

Degrees of Variation: Climate Change in Nunavut

The Causes of Climate Change

Name: _____

Date: _____

Group Members: _____

Climate Change- The Basics

1. What human factors contribute to climate change?

Enhanced greenhouse effect and atmospheric aerosols, land use change

2. What greenhouse gas is most closely connected to human activities?

CO₂

Did you know?

3. What human activity is a major source of greenhouse gas emissions?

Burning garbage

4. How much CO₂ is produced for every litre of gas used in your vehicle?

2.5 kg

The Challenge

5. What activity is responsible for 53% of the residential emissions of CO₂?

Transportation

6. How does Canada rank globally for CO₂ emissions?

Second

<u>Connections</u>	<u>Reflections</u>	<u>Questions</u>
<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>

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The Consequences of Climate Change

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Did you know?

1. Where do climate models predict the greatest warming will occur?
Arctic regions
2. If the Greenland Ice Sheet melts, by how much will the global sea level rise?
6-7 metres

The Current Conditions

3. By looking at the graph, Frequency of Intense Winter Storms, what can you conclude about these storms in the northern hemisphere?
Increasing

Of Ice and Men

4. What traditional northern activities depend on sea ice?
Travel, hunting, fishing

Life at Sea

5. What do scientists predict will happen to the range of many marine species as climate changes?
Northward shift
6. What animals need strong sea ice to breed, nurse pups and rest?
Walrus and bearded seals
7. How will Inuit hunters be affected as animals change their range in response to climate change?
Forced to change their hunting regimes
8. According to the News North, when it gets too warm, what do the animals do?
Go to cooler areas

Glaciers and Sea-Level Rise

9. What are the impacts of sea level rise?
More extreme weather, more erosion, more flooding

Northern Landscapes

10. What is found beneath the ground surface in nearly all of Nunavut?

Permafrost

11. How will people be affected if the permafrost thaws?

Infrastructure suffers greatly: roads, runways, sewage, water supply, underground mines collapse, etc. Open pit mining benefits

12. How will the food supply of herbivores be affected by climate change?

Improved with increased plant growth

13. How will birds be affected by warming of the Nunavut region?

Positive impacts on northern birds, negative on south

Life on the Land

14. What aspects of the north will be affected by the climate warming?

Vegetation, wildlife, birds and waterfowl, people

The Challenge

15. How might human health be affected by climate change?

Food and water quality, infectious diseases

<u>Connections</u>	<u>Reflections</u>	<u>Questions</u>
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Action on Climate Change

Name: _____

Date: _____

Group Members: _____

The Challenge

1. What do thermosyphons do?
Remove heat from the ground into the air, prevents melting of permafrost by cooling the ground and keeping it frozen
2. What does a photovoltaic array do?
Changes sunlight directly into electricity
3. What are five things you can do to help?
Reduce fuel consumption, wash laundry in cold water, buy energy efficient compact fluorescent lightbulbs, caulk and weatherstrip around doors and windows, talk to municipal councils about recycling programs

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