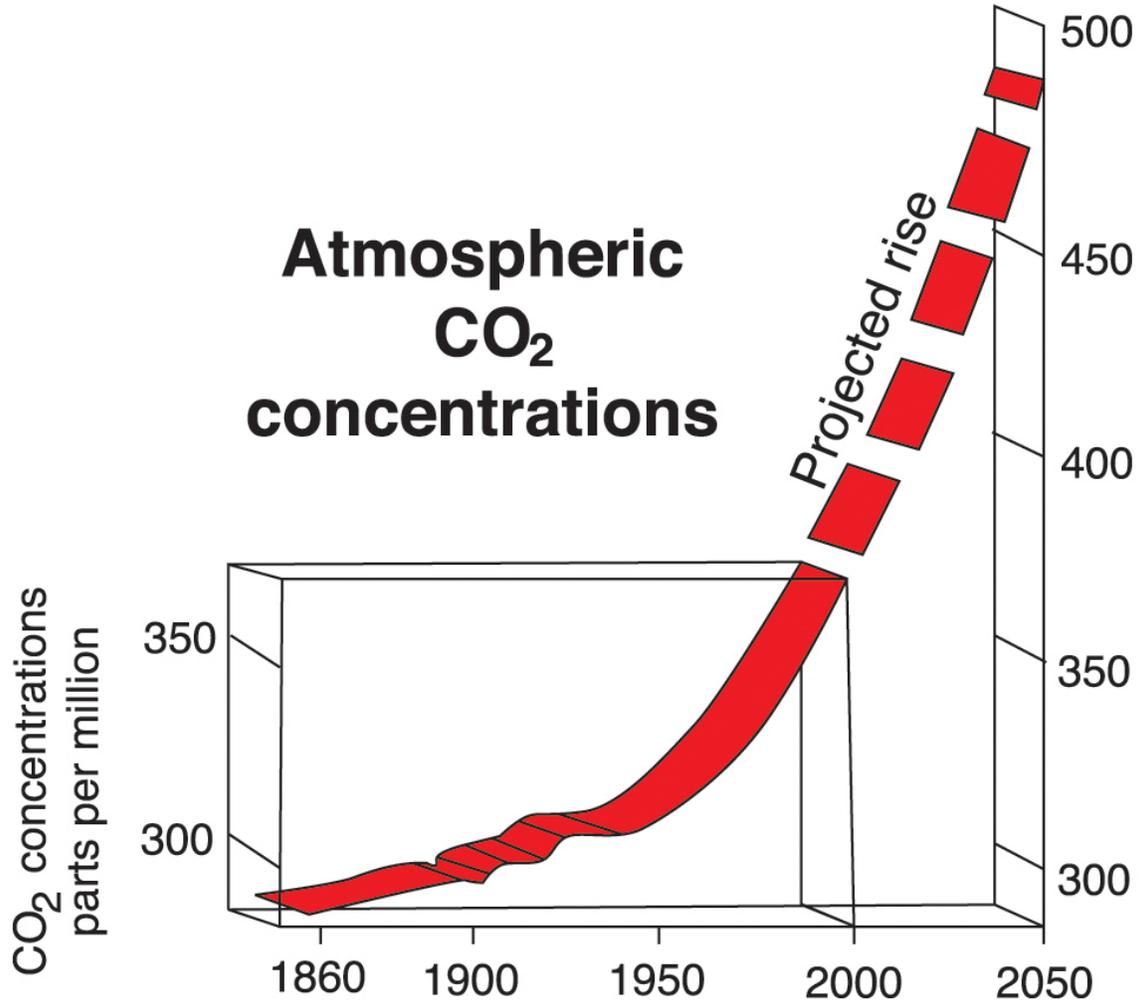
#### **4. To be explained using the increase in carbon dioxide in the environment chart (GVRD)**

"Carbon dioxide is normally in nature and long before we had cars and factories and used fossil fuels people burned wood in fires to cook and for heat. But before the Industrial Revolution in the 1750's the carbon that was in the atmosphere was balanced by photosynthesis by plants and going back in to the ocean. Since the Industrial revolution we have made a lot more carbon dioxide and not being balanced by it's photosynthesis of plants and going back in to the ocean So as a result, our atmosphere today has 32 % more carbon dioxide than it did before the Industrial Revolution."

*Before reading the script ask students to guess whether we have more carbon dioxide in the atmosphere now or in 1750. Ask them to guess how much more or how much less. Students will then listen to check if they are correct.*

Industrial Revolution	Photosynthesis
Sustainable	Absorb
Reflect	Atmosphere
Fossil fuels	Emissions
Pollution	Energy Efficient

how plants use the sun's energy to change carbon dioxide into oxygen	the time starting in 1750 when cities started to have many factories that used coal and grew really quickly
to take something in and not let it pass through	something that can be used now but also saves some for the future
a blanket made of gases and little drops of water that covers the earth and protects the earth from the harmful rays from the sun	bounce back away from the surface
something released in to the air such as from a car or smoke from a fire	fuel from the earth, for example coal, oil and gas
using a small amount of energy, as little as possible	harmful things in the environment such as garbage in a river or smoke from a factory



GVRD-Temperature Rising Poster - <http://www.gvrd.bc.ca/climate/poster-full.htm>

carbon dioxide



carbon dioxide



methane



methane



nitrous oxide



nitrous oxide



*Work with a partner. Read the questions. Leave the paper at your table and go to opposite sides of the room. Read the posters there and bring back the information to share with your partner. Answer the questions. You can go back to look at the posters as many times as you need to.*

## **What could happen as a result of climate change?**

1. What will be the result of the faster snow melt in the mountains of North America?

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2. What will happen to fishing communities if the coast is eroded by rising sea levels?

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3. What is the name of a disease that is spread in dirty flood waters?

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4. What is threatened by the severe weather in North America?

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5. Where could crop yields *increase* because of global warming? Where will they probably decrease?

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6. What dangerous animal sometimes walks into town looking for food when it can't hunt on the thin ice?

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7. What is an animal habitat?

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8. What are some countries that face changes to forests because of global warming?

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## Answers

1. There will be more flooding in the winter and less water in the rivers during the summer.
2. They will be forced to move inland and they will lose the revenues from tourism.
3. Cholera is a disease that is spread by flooding.
4. Communities and habitats are threatened.
5. Crop yields could increase in East and Southeast Asia. They will probably decrease in Central and Southern Asia and Africa.
6. Polar bears walk into town looking for food.
7. A habitat is a place where an animal can live and find the food and shelter that it needs.
8. Some countries that face changes to their forests are Canada, the USA, Australia, New Zealand and Brazil.

## Global Warming Reading

### **Effects of Global Warming on Canada's Northern People**

Imagine you are traveling on a road that leads from your house to the nearest town. It's a road that has been there for hundreds of years. Your grandparents and great-grandparents used this road to go to town when they needed food, to visit friends or to go to school or church. Now imagine that the road in front of you breaks open, and a huge hole filled with icy water lies in front of you, blocking your way. This could be a real experience if you live in Canada's north. The paths over the frozen ice, where the Inuit people have traveled for generations, are no longer safe.

Some people think that global warming is just an idea and that the earth's temperature is changing at a natural rate. But if you live in Canada's North, you can see the changes happening around you. One example is the thawing of the permafrost. In the north of Canada, the ground is frozen all year round, even in the summer – or it was. Now, in some areas, that frozen ground has begun to thaw. Houses that were built on the permafrost are leaning over and falling down. Erosion of the beaches is changing the land and people have to move away from the ocean.

The Inuit are native people living in Canada's North. They have deep knowledge about how to live in the harsh climate of the Arctic and how to survive "on the land" through hunting and fishing. Their culture is based on ideas about respect for the land, the animals and other people. They have hunted polar bears, caribou, and seals for many generations, but it is becoming harder for them to teach their skills to their children. The migration habits of the animals they know are changing, and other animals from the south, like black bears, are moving into the area.

The Inuit tradition includes winter hunting on the sea ice. Now, however, the winter season is shorter and the ice is not reliable, so young hunters have less opportunity to learn the skills of their parents and grandparents. As hunting becomes more difficult, the Inuit must get all of their food supplies from the South. Transporting food from Southern Canada is very expensive. Since even roads and airports are being damaged by the thawing of the permafrost, some Inuit feel that it isn't safe to depend on these supplies. Many leaders are worried about the loss of traditional survival skills, which are such a big part of the Inuit culture.

Since the Inuit are not causing the change in global temperatures, some of them are wondering what they can do to preserve their culture. Sheila Watt-Cloutier is an Inuit leader who is doing something. She has been talking to leaders of countries all over the world, asking them to sign agreements to stop putting carbon dioxide into the atmosphere. She believes that it is important to slow the climate change so that her people can keep their traditions alive. She says that the Inuit are in danger of becoming extinct, just like the polar bear. She and other Inuit people are writing about the changes they see in their part of the world. They hope that the rest of the world will understand that change is happening right now and that we all have to work together to stop it.

## Questions

1. The story asks you to use your imagination. What are you asked to imagine?

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2. What part of Canada does the story talk about?

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3. What is a word for the frozen ground in the North?

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4. Why do people have to move away from the ocean?

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5. Who are the Inuit?

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6. What is the Inuit culture based on?

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7. Why is it hard for young hunters to learn their parents' and grandparents' skills?

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8. What are Inuit leaders worried about?

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9. Who is Sheila Watt-Cloutier?

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10. What has she been doing to try to preserve her culture?

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## **Sustainable Transportation Instructions**

1. Read the introduction

Introduction: Cars add more carbon dioxide to the environment than anything else in Canada. We all have a choice about which form of transportation we use and how often. This activity is going to get you to think about different transportation options and what are the pros (advantages) and cons (disadvantages) about each form of transportation.

2. One student picks a card and reads it to the group.
3. Group talks about where to put the card.
4. Add your own ideas for pros and cons on the blank pieces of paper and put them in the right box.
5. Discuss with your group:
  - a. Which form of transportation do you usually use and why?
  - b. Compare the pros and cons of each type of transportation
  - c. Are there any pros for one type that are cons for another?

<p>In 2004 there were 15 000 car and motorcycle accidents in Canada.</p>	<p>It is faster to travel long distances by car.</p>
<p>In 2004, 2730 people were killed by cars and motorcycles in Canada.</p>	<p>On average cars use more gas now than 20 years ago. Cycling produces 0 greenhouse gas emissions.</p>
<p>1/3 of all air pollution in Canada comes from cars.</p>	<p>Walking produces 0 greenhouse gas emissions.</p>

<p>6 out of 10 Canadians need more exercise.</p>	<p>In a car it is quick to make many stops at different stores.</p>
<p>Including gas, insurance, parking, and maintenance owning a car costs \$25 a day on average.</p>	<p>Public transportation is more energy efficient than driving a car.</p>
<p>Walking alone at night is not always safe.</p> <p>Ice and snow make sidewalks more dangerous in the winter.</p>	<p>Many people can get on one bus so there are less greenhouse gas emissions per person.</p>

<p>Driving to work with other people means saving money and less greenhouse gas emissions per person.</p>	<p>Walking for 30 minutes increases your energy level and reduces stress.</p>
<p>Special lanes on the road for bikes make it safer to cycle.</p>	<p>Parking downtown can be expensive.</p>
<p>Riding a bike at night without lights makes it very hard for people driving cars to see you.</p>	<p>Buses don't run as often at night.</p>

## **Global Warming and Energy Efficiency in your Home Instructions**

1. Read the Introduction below

Introduction: The burning of fossil fuels to provide heat and electricity to our homes is adding more carbon dioxide to the atmosphere which is causing global warming. One of the easiest ways to reduce the amount of carbon dioxide in our atmosphere is to be more energy efficient. This activity will teach you some easy ways to save energy and be more energy efficient in your home.

2. Play the trivia game with your group

Trivia game instructions

- a) Pick a card.
- b) Read the question.
- c) Everybody guess.
- d) Read the answer.

3. Fill-in "Energy Efficiency in your Home" survey.

4. Compare your survey answers with the other people in your group.

5. Discuss which things you do and which things you want to start doing and why?

1. Lights use how much of your home's electricity?

- a- 3%
  - b- 5-10%
  - c- 30%
  - d- 50%
- 

2. What appliance uses the most energy in an average home?

- a- TV
  - b- computer
  - c- clothes dryer
  - d- fridge
- 

3. What is a good way to keep you and your house warm in the winter without having to use more energy to heat your house?

- a- Put a carpet on a cold wood or tile floor.
- b- Open your curtains so the sun can heat your house.
- c- Move furniture away from heat vents and radiators so that the heat can warm the whole room.
- d- Wear an extra sweater or sit under a blanket.

4. True or False, a shower uses less energy and water than a bath?

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5. How much less energy does a laptop computer use than a desktop (regular) computer?

- a- 10 % less
- b- 20% less
- c- 50% less
- d- 90% less

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6. True or false, a radio uses more energy than a TV?

7. How much of the energy used by a clothes washer is used to heat the water?

- a- 5%
  - b- 10%
  - c- 50%
  - d- 90%
- 



This is a symbol that is on appliances like dishwashers, clothes washers and fridges. What do you think this logo means?

- a-The Energy Star symbol tells me which is the most popular brand of appliance.
  - b-The Energy Star symbol tells me which appliance uses the least energy.
  - c-The Energy Star symbol tells me which appliance uses the most energy.
  - d-The Energy Star symbol tells me which appliance Hollywood stars like to buy.
- 

9. What is the difference between a regular light bulb and a CFL light bulb?

- a-They are the same.
- b-The CFL light bulb is for a special kind of lamp.
- c-The CFL light bulb uses less energy.
- d-The CFL light bulb can be used for a longer time.



1. Answer - (B) Lights use 5-10% of a usual home's electricity, so you should turn off the lights in you house when you are not using them.

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2. Answer - (C) A clothes dryer uses the most energy of any appliance in an average home. So a good way to save energy is to hang up your clothes so the air can dry them.

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3. Answer - This question is special, all the answers are correct!

4. Answer - True! Taking a short shower saves energy and water.

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5. Answer - (D) A laptop computer uses 90% less energy than a desktop (regular) computer.

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6. Answer - False. A TV uses more energy so if you like to listen to something while you work, listen to the radio.

7. Answer - (D) 90% of the energy used by a clothes washer is to heat the water so to save a lot of energy, wash your clothes in cold water.

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8. Answer - (B) The Energy Star symbol tells you which appliance uses the least energy. So when you are buying a new clothes washer, dishwasher, fridge or freezer look for the Energy Star.

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9. Answer - (C )and (D) are correct. CFL light bulbs use less energy and last for a longer time.

## Energy Efficiency in Your Home Survey

<b>Tips</b>	I do this	I want to start doing this	I don't want to do this
I turn off the lights in my house when they are not being used.			
I hang up clothes to dry; I do not use the dryer.			
I put a carpet on a cold wood or tile floor.			
I open my curtains so the sun can heat my house.			
I wear a sweater or use a blanket when I am cold; I do not turn up the heat.			
I move furniture away from heat vents and radiators so that the heat can warm the whole room.			
I take a short shower, not a bath, because a short shower uses less energy and water.			
I use a laptop computer, not a desktop, because a laptop computer uses 90% less energy.			
I listen to the radio, not the TV, if I want noise while I work because a radio uses less energy.			
I wash my clothes in cold water, not hot water, because 90% of the energy used by the washing machine is to heat the water.			
I look for the EnergyStar logo when I am buying a new appliance because it tells me which appliance is the most energy efficient.			
I buy CFL light bulbs because they use less energy and last longer.			

## Game board Instructions

Every time we go to the store, we make choices about what to buy, where to buy it, and how to carry it home. The choices we make are important to the environment. As you move around the game board, talk about the choices you can make that will reduce the amount of CO<sub>2</sub> that is going into our atmosphere.

Put your marker on start. Roll the dice to see how many spaces to move. When you land on a square, follow the instructions given.

**Discuss which is better to buy:**

**grapes from South America or apples from British Columbia**

**The grass is getting long in front of your house, and you notice that your neighbour's grass is long as well.**

**Ask the person beside you to share the purchase of a push mower (a grass cutter that you have to push).**

**Talk about why it is a good idea.**

**Discuss different ways to carry your groceries home from the store.**

**What could you put your groceries in?  
Which do you use and why?**

**You want to buy a bag of rice. Will you buy a large bag that will last for a month or more, or a small bag that you will use in a week.**

**Why?**

**Invite the person beside you to try the new vegetarian restaurant that just opened close to his/her home.**

**Think of the best arguments that you can.**

**Discuss different kinds of chicken you can buy: organic, local, free run, prepared, packaged.**

**Which will you choose and why?**

**You want to paint your fence but you don't have much money to buy paint.**

**What could you do?**

**It's your child's birthday (or your niece's or nephew's).**

**What kind of toy will you buy and why?**

**\* Remember to think about environment!**

## Where to Find More Information

### **Ways to be more energy efficient at home**

Climate Crisis

[www.climatecrisis.net/takeaction/whatyoucando/](http://www.climatecrisis.net/takeaction/whatyoucando/)

BC Hydro-Power Smart for Home

[www.bchydro.com/powersmart/tips/](http://www.bchydro.com/powersmart/tips/)

### **The science behind Global Warming**

The David Suzuki Foundation

[www.davidsuzuki.org/Climate\\_Change/Science/](http://www.davidsuzuki.org/Climate_Change/Science/)

Environment Canada-Climate Change

www.msc-

[smc.ec.gc.ca/education/scienceofclimatechange/IPCC/earth\\_thermostat\\_e.html](http://smc.ec.gc.ca/education/scienceofclimatechange/IPCC/earth_thermostat_e.html)

The Pembina Institute- Climate Change

[climate.pembina.org/issues/science-overview](http://climate.pembina.org/issues/science-overview)

### **Sustainable Transportation**

Re-Energy-Sustainable Transportation

[www.re-energy.ca/pdf/sustainable-transportation-bg.pdf](http://www.re-energy.ca/pdf/sustainable-transportation-bg.pdf)

UBC Trek Program-Quick Facts

<http://www.trek.ubc.ca/research/qfacts/facts.html>

Canadian Health Network-Active Transportation

[www.canadian-health-network.ca](http://www.canadian-health-network.ca)

Go for Green factsheet

[www.goforgreen.ca/at/eng/PDF/at\\_factsheet\\_ENG.pdf](http://www.goforgreen.ca/at/eng/PDF/at_factsheet_ENG.pdf)

### **Global Warming and Canada's north**

Guardian article by Paul Brown (December 2003)

<http://www.guardian.co.uk/environment/2003/dec/11/weather.climatechange>

National Geographic News article by Lisa Krouse (July 12, 2000)

<http://news.nationalgeographic.com/news/2000/12/122900inuits.html>

Common Dreams newsletter article by Suzanne Elston (Feb. 2007)

<http://www.commondreams.org/archive/2008/02/27/7334/>

The Great Warming

<http://www.thegreatwarming.com/localhero-interviewswcloutier.html>

### **Impacts of Global Warming**

<http://science.nationalgeographic.com/science/environment/global-warming/gw-impacts-interactive.html?fs=plasma.nationalgeographic.com>

**GLOBAL WARMING WORKSHOP EVALUATION**



I understood the teacher.	1	2	3
This topic was interesting.	1	2	3
<b>I learned</b>			
the science of global warming.	1	2	3
the impacts of global warming.	1	2	3
the effects of climate change on Northern Canada.	1	2	3
things I can do to help stop global warming.	1	2	3
<b>How was the</b>			
listening?	1	2	3
speaking?	1	2	3
writing?	1	2	3
reading?	1	2	3

**GLOBAL WARMING WORKSHOP EVALUATION**



**This class was**

too easy

too difficult

at the right level

I liked it when we

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I didn't like it when we

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Because of what I learned today, I will make changes in my life to reduce the effect I have on global warming.

YES

MAYBE

NO



# 1. Fresh Water Resources



**As North America warms up, scientists say there will be less snow in the mountains. As a result, there will be more flooding in the winter and less water in the rivers during the summer. This could lead to competition – and even fighting – over water resources.**

## 2. Rising Sea levels



**Because the sea level is rising, beaches in coastal communities and small islands will start to erode (sand and soil will wash away into the sea). Roads and buildings will be damaged during storms. Fishing communities will be forced to move inland and tourists will stop traveling to these areas.**

**Erode – water washes away soil, sand, plants and even rocks, buildings and trees**

# 3. Disease



**In tropical areas of the world, there could be more illnesses because of the increased flooding. Many diseases are carried in flood waters and these can lead to serious illness and death. Cholera is a disease that kills many people each year. There is a danger that cholera could spread because of higher water temperatures in coastal regions.**

**Tropical – warm climate**

**Cholera – a disease caused by bacteria,  
usually spread through dirty water**

## 4. Severe Storms in North America



**Scientists have already noted that storms in North America have become worse. Communities and habitats are threatened by the severe weather. The combination of climate change, development and pollution causes serious problems for people and wildlife.**

**As people spend more money to live near the ocean, severe storms are causing financial losses as well as danger to people's way of life.**

**Severe – very bad**

# 5. Agriculture



**By the middle of this century, crop yields could increase up to 20% in East and Southeast Asia, while decreasing up to 30% in Central and South Asia. In Africa there will be more drought and therefore much lower food production. In some countries, the crop yields could fall by 50%. We can expect food shortages in many parts of the world.**

**Crop yields - the amount of food that is grown each year**

**Drought - very low rainfall over a period of time.**

# 6. Polar Ice



**Glaciers and ice sheets at the poles and in high mountains are melting at faster rates. The glaciers are becoming smaller and the ice sheets are becoming thinner. Polar bears are having more problems finding food because the thinner ice makes hunting for sea lions and catching fish more difficult. They sometimes walk into towns looking for food. Some migrating birds can't find the right place to build their summer nests, so they don't lay eggs.**

**Glaciers – large areas of very thick ice**

**Ice sheet – glacier ice that is spread over the land.**

# 7. Extinction/Biodiversity



**Because their habitats are changing, many animals and insects will find it harder to find food and a good place to live. Many kinds of plants may die out as well. Many plants, animals and insects have become extinct in recent years and scientists believe that many more will disappear in the next twenty to fifty years. Higher temperatures will threaten wildlife in the Amazon tropical forest in South America, and in Australia and New Zealand, as well as many other places in the world.**

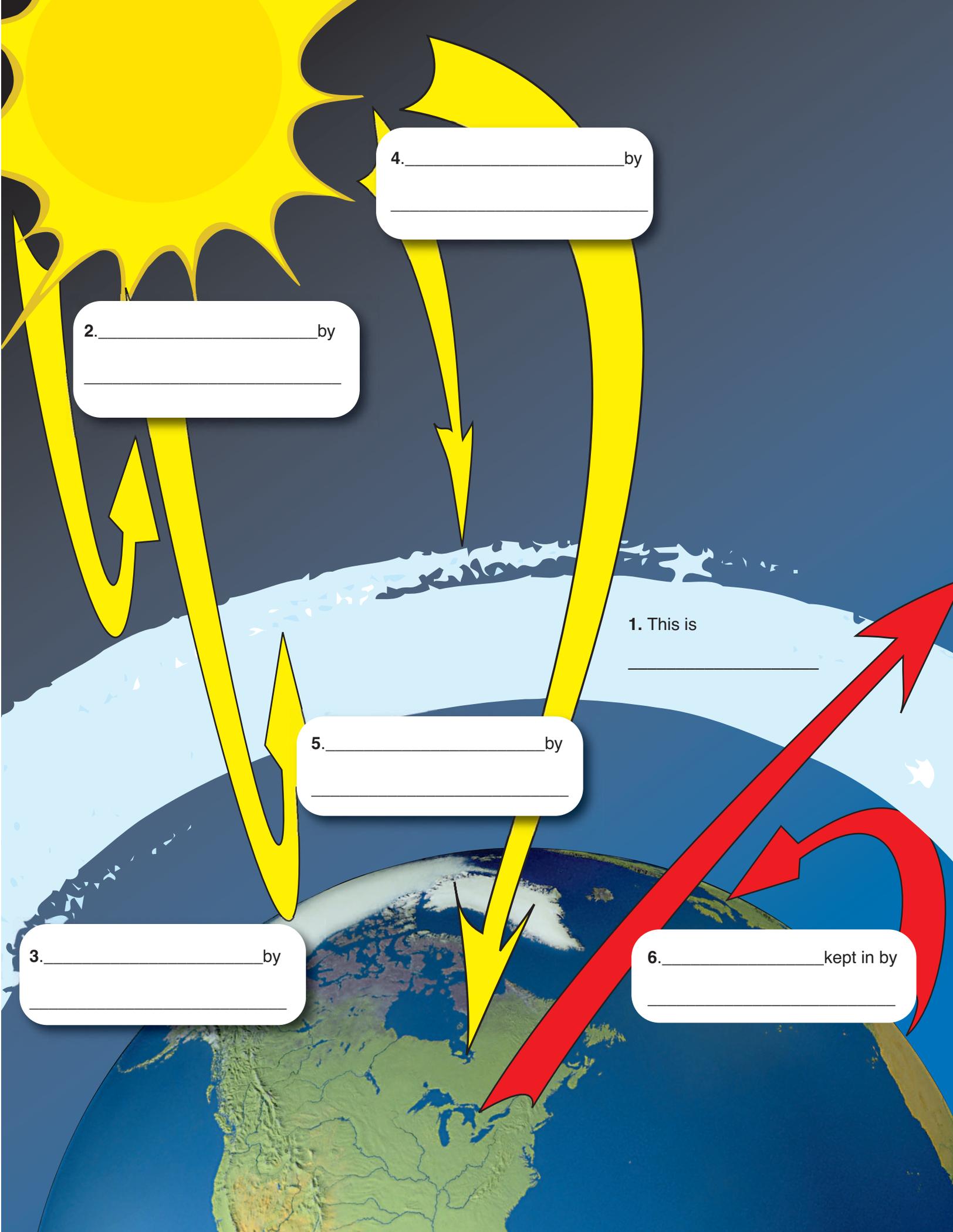
**Habitat – the place where an animal is able to live, and find the kind of food and shelter that it needs**

**Extinct – when an animal is extinct, there are no more of that animal left anywhere on earth**

# 8. Forests



**In many parts of the world, the forests will suffer from drought and fire damage. There have already been serious fires in British Columbia and the Western USA because there is less rain. Other countries that face changes to the forests are Australia, New Zealand and Brazil.**



4. \_\_\_\_\_ by \_\_\_\_\_

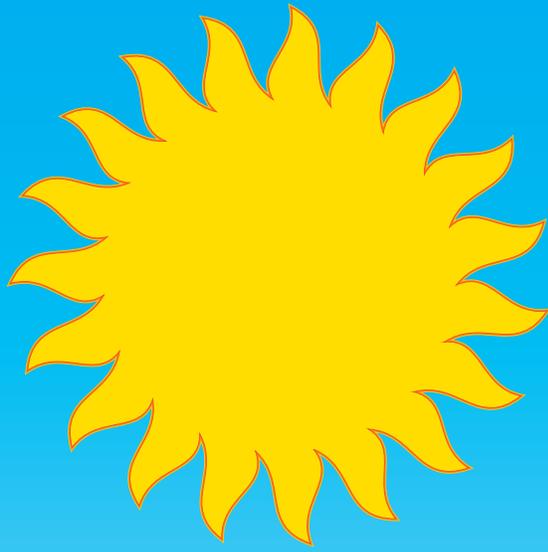
2. \_\_\_\_\_ by \_\_\_\_\_

1. This is \_\_\_\_\_

5. \_\_\_\_\_ by \_\_\_\_\_

3. \_\_\_\_\_ by \_\_\_\_\_

6. \_\_\_\_\_ kept in by \_\_\_\_\_



1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_



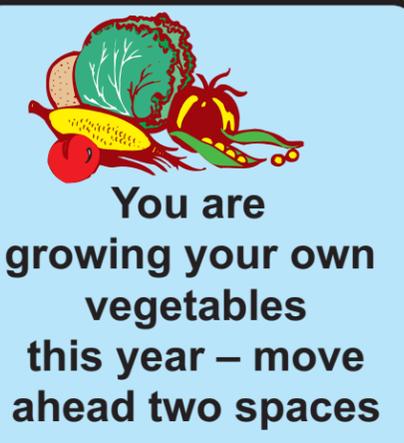
**START**



Pick a card



Pick a card



You are growing your own vegetables this year – move ahead two spaces

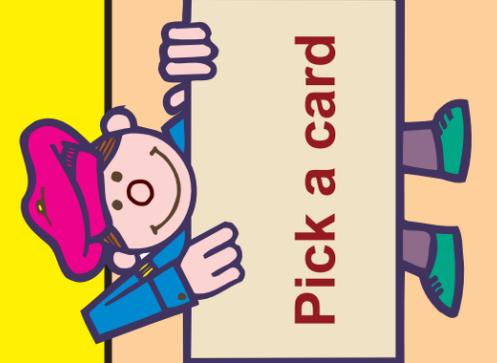
What can you do with old furniture?



Do you use a leaf blower to clean your walkway? Why or why not?



Pick a card



Pick a card



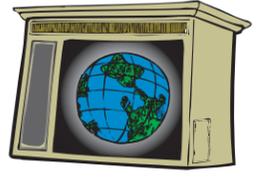
Pick a card

Some people like to make their own clothes. Is it a good idea?



Pick a card

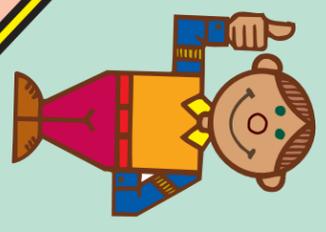
How many televisions do you have in your house?



You took some old furniture to the dump – go back three spaces



**The End**



Pick a card



Talk about what kind of car you would like to buy

Pick a card





**CYCLING**

**Pros**



**WALKING**

**Pros**



**DRIVING**

**Pros**



**PUBLIC  
TRANSIT**

**Pros**

**Cons**

**Cons**

**Cons**

**Cons**