



## Kyoto

### > Section A) Climate Change

1. In the Energy Activity, we discussed the differences between sustainable and non-sustainable forms of energy. We know that burning fossil fuels like \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ for energy is not sustainable. And when we burn fossil fuels to generate energy, it releases pollution in the form of a gas called carbon dioxide (CO<sub>2</sub>) into the air.

As we burn more fossil fuels by heating our homes, running factories, lighting up our cities and driving cars, carbon dioxide builds up in the air around us, polluting the atmosphere.

The earth's atmosphere is the air that surrounds us. When carbon dioxide builds up in the atmosphere, it pollutes the air. This not only makes it harder for us to breathe, it also traps heat from the sun, making the planet hotter. We call this the greenhouse effect because it works like a glass greenhouse for plants that traps heat from the sun.

You might think a little more warmth might be nice in a cold country like Canada. But the truth is, the earth's temperature is part of a delicate balance that protects our ecosystems. Changing the earth's temperature by even two degrees can change weather systems all over the world, causing tropical storms, floods, droughts, and even forest fires.

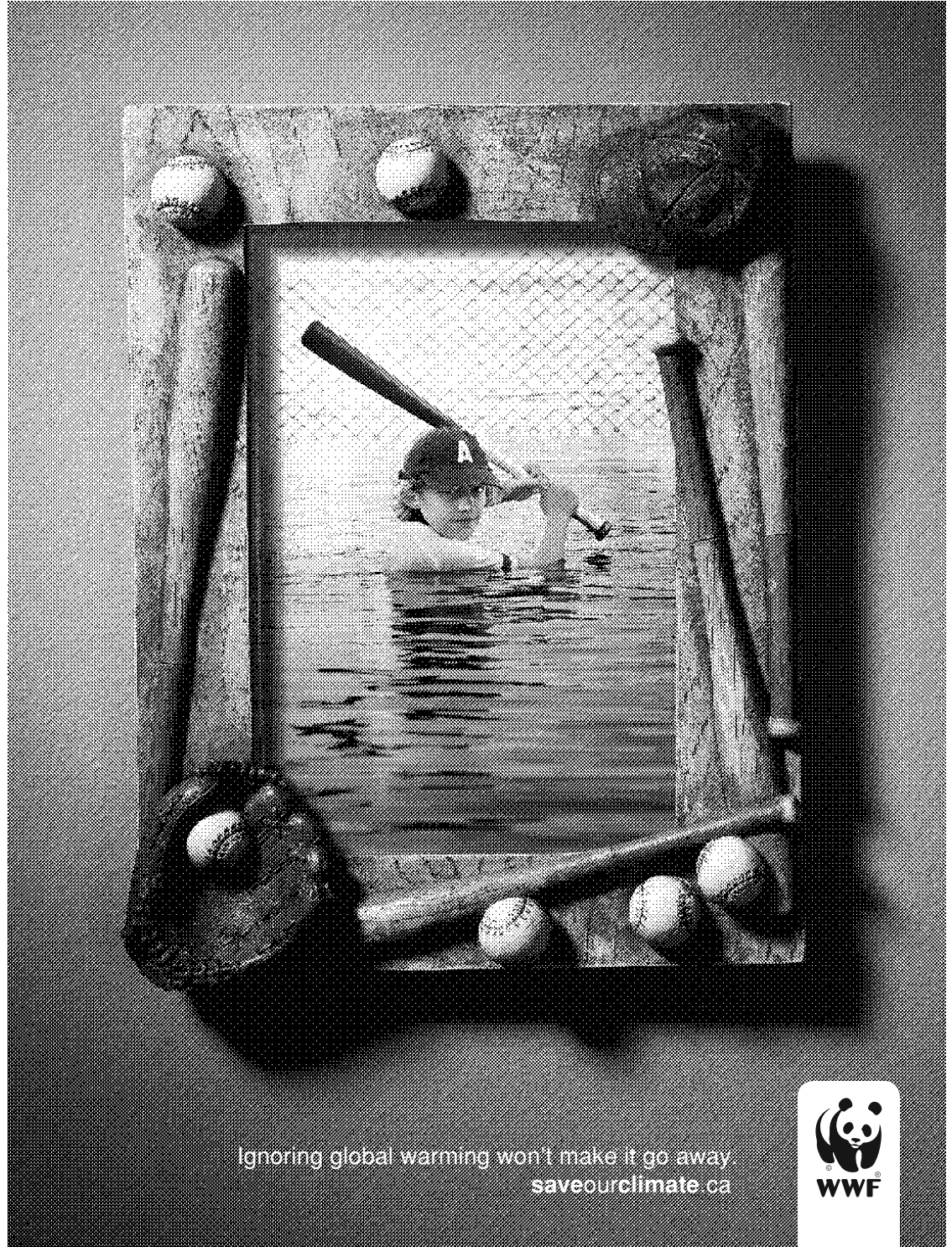


Name: \_\_\_\_\_

## 2. Spreading the Word

WWF-Canada is  
working to spread  
the word about  
climate change.

Take a look at  
their ad, and create  
your own climate  
awareness ad.



**Canon**

[www.saveourclimate.ca](http://www.saveourclimate.ca)



Name: \_\_\_\_\_

Create your own climate awareness ad.





Name: \_\_\_\_\_

> **Section B) Kyoto Accord**

To help our planet, over 160 countries in the world have signed an agreement called the Kyoto Accord. This agreement is a promise between nations to reduce greenhouse gases by five percent by the year 2012. Like all promises, we must work very hard to keep it.

The United States and Canada must make the biggest changes if we're going to meet the goals set by the Kyoto Accord. Together, North Americans are among the highest polluters per person in the world, creating over 25 percent of all greenhouse gases.

We still have a lot to learn about using more sustainable forms of energy, and it will take some effort to change our habits. In Canada, we're used to leaving our lights on, taking long showers, driving to the corner store to get milk, and running our heaters and air conditioners on high to keep us comfortable. To fulfill our promise to the Kyoto accord, we will have to stop burning so much fossil fuel, by making changes to our lifestyle.





Name: \_\_\_\_\_

### 1. The Classroom Accord

Your classroom is a community. It is a smaller version of our world. It is a world with different people and a world of different needs. Can you have an accord with your classroom on becoming an environmental example for all the other classrooms?

i) Write down a list of all three things you can do in your home, classroom or community to help our environment. Ideas could include things like classroom composting, turning off the lights when not in a room, or taking shorter showers.

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ii) One by one, write down your ideas on the blackboard.

iii) Count each time an idea comes up on the blackboard.

iv) Now it is time to vote! On a clean part of the blackboard, write down the five most listed ideas. Have someone read out the idea and ask if everyone agrees to try and follow that idea for one month. If you raise your hand, you vote “yes”. Count the hands to see how many agree. If more than half the class votes “yes”, then you can add that idea to your Classroom Accord.

v) Once you have voted on the five ideas, write down the “yes” ideas on a piece of paper. Each student who wants to try to follow those ideas has to sign the Classroom Accord. Remember, once you sign, you are promising to try to be a leader in sustainability.

Follow up with your classroom a month later. Did everyone follow the Classroom Accord? Why or why not?





Name: \_\_\_\_\_

> **Section C) Who's In Charge?**

Those who are responsible for making sure that Canada meets its targets for Kyoto:

**Across Canada**

The Minister of the Environment

The Federal Minister of the Environment oversees Canada's Department of the Environment. As part of the federal cabinet, this minister works with the Prime Minister to preserve Canada's natural environment, including water, air and soil quality. The Minister is also responsible for conserving Canada's renewable resources.

The Federal Minister of the Environment represents Canada at all meetings with other Countries to discuss Kyoto. The Federal Minister is also responsible for creating laws and acts that will determine how Canada will reduce greenhouse gases.

**In Each Province and Territory**

The Provincial and Territorial Minister of the Environment

Each province and territory also has its own Minister of the Environment.

Together with the Premier, it's the Provincial and Territorial Minister's job to create and legislate provincial and territorial laws that meet the Federal Government's goals to reduce greenhouse emissions.





Name: \_\_\_\_\_

**In Each Community**

The Mayor or Chief

Your mayor is responsible for making and upholding the laws in your community. The mayor or chief must work with the Provincial or Territorial Minister of the Environment to make sure that each community is working towards reducing greenhouse emissions.

**You**

What are three ways that you can help make sure that we meet our targets for the Kyoto accord?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_





Name: \_\_\_\_\_

**> Section D) Timeline of Change**

How has our climate changed, and how will it change in the future? If we follow Kyoto and if we do not? Use the chart to answer the questions on the next page.

**CO<sub>2</sub> Increase**

65%				
60%			<b>CO<sub>2</sub> Increase: 60%</b>	
55%			Temperature Increase: 1.4-5.8°C	
50%			Results	
45%			- a 2° increase would be devastating	
40%			- little or no ice left in Artic	
35%			- droughts	
30%		<b>CO<sub>2</sub> Increase: 30%</b>	- unreliable water supplies	
25%		Temperature Increase: 0.8°C	- many species would go extinct	
20%		Results:	- many trees, like the Canadian maple, could not adapt and would die	
15%		- shrinking ice caps		<b>CO<sub>2</sub> Increase: 15%</b>
10%		- tropical storms		- reached by using cleaner, more efficient energy sources
5%		- floods & droughts		
		- shrinking forests		
		- dwindling species of birds, animals and fish		
<b>Year</b>	<b>1750</b> We start burning fossil fuels	<b>Now</b>	<b>2100</b> (If we don't make changes)	<b>Target for 2050</b>





Name: \_\_\_\_\_

Fill in the blanks:

1. The Kyoto Accord aims to reduce current greenhouse gases by \_\_\_\_\_ percent by the year 2012.
2. If we don't meet the Kyoto Accord targets by the end of the century, CO<sub>2</sub> emissions will have increased by \_\_\_\_\_ percent since the industrial revolution.
3. If we don't meet the Kyoto Accord targets by the end of the century, CO<sub>2</sub> emissions will rise to \_\_\_\_\_ percent.
4. The earth is currently \_\_\_\_\_° Celsius warmer than it was at the time of the industrial revolution.
5. If the earth's temperature increases by more than \_\_\_\_\_° Celsius, our lifestyles would change drastically, and many species would be wiped out.

**Canon**



**> Section E) Sustainability**

Nine out of ten Canadians currently rate the environment as one of our top concerns. And yet, in a study that rated developed countries on their air, water, energy, waste and many other environmental factors, Canada scored 28th out of 29! The only developed country that's more wasteful than us is the United States of America.

To improve our grade, we need to work on developing sustainability. To review, sustainability means to use a resource (the earth) so that it's not depleted or permanently damaged.

Listed below are some ways we can develop environmental sustainability. Based on what you've learned so far, offer three ideas on how we could improve in each category:

1. Improve Energy Efficiency

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

2. Use Cleaner Energy

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

3. Reduce Waste and Pollution

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

4. Protecting, Conserving and Restoring Our Land and Water

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

5. Producing Healthy Food

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_





> **Section F) Simulation City**

What does your community look like? Can you make it better?  
Can you use what you learned to create a sustainable community?

In groups, use anything you can find to build a model of your community. Make sure to include your changes to the community to help your community become sustainable. You can add wind turbines, gardens, parks, recycling plants, anything that you think will make your community better.





# Answers: Kyoto

## Section A) Cleaning Up Our Air: Kyoto Accord

1. In the Energy Activity, we discussed the differences between sustainable and non-sustainable forms of energy. We know that burning fossil fuels like **oil**, **gas**, and **coal** for energy is not sustainable. And when we burn fossil fuels to generate energy, it releases pollution in the form of a gas called carbon dioxide (CO<sub>2</sub>) into the air.
2. Class Activity

## Section B) Kyoto Accord

1. Classroom Activity

## Section C) Who's In Charge?

What are three ways that you can help make sure that we meet our targets for the Kyoto accord?

Open – should touch on ideas such as turning down your heat/air conditioning, riding your bike, walking, roller blading or skateboarding instead of driving. Making sure you turn out lights in your house when you're not using them, don't run water when you're brushing your teeth, recycle, eat local produce, etc.

## Section D) Timeline of Change

Fill in the blanks:

1. The Kyoto Accord aims to reduce greenhouse gasses by five percent by the year 2012.
2. Without meeting the Kyoto Accord targets by the end of the century, CO<sub>2</sub> emissions will have increased by 60 percent since the industrial revolution.
3. Without meeting the Kyoto Accord targets by the end of the century, CO<sub>2</sub> emissions will have increased by 30 percent from today's current levels.
4. The earth is currently 0.8° Celsius warmer than it was at the time of the industrial revolution.
5. If the earth's temperature increases by more than 2° Celsius, our lifestyles would change drastically, and many species would be wiped out.



## Answers: Kyoto (continued)

### Section E) Sustainability

#### 1. Improve Energy Efficiency

Open – should touch on not wasting energy by leaving lights on at home and in buildings at night, using energy efficient appliances. Not wasting water by taking long showers, or running the taps, fixing dripping faucets. Not overheating/over air-conditioning our homes and buildings, etc.

#### 2. Use Cleaner Energy

Open – should talk about developing cars that don't burn as much fossil fuels, using cleaner forms of energy to heat our houses, closing coal plants, using resources like wind, water, sun and biomass.

#### 3. Reduce Waste and Pollution

Open – should touch on producing less garbage by reusing, renewing, recycling. Using less plastics and excess packaging. Investing in more biodegradable materials. Burning less for fuel to create pollution etc.

#### 4. Protecting, Conserving and Restoring Our Land and Water

Open – should touch on previous lessons. Conserving important ecological areas like the wetlands, understanding how ecosystems work and protecting a variety of species. Creating laws that protect endangered areas and species. Creating laws that ensure that developers don't strip/pollute the land, and give back to the areas and communities they take from, etc.

#### 5. Producing Healthy Food

Open – should touch on using less pesticides, eating local produce and supporting local farmers. Could touch on ideas about over-consumption, junk food, over-eating, avoiding fast food chains, etc.

### Section F) Simulation City

Classroom Activity

