

## ***Weathering the Changes: Climate Change in Ontario***

### ***The Causes of Climate Change***

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

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

Group Members: \_\_\_\_\_

#### **Did You Know?**

1. How much carbon dioxide is produced by every litre of gasoline used in your car?  
**2.5 kg**
2. “Jackrabbit” starts use 50% more of what product than if you accelerate gradually?  
**Fuel**
3. Where does one-third of the carbon dioxide emissions created by human activities come from?  
**Transportation**

#### **The Climate System – A Balancing Act**

4. Which greenhouse gas is made by landfills and wetlands?  
**CH<sub>4</sub> - methane**

<b><u>Connections</u></b>	<b><u>Reflections</u></b>	<b><u>Questions</u></b>
<i>What connections can you make among what you've learned, your lifestyle, your family, school, community, or other regions?</i>	<i>Reflect on your learning, understandings, and discoveries. "Write about one thing you did not know before starting this activity"</i>	<i>What questions do you still have, or what new questions have been raised?</i>

## ***Weathering the Changes: Climate Change in Ontario***

### ***The Consequences of Climate Change***

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

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

Group Members: \_\_\_\_\_

#### **Did You Know?**

1. Why may the cold-water fish species such as lake trout disappear from southern Ontario?

***Habitat changes***

#### **Future Climate**

2. What is predicted to happen along with climate change warming in Ontario?

***Increase in the frequency and severity of extreme weather events***

3. By looking at the global map, what regions would you conclude might have the most significant changes?

***Poles***

#### **Where We Live**

4. How are storms such as thunderstorms expected to change?

***Become more severe***

5. How would shorter winters affect people?

***Lower maintenance and snow removal, shorter winter and longer summer recreation season, more freezing rain affects energy, road and airline safety***

6. What changes do experts predict with climate change?

***Fewer extremely cold days, and more extremely hot days, more severe thunderstorms, more frequent freezing rain events***

7. How many households in Ontario and Quebec lost power in the January 1988 ice storm?

***~1 million (100 000 in Ontario, 900 000 in Quebec)***

#### **Our Health**

8. What climate factors can affect our health?

***Temperature, humidity, pressure***

9. Compared to today, how many hot days over 35° C may southern Ontario experience by the middle of the next century?

**46**

10. How will warmer daytime temperatures affect smog?

**Increase it**

11. What causes the “urban heat island effect”?

**Natural vegetation is replaced by surfaces that absorb heat, it makes cities several degrees warmer than nearby rural areas**

### **Our Water**

12. What concerns are there when water supplies are warmer?

**Water quality – microbes and algal blooms**

13. How will lower water levels affect shipping?

**Increase costs**

14. How may the Great Lakes be affected by climate change?

**Lower water levels (more than 1 metre), smaller and earlier spring run off**

### **Our Farms**

15. What are the positive and negative consequences of climate warming for farmers in Ontario?

#### **Positive**

- longer growing season
- increased yield of certain crops
- the potential for growing specialty fruits and vegetables

#### **Negative**

- more irrigation required
- winter crop damage

### **Our Forests**

16. What may be some of the effects on forests and forestry with the changes in climate?

**More forest fire damage, increased drought stresses forest, new pest infestations, reduced soil moisture, lower seedling survival**

<u><b>Connections</b></u>	<u><b>Reflections</b></u>	<u><b>Questions</b></u>
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## ***Weathering the Changes: Climate Change in Ontario***

### ***Action on Climate Change***

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

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

Group Members: \_\_\_\_\_

#### **Did You Know?**

1. How can you change the frequently used regular light bulbs in your home to save 225 kg of CO<sub>2</sub> per year?  
***Use energy efficient compact fluorescent bulbs instead***
2. What should you do with your laundry to save up to 225 kg of CO<sub>2</sub> per year?  
***Use cold water to wash and rinse your clothes***
3. What are the benefits of no-till farming?  
***Reduce fuel and labour requirements, soil erosion, increase productivity***

#### **Where Do We Go From Here?**

4. What protocol did 160 nations originally negotiate to reduce global greenhouse gases?  
***Kyoto Protocol***
5. What does this protocol do?  
***Sets targets for reducing greenhouse gas emissions***
6. What is a “walking school bus”?  
***A program for parents walking kids to school***
7. What can help reduce greenhouse gas emissions from heating and cooling by shading buildings?  
***Green roof and vertical garden technologies***

<b><u>What I am already doing...</u></b>	<b><u>What I can begin to do...</u></b>