

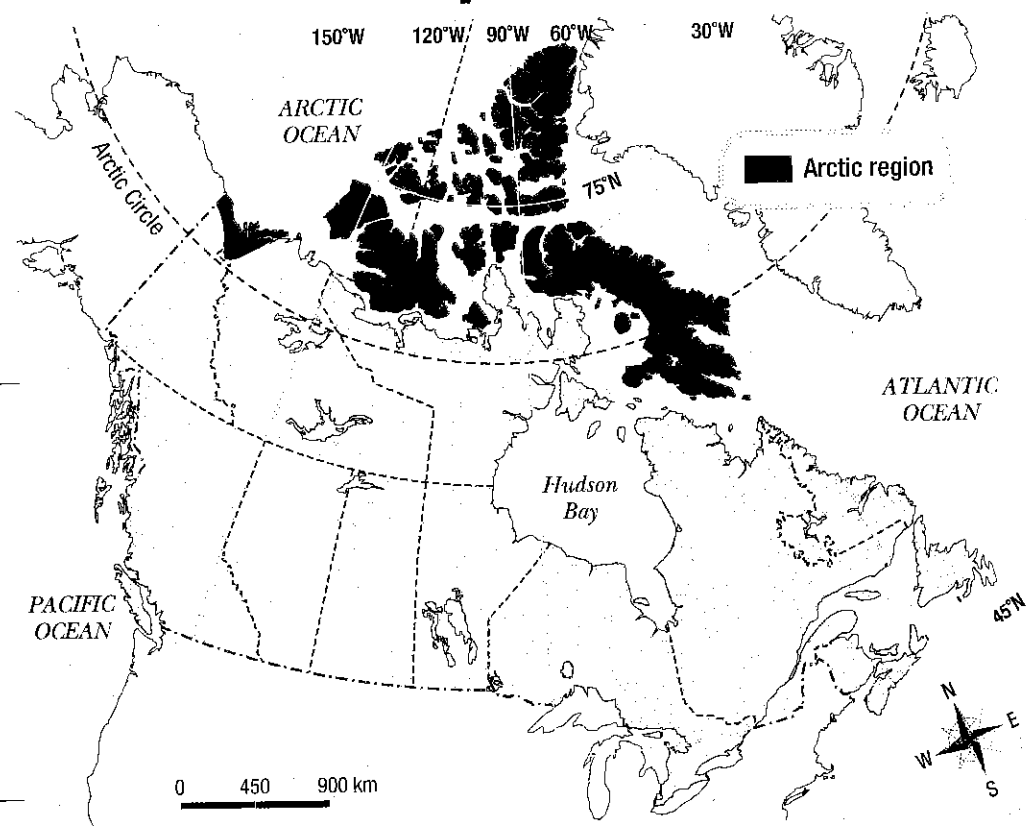
Predict

What would it be like to live in a land where there are no trees and where the ground is frozen most of the year?

Based on this map, between which two lines of longitude is most of the Arctic region located? Parts of which territories are in this region?



The Arctic Region—Living Near the Top of the World



The Arctic is the most northerly region of Canada. Its location—near the top of the world—influences every aspect of life. The Arctic Ocean, along which most of the communities are located, also influences ways of life.

Different people live in the Arctic region, but most are Inuit (ee-nu-eet). There are different groups of Inuit such as Inuinnags (ee-noo-ing-naks) of Victoria Island and Iglulingmiut (ig-loo-ling-miut) of Baffin Island.

Chapter Focus

- What is unique about the Arctic region?
- How are Inuit ways of life traditional and modern?
- How does climate shape Arctic ways of life?
- What are some effects of climate change?
- What are the challenges of developing natural resources in the Arctic region?

What Is Unique about the Arctic Region?

Most of the Arctic region is made up of the northern islands of Nunavut (noo-na-voot). These islands have mountains, plains, glaciers, and sea ice, which is ice covering the channels between islands. There are many different types of plants and animals. The Arctic region has animals that cannot be found elsewhere in Canada, such as muskox and arctic fox.

The Land



The far north of the Arctic region is covered with sea ice. This ice never really melts except for a narrow strip along the shore. This makes the landscape look like it is one large piece of land rather than many separate islands. What challenges does sea ice pose?



The northern part of the Arctic region consists of rocky mountains and plains of loose rocks and gravel. These areas are **barren**, which means little or no vegetation grows there. How are these barren plains different from fertile plains?



The Arctic **tundra** in the southern part of the region is treeless and covered by snow much of the year. Most of the ground there is **permafrost**. This means that a thin layer of soil thaws in the summer, but below it the ground remains frozen. Roots of tundra plants do not grow very deep. In summer, the land is covered with vegetation and **lichens**—a type of fungus. Caribou herds depend on the lichens for food. Would this landscape be suitable for farming? Why?

11 PAUSE

1. In what ways is the land in the Arctic different from the land where you live?
2. Why do people describe this region as “near the top of the world”?
3. Knowing what you know about the landforms of the Arctic region, what do you think would be the traditional life of Inuit? Why?

CONNECT

What are some ways that you get around where you live?

The Arctic Ocean

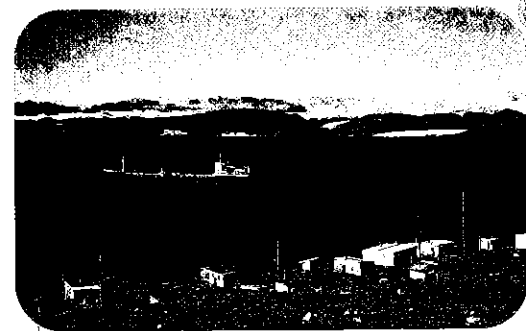
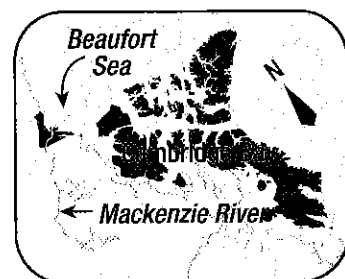
Most of the Arctic communities are located near the coast of the Arctic Ocean where ice melts in the summer. Water is one of the best ways to travel from community to community at that time of the year.

Kids Speak



Peter

Cambridge Bay
(Iqaluktuuttiaq) (a-ka-luk-
toot-chiak), Nunavut



Barges bring everything from flour, school desks and chairs to snowmobiles and trucks. Goods going to eastern Arctic usually start from Montréal, while goods going to central Arctic start from Churchill or Montréal.

Barges connect us to the mainland. They travel north on the Mackenzie River from Hay River. Once they reach the Beaufort Sea, they sail east to our community. But since sea ice covers this region much of the time, they can only travel here for about three months of the year. Three times each summer, a barge arrives in our community with food and supplies. It's an exciting time for us. My friends and I like to watch it sail in and unload. We try to guess how many boxes will be unloaded and what's in each box.

We also use boats with motors to get around. Before there were motor boats, my ancestors used one-person boats, called *qajaik* (ka-yaik), to hunt on the sea. These were made from animal bone covered with sealskin. They floated well, and moved quickly and silently through the water. The Europeans copied the design of the boats, calling them kayaks. Have you ever been in a kayak? One of the first things Dad taught me when I learned to kayak was to roll over into the water and get myself out of the kayak. It was an important safety lesson.

Umiak (oo-me-ack) is a larger, open boat that carries more people and loads than a kayak. It was made out of hides and bones and was used to carry people, goods, and dogs. Today, few people in Canada's Arctic region use umiak.



Although kayaks are rarely used today for hunting, people still enjoy paddling them for leisure. I took this photograph of my dad teaching my sister to kayak.

Food from the Land and Ocean

Even though most food is bought from stores, people also hunt for part of their food. Sometimes there are issues about this hunting. Below is a newspaper article based on a real event that took place in Pangnirtung (pang-nir-tung). As you read the story, think about each view about whale hunting. What is each side saying?

Reflections

July 31, 1998

Celebrating the Return of a Way of Life



For days after the whale hunt, Pangnirtung was busy with visitors who had come to celebrate the hunt. The celebration has now ended and the townspeople are looking forward to future hunts.

PANGNIRTUNG—A group of hunters caught a bowhead whale on July 21. The hunters spotted the whale not far from shore. Four hours later, the hunters hauled back the large mammal. Loud cheers from community members greeted them as they neared the shore. Many of the onlookers sprung into action to help pull the large whale on to shore.

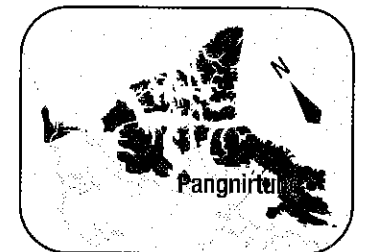
Pangnirtung celebrated this hunt for days, sharing the meat and *maktaq* (fat) with communities around Nunavut.

Whale hunting is a part of Inuit way of life. For many years, however, it had been banned. Some people were concerned that

bowhead whales were being over-hunted and would become extinct.

Inuit leaders disagree. They point to a study that showed that there are more bowhead whales in the eastern Arctic than once thought. They said that whaling is important to Inuit and that hunting a small number of whales would not hurt the species.

In 1993, Inuit leaders made an agreement with the Canadian government that Inuit would be able to hunt one whale every two years. This agreement gives protection to the bowhead whales, while also recognizing and honouring the importance of Inuit rights and traditions.



1) PAUSE

1. How do Inuit use the land and its resources for transportation?

1) PAUSE

1. How do you think people's quality of life might have been affected when whale hunting was banned?

How Are Inuit Ways of Life Traditional and Modern?

Life in the Arctic is a mix of traditional and modern ways. Hunting is part of Inuit's traditional ways. Animals, such as seals, are hunted for food and clothing. The story below is a family story of a young boy, Ronnie. It tells about a traditional way to hunt seal.



Seal meat is the main food in almost every Inuit community. Inuit Elders call seal a "special food." Its meat and organs are nutritious and keep the body warm. Its skin is used for clothing and its fat to make oil for lamps.

Kids Speak

There's a story that my Mom tells that I will always remember. It reminds me how good my ancestors were at living in the Arctic region. This is how my grandfather and his father, my great-grandfather, hunted seals. They used dogs to sniff out breathing holes where seals would come up through the ice for air. When a breathing hole was found, great-grandfather would attach a feather to a thin piece of sinew and place it across the breathing hole. He would stand on a small sealskin mat with his harpoon raised staring at the feather. Sometimes he would stand there for hours. When a seal was about to surface, the feather would move. Great-grandfather would plunge his harpoon into the hole, even though he could not see the seal. This method of hunting took great skill and patience.

Now when my father and grandfather hunt seals, they use rifles, which is much easier.

Adapted from a story on Canada's SchoolNet web site, Industry Canada.

Voices

Writer and storyteller Michael Kusugak (koo-soo-gak) describes what it was like growing up in the Arctic region:



When I was a kid...I lived the traditional life of Inuit... We travelled around and we hunted seals, walrus, whales, and polar bears out on the sea ice in the winter.... If we were travelling, my father would build an iglu (ig-loo)...and we usually travelled within a family group. So my grandparents, my aunts, and uncles usually travelled with us. Every night when I went to bed...I had lots of storytellers, and that was one of the things that we really looked forward to, was to lie down and have a story told to you.

Excerpts from "A True Storyteller," an audio recording, Canada's Digital Collections web site.

Pause

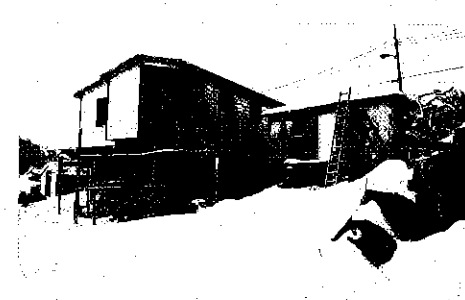
1. How do you think stories give Ronnie and Michael Kusugak a sense of belonging and identity to their communities? How do you think they add to their quality of life?

The land shapes how people live, how they travel, and the houses they build. How do these photographs show both present ways and traditional ways of life in the Arctic region?

Shelters and Homes



An iglu is a shelter made out of blocks of snow. Hunters still build these when they are out hunting.



Houses are built on posts to stop the warmth of the houses from melting the permafrost, so the building does not sink.

Finding the Way



The inuksuk (ee-nook-shook) is a stone marker that helps travellers find their way or know where to hunt.



Some hunters use GPS (Global Positioning System), satellite phones, and special radios (called Citizens' Band radios) to help them find their way and stay safe.

Transportation



Qimuksiq (qi-muk-siq) was once the main way to travel on the ice. It is still sometimes used.



Snowmobiles and ATVs (All Terrain Vehicles) are the main way to get around on the ice and land.

Pause

1. How do you think present-day technologies are changing ways of life in the Arctic region?
2. The inuksuk is an important Inuit symbol. It appears on Nunavut's flag and is the logo of the 2010 Winter Olympic Games in Vancouver, British Columbia. Why do you think the inuksuk is an important symbol?

CONNECT

What are your favourite games? Share them with the class. In what ways are games important to your quality of life?

Teaching through Traditional Games

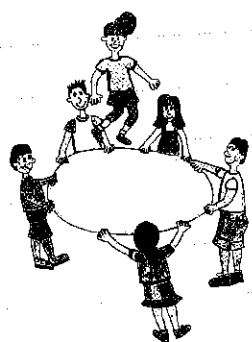
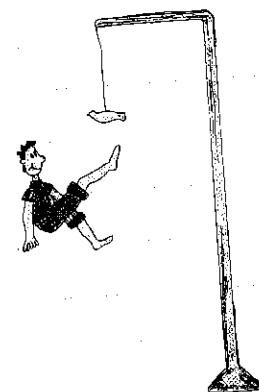
Many of the games children play show the connection of people to the land and the importance of hunting as a way of life. Many Arctic communities come together to celebrate the importance of these games. How do the games below show people's connection to the land?

Let the Games Begin!



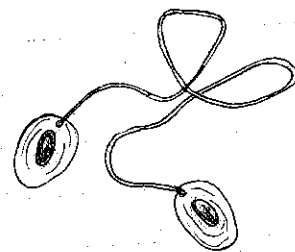
We are students from Iglulik (ig-loo-lik). In class, we worked together to create a display of our favourite traditional Inuit games. Many of them are related to hunting. Many Arctic communities come together to celebrate the importance of these games.

Some games test a person's strength, endurance, or the ability to move quickly. High Kick is one of these games.



The Blanket Toss is another game. A group of people holds a large seal- or walrus-skin blanket and tosses a person up high from it. A hunter would be tossed up this way to help him see across the flat sea ice.

In another game, players use an instrument called a bola. Traditionally, it was a hunting weapon made from animal sinew and bones. A hunter would spin the bola above his head and throw it at an animal's legs to entangle the legs. This stopped the animal from running.



Pause

1. How are the games important to Inuit's identity?

How Does Climate Shape Arctic Ways of Life?

Winters are long and cold throughout the Arctic region. Winter temperatures are influenced by cold air masses from the Arctic Ocean. In the summer, warm air masses blow up from the Interior Plains or the Pacific Ocean and temperatures can be warm. However, the summer season is very short and the temperatures can dip at any time. It is not uncommon to get snow in July and August. The farther north a place is, the cooler it tends to be throughout the year.

While it is cold in the Arctic region, there is little snow in some areas. Much of the Arctic region is actually considered a frozen desert because it gets very little precipitation. However, the Arctic is a large region and the amount of precipitation varies depending on location. For example, precipitation averages between less than 60 millimetres a year in Eureka to more than 400 millimetres a year in Iqaluit (ee-ka-lu-eet). The mountain landscapes receive more precipitation than other areas. However, in the valleys there is little precipitation during the summer months. These areas can have very dry, or drought, conditions.



Communities gather at festivals to celebrate the coming of spring after a long winter. Toonik Tyme (too-nick time), the largest spring festival, is held in Iqaluit. Cambridge Bay welcomes the spring with Umingmak (oo-ming-mak) Frolics. Why are community celebrations important?



Kids play street hockey on snow-covered roads in Iglulik. Do all regions in Canada have enough snow to play street hockey throughout the winter? Why?

SKILLS at Work

Make a Venn diagram to show how the climate of the Arctic region is similar to and different from the region where you live.



Pause

1. How do you think the climate of this region affects people's lives? What clues can you get from the photographs on this page?

Adapting to the Arctic Climate

The climate and landscape of the Arctic region are not suitable for farming. This means that fruits and vegetables have to be brought in from other parts of the country. Because the Arctic region is far away from the rest of Canada, transporting goods by barges and airplanes is very costly. This makes the food sold at stores very expensive. The community of Inuvik (ee-noo-vik), Northwest Territories, however, has found a way to obtain fresh vegetables and fruits that are less expensive.

People and Places



A volunteer at the greenhouse examines a plant. In what ways do you think the greenhouse is important to the people of Inuvik's quality of life?

The Story of Inuvik's Greenhouse

The town of Inuvik, Northwest Territories, has the most northerly greenhouse in Canada. This greenhouse is located in what was once a hockey arena, and was started in 1998 by the Community Garden Society of Inuvik. There are also 74 garden plots in the arena. In the bottom of these plots is a layer of **insulation**, or materials that trap heat and keep out permafrost. Some of the plots are rented to residents for a small yearly fee. Others are for use by

Elders, group homes, and other local charity and youth groups.

The greenhouse provides the people of Inuvik with a variety of fresh vegetables and plants in an area where fresh and affordable produce is often unavailable. The community can plant as early as the first weekend of May and grow plants until the beginning of September. Although this growing season is shorter than in southern Canada, there are many hours of daylight in the spring and summer months that allow plants to grow. At a certain time of year, there are even 24 hours of sunlight a day.

The greenhouse is important to community development. It has involved many people: new and experienced gardeners, the old and the young. Volunteers support this project by running bingos, yard sales, and raffles, and selling bedding plants to raise money.

Adapted from "Fresh Produce North of 60" by Jenny Kendrick, Statistics Canada.

Pause

1. What do you think the story of Inuvik tells about living with and adapting to the land and climate?

Day and Night in the Arctic Region

Have you ever spent your days in the dark? In the Arctic region, some communities have 24 hours of darkness for a few months in winter and 24 hours of daylight for a few months in summer. What do you think it would be like to have 24 hours of darkness or sunshine? Using the chart, think of a typical day in your life, and list the ways it would affect your day to live in one of these communities.

Days of Sunlight and Darkness in Some Arctic Communities

Community	Latitude	24 Hours of Sunshine	24 Hours of Darkness
Resolute Bay (Qausuittuq) (qa-u-su-it-tuq)	74°N	107 days (April 29 to August 13)	92 days (November 6 to February 5)
Inuvik	68°N	56 days (late June to early August)	30 days (early December to early January)
Iqaluit	63°N	0 days (20 hours of daylight at most)	0 days (19.5 hours of darkness at most)



Reflections

Living with Sunshine and Darkness

Joy Sackett lives in Iqaluit. Fully covered in a thick coat, boots, and mitts, she is getting ready to go to school.

It's cold out—very cold. And it's dark. It will also be dark when Joy returns home. The sun comes up just above the horizon for a few hours a day during the winter. The cold and dark doesn't bother Joy. "I love the winter," she says. Whenever I go out to play with my friends, Mom makes sure that I'm all covered up in my warm boots and coat. But my nose sometimes peeks out. I've been frostbitten so many times on my nose. Sometimes it's too cold, so I stay in and play video games."

What does Joy like best about summer? "Fishing and hunting camps, midnight baseball! It's sometimes hard to sleep in but we have thick curtains and blinds on our windows to block out the light. Some people use tin foil."

Adapted from "My Name is Darcy," *Kids Post: The Washington Post*, March 16, 2006.

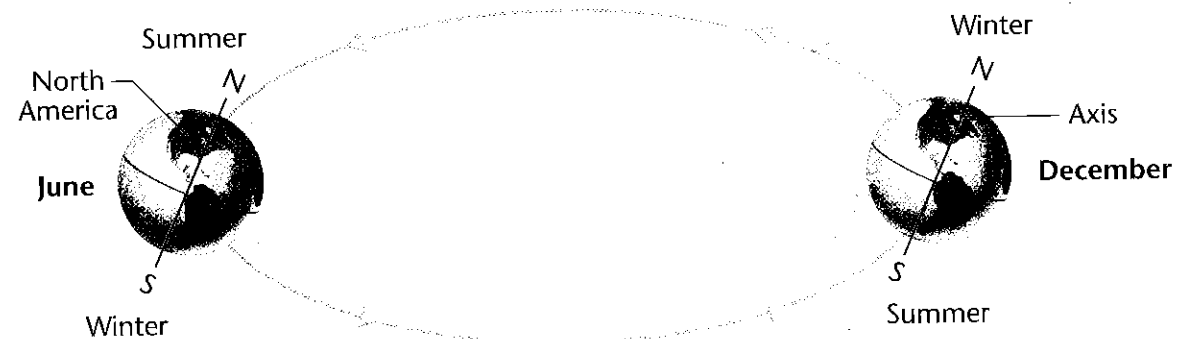


Joy enjoys winters even though it is very cold and dark where she lives. How do days of sunshine and darkness shape Joy's life? In what ways is her life different from or similar to yours?

Thinking Like a Geographer

What Causes Long Hours of Sunlight and Darkness?


The Earth moves around the sun once a year. It is tilted on its axis, an imaginary line that goes through the North and South Poles. (See the diagram.) The angle of this tilt never changes. This means that as the Earth moves around the sun, the North Pole tilts toward the sun in the summer. During these months, the sun never sets in some places in the Arctic region. In the winter, the North Pole tilts away from the sun. During these months, the sun never rises in these places.

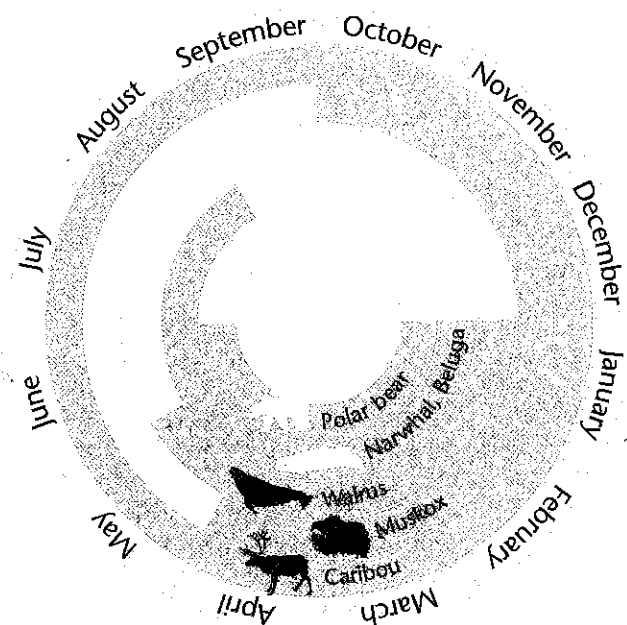


Now Be the Geographer

1. Locate Resolute Bay and Calgary on a map. Using the above diagram, which of these communities would have more hours of daylight in the summer? Which would have more hours of daylight in the winter? Why?



 months when the animals are hunted



The change of seasons affects what people hunt. This calendar shows present-day hunting cycles of Inuit of Lancaster Sound, Nunavut. Caribou is hunted year round. In which months are muskox hunted?

Adapted from "The Far North: Arctic and Taiga," *Canadian Geographic*. The Canadian Atlas Online.

What Are Some Effects of Climate Change?

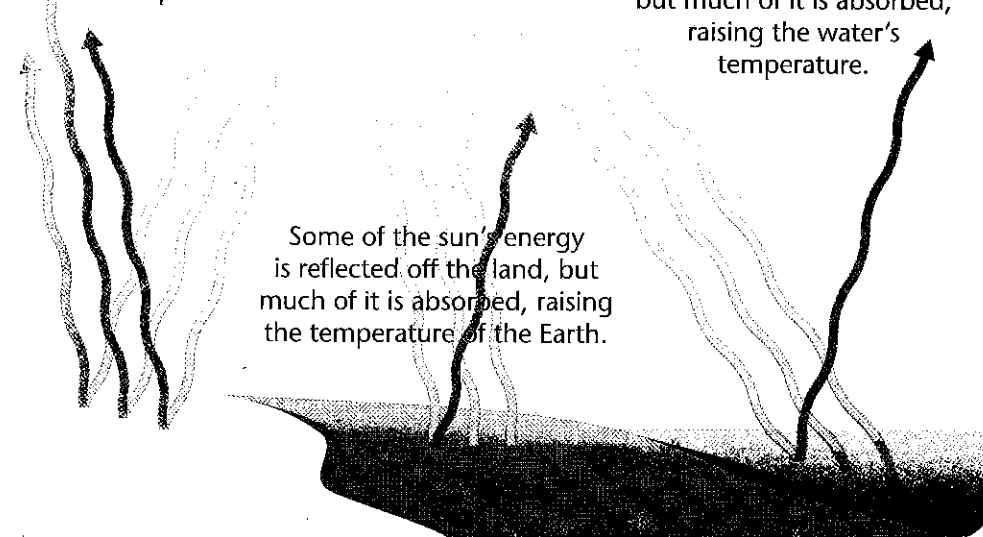
Activities in other parts of Canada and around the world are affecting the Arctic climate. Many scientists believe that global warming is caused by using gas and oil to make things in factories, to run automobiles, and to heat our homes. The pollution caused by burning gas and oil creates gases called **greenhouse gases**. The gases are like the windows in a greenhouse. They trap warm air close to the Earth. This causes average temperatures to rise around the world.

This matters especially in the Arctic region. Snow and ice are like mirrors. They reflect most of the sun's energy away from the Earth's surface. As temperatures rise, there is less snow and ice and more land and open water to absorb the sun's energy. As land and water become warmer, average temperatures could rise and winters may be shorter. (See the diagram below.)

What Causes Temperatures to Rise?

Most of the sun's energy is reflected off the snow and ice into the atmosphere.

Some of the sun's energy is reflected off the water, but much of it is absorbed, raising the water's temperature.



Some of the sun's energy is reflected off the land, but much of it is absorbed, raising the temperature of the Earth.

This diagram shows one of the reasons why global warming is causing temperatures to rise in the Arctic. What do you think happens to the ice cover as surrounding land and water temperatures rise?

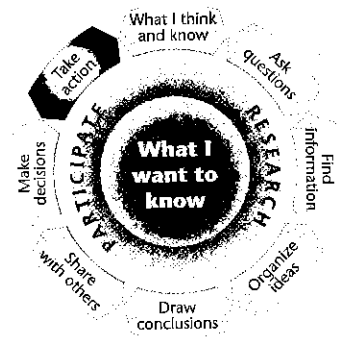
CONNECT

What do you know about climate change?

SKILLS at Work

How might climate change affect the Arctic landscape? How would the changes in the landscape affect plants, animals, and people? What chain of events might occur? Create a chain or web diagram to show your predictions.





How Would Climate Change Affect the Arctic Region?

There is evidence that global warming is changing the Arctic environment. What evidence of climate change is mentioned in the quotation below?

Voices

At an Elders' Conference on Climate Change, Inuk Elder Frank Analok said:

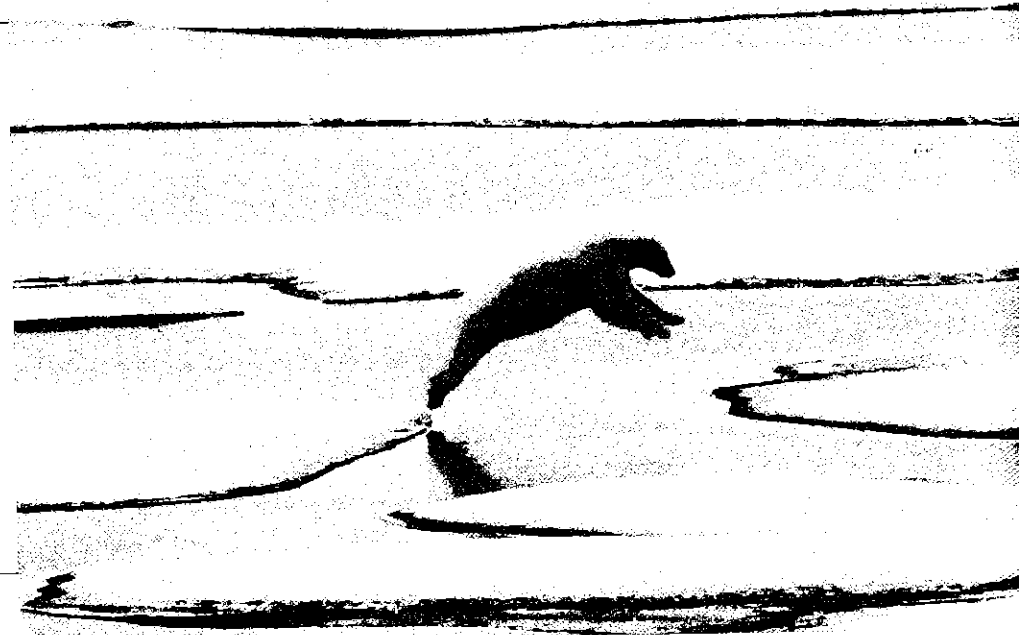
The land is now a stranger, it seems, based on our accumulated knowledge. The seasons have shifted, the ice is thinner and weaker, and the streams, creeks, and rivers have changed their characteristics.

The permafrost is melting, the land is rising, summers are way longer, freezing occurs later and later every year. I have noticed a big change in the environment over the last 20 years. It is now becoming a stranger to the old Inuinnags.

This is very different from what we recall. Caribou cannot cross the channel anymore until later on in the year, due to later ice freeze-up.

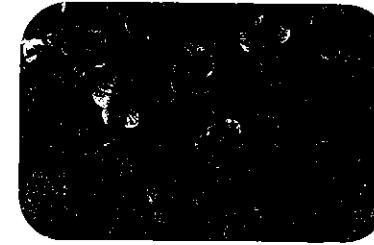
Elders' Conference on Climate Change, Cambridge Bay, 2001.

In some areas, global warming has shortened winter, causing ice to melt earlier than usual. Polar bears hunt on the ice during the winter. When the ice melts early, they are forced to move off the ice early. Without the ice to hunt on, they are unable to feed themselves and their babies. Thinning sea ice and early winters have caused the population of polar bears to decline in some areas.



Some Effects of Climate Change on the Arctic Region

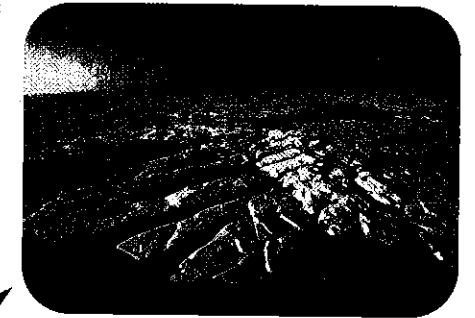
Scientists have made predictions about the effects of climate change on the Arctic. What predictions did you make on page 109? Add to your predictions as you read this page.



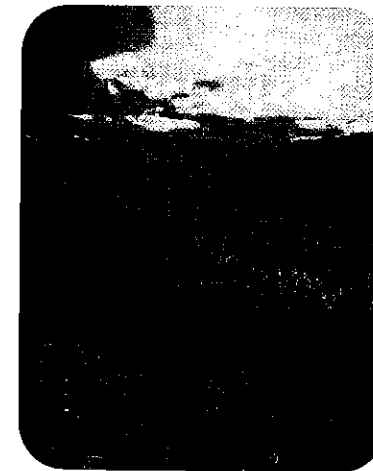
Plants will grow earlier in the spring and new plants that never grew in this region before will begin to grow. Some of these new plants may spread quickly

and take over plants that are natural to the region, such as lichens. The natural vegetation may have difficulty adapting and surviving. How might this affect the animals that depend on these plants for food? What chain of events do you think this could lead to?

Sea ice will melt, causing the sea level to rise. This will put coastal communities at risk of flooding. Hunting and ice fishing will also become more dangerous when the ice is thin. How might the quality and ways of life for people in this region change if they could no longer hunt for food?



How will climate change affect the Arctic environment?



Some wetlands may shrink or dry up. Wetlands provide food sources and homes to plants, animals, and birds. How might shrinking wetlands affect the living beings that depend on them?



Permafrost will thaw, turning the ground soft and mushy. What might happen to homes and buildings built on permafrost?



New species of animals may be able to live in the Arctic region. Species that are used to colder temperatures, such as these walrus, may find it more difficult to survive. What effects could this have on the Arctic region?

Inquire

1. How do you think climate change might affect Inuit quality and ways of life?
2. What else would you like to learn about the effects of climate change on the Arctic region? What are you curious about? Plan an inquiry and follow through with an action.



Drilling for oil under the ocean may be harmful to beluga whales. Noise and pollution from oil drilling could cause the whales to take a different migration path.

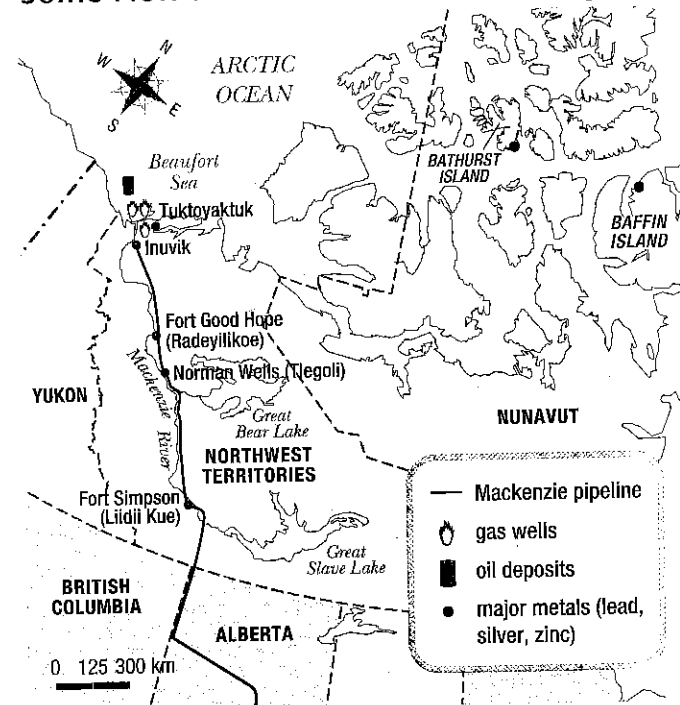
What Are the Challenges of Developing Natural Resources in the Arctic Region?

Natural resources are attracting many people and companies from southern Canada to the Arctic region. The Arctic region has deposits of minerals, such as silver, lead, zinc, and diamonds. There are also large deposits of oil and natural gas beneath the Beaufort Sea. Companies are exploring the Arctic region to find these resources. Some are also preparing to build a new gas pipeline from the Mackenzie Delta in the Arctic region to Alberta. This project is expected to bring many jobs to the region. It also brings with it more changes to the environment and ways of life. A challenge for the future of the Arctic region and its peoples will be balancing development with protecting the environment and ways of life.



Oil and gas drilling could affect the barren-ground caribou and other land mammals. Pipelines will be needed to carry the oil and gas to other parts of Canada. Constructing pipelines through wilderness could disturb or even destroy the caribou habitat.

Some New Resources of the Arctic Region



PAUSE

1. Why do you think it is important for all people who live in this area to be involved in the decision making about the uses and protection of resources?

← Looking Back

People in the Arctic region have to adapt to a cold northern land with no fertile soil. Day and night have a different meaning in the region depending on the seasons. What are the challenges they face? How do they face these challenges? What do they value about their ways of life?

On your own, with a partner, or in a small group:

- Review the Predict question at the start of this chapter: *What would it be like to live in a land where there are no trees and where the ground is frozen most of the year?* What predictions did you make? What new things did you learn that you could add to your predictions?
- Choose one of the following to tell about how ways and quality of life in this region are shaped by its unique geography:
 - * Design a tourist advertisement.
 - * Write a song.
 - * Create a web page for students.

Consider your purpose and audience. On what aspects of life would you focus?

Building the Travel Canada Tour



We have come to the end of our study of the geographic regions. Take time to add ideas about the Arctic region to the *Travel Canada* tour. What did you find most interesting about this region? What did you find unique? Which community do you think tourists would be especially interested in visiting? Why? Or are there communities that you would like to learn more about? Jot down notes of locations that you think you would include in the *Travel Canada* tour for this region.

→ Looking Forward

You have now learned about all the regions of Canada and their geography. However, Canada is more than a collection of regions. What other factors contribute to your identity as a Canadian?

In the chapters that follow, we will step back in time to look at why people from different countries came to live in this land of Canada. What did they find there that encouraged them to stay? How did geography influence where they built their communities?