Landforms and Resources

Main Ideas

- The United States and Canada have vast lands and abundant resources.
- These two countries share many of the same landforms.

Places & Terms

Appalachian Mountains
Great Plains
Canadian Shield
Rocky Mountains
Great Lakes
Mackenzie River

Connect to the Issues

URBAN SPRAWL Urban development in the United States is generally determined by the location of landforms and the abundance of natural resources.

A HUMAN PERSPECTIVE The beauty and abundance of the land was a source of wonder to early explorers of North America. One who traveled the Atlantic coast referred to the "amazing extent of uncultivated land, covered with forests, and intermixed with vast lakes and marshes." A 17th–century French expedition described "a beautiful river, large, broad, and deep" (the Mississippi). Still others found "an unbounded prairie" (the Great Plains), "shining mountains" (the Rocky Mountains), and "an infinite number of fish" (along the Pacific coast). To the continent's first settlers, the land was "strong and it was beautiful all around," according to an old Native American song.

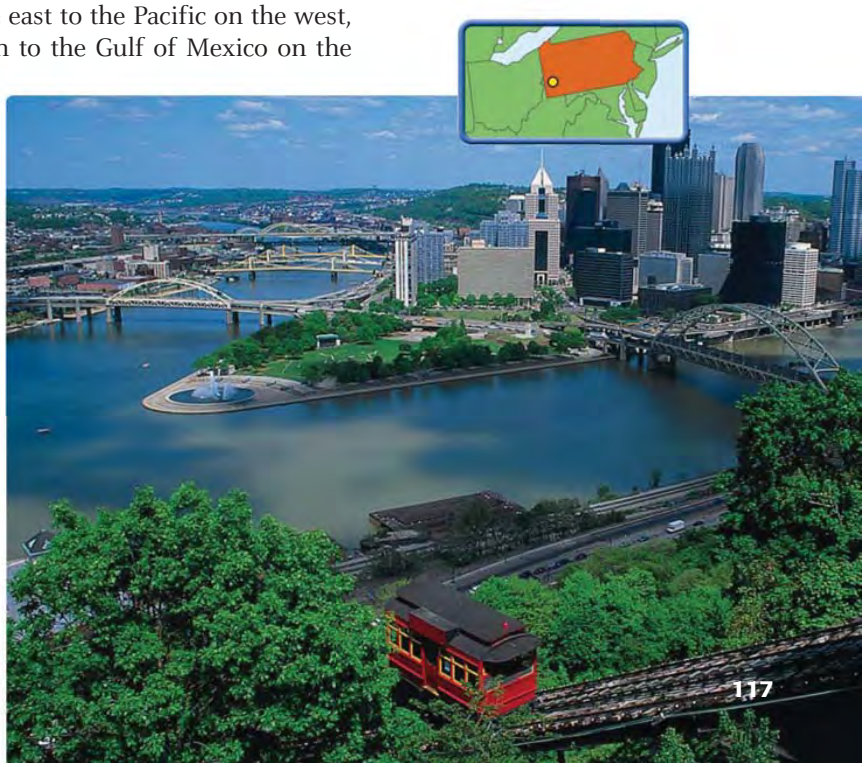
Landscape Influenced Development

The United States and Canada occupy the central and northern four-fifths of the continent of North America. Culturally, the region is known as Anglo America because both countries were colonies of Great Britain at one time and because most of the people speak English. (The southern one-fifth of the continent—Mexico—is part of Latin America.) The two countries are bound together not only by physical geography and cultural heritage, but also by strong economic and political ties.

VAST LANDS The United States and Canada extend across North America from the Atlantic Ocean on the east to the Pacific on the west, and from the Arctic Ocean on the north to the Gulf of Mexico on the south (only the United States). In total area, each ranks among the largest countries of the world. Canada ranks second, behind Russia, and the United States is third. Together, they fill one-eighth of the land surface of the earth.

ABUNDANT RESOURCES In addition to their huge landmass, the United States and Canada are rich in natural resources. They have fertile soils, ample supplies of water, vast forests, and large deposits of a variety of minerals. This geographic richness has for centuries attracted immigrants from around the world and has enabled both countries to develop into global economic powers.

LOCATION Pittsburgh, Pennsylvania, is located where the Allegheny and Monongahela rivers meet to form the Ohio River.



Landform Regions of the U.S. and Canada

1 East Quoddy Head in New Brunswick

2 Great Regina Plain in Saskatchewan

3 Cypress Gardens in Florida

0 250 500 miles
0 250 500 kilometers
Azimuthal Equal-Area Projection

Many and Varied Landforms

All major types of landforms are found in the United States and Canada. If you look at the map on the opposite page, you will see that both countries share many of these landforms. The most prominent are eastern and western mountain chains and enormous interior plains.

THE EASTERN LOWLANDS A flat, coastal plain runs along the Atlantic Ocean and the Gulf of Mexico. One section, called the Atlantic Coastal Plain, begins as narrow lowland in the northeastern United States and widens as it extends southward into Florida. This area features many excellent harbors. A broader section of the plain—the Gulf Coastal Plain—stretches along the Gulf of Mexico from Florida into Texas. The Mississippi River empties into the Gulf from this region.

Between these plains and the nearby Appalachian (A•puh•LAY•chun) Highlands is a low plateau called the Piedmont (PEED•MAHNT). This area of rolling hills contains many fast-flowing rivers and streams.

BACKGROUND The word *piedmont* comes from *pied,* meaning "foot," and *mont,* for "mountain." A piedmont is found at the foot of a mountain chain.

THE APPALACHIAN HIGHLANDS West of the coastal plain are the Appalachian highlands. The gently sloping **Appalachian Mountains** are in this region. They are one of the two major mountain chains in the United States and Canada. Both chains run north to south. The Appalachian Mountains extend some 1,600 miles from Newfoundland in Canada to Alabama. There are several mountain ranges in the Appalachian system. Among them are the Green and the Catskill mountains in the north and the Blue Ridge and the Great Smoky mountains in the south.

Because the Appalachians are very old—more than 400 million years old—they have been eroded by the elements. Many peaks are only between 1,200 and 2,400 feet high. The Appalachian Trail, a scenic hiking path 2,160 miles long, spans almost the entire length of the chain.

THE INTERIOR LOWLANDS A huge expanse of mainly level land covers the interior of North America. It was flattened by huge glaciers thousands of years ago. The terrain includes lowlands, rolling hills, thousands of lakes and rivers, and some of the world's most fertile soils.

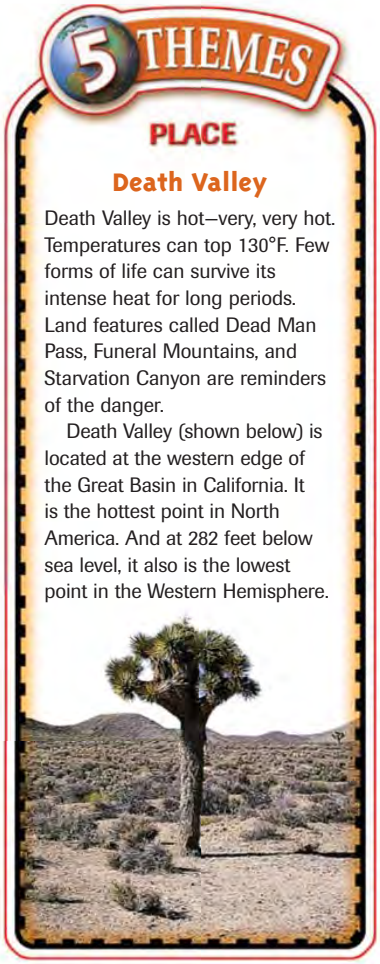
The interior lowlands are divided into three subregions: the Interior Plains, the Great Plains, and the Canadian Shield. The Interior Plains spread out from the Appalachians to about 300 miles west of the Mississippi River. They gradually rise from a few hundred feet above sea level to about 2,000 feet. To the west are the **Great Plains,** a largely treeless area that continues the ascent to about 4,000 feet. The **Canadian Shield** lies farther north. This rocky, mainly flat area covers nearly 2 million square miles around Hudson Bay. It averages 1,500 feet above sea level but reaches over 5,000 feet in Labrador. A

Geographic Thinking

Making Comparisons

A Which of the interior lowlands has the highest elevation?

THE WESTERN MOUNTAINS, PLATEAUS, AND BASINS West of the plains are the massive, rugged **Rocky Mountains,** the other major mountain system of the



United States and Canada. The Rockies are a series of ranges that extend about 3,000 miles from Alaska south to New Mexico. Because they are relatively young—about 80 million years old—the Rockies have not been eroded like the Appalachians. Many of their jagged, snow-covered peaks are more than 12,000 feet high. The **Continental Divide** is the line of highest points in the Rockies that marks the separation between rivers flowing eastward and westward. B

Between the Rockies and the Pacific Ocean is an area of mixed landforms. A series of ranges, including the Sierra Nevada and the Cascade Range, run parallel to the Pacific coastline from California to Alaska. North America's highest peak—Mt. McKinley (also called by its Native American name, Denali)—is in Alaska, towering 20,320 feet above sea level. Major earthquakes occur near the Pacific ranges. Between these

Geographic Thinking

Making Comparisons

B How do the Rockies differ from the Appalachians?

ranges and the Rockies are steep cliffs, deep canyons, and lowland desert areas called basins.

THE ISLANDS Canada's northernmost lands are islands riding the icy seas near the Arctic Circle. Three of the islands—Ellesmere, Victoria, and Baffin—are huge. In North America, only Greenland is larger.

Two island chains created by volcanic activity are part of the westernmost United States. The rugged, treeless Aleutian Islands extend in an arc off the coast of Alaska. The lush, tropical Hawaiian Islands, though politically part of the United States, are not geographically part of North America. They lie in the central Pacific, about 2,400 miles to the southwest.

Resources Shape Ways of Life

The landforms of the United States and Canada hold a rich variety and abundance of natural resources. Both countries are leading agricultural and industrial nations because of this wealth of resources.

OCEANS AND WATERWAYS The United States and Canada possess ample water resources. They are bounded by three oceans—Atlantic, Pacific, and Arctic. The United States is also bounded by the Gulf of Mexico. As a result, both countries have important shipping and fishing industries.

Inland, large rivers and lakes serve as sources of transportation, hydroelectric power, irrigation, fresh water, and fisheries. Eight of the world's 15 largest lakes are found in this region. Among these are the **Great Lakes**—Huron, Ontario, Michigan, Erie, and Superior. As you will see on page 129, these lakes and the St. Lawrence River form one of the world's major shipping routes.

The continent's longest and busiest river system is the Mississippi-Missouri-Ohio. The Mississippi River runs almost the north-south length of the United States, from Minnesota to the Gulf of Mexico. (See map at right.) The Mississippi's main tributaries, the Ohio and Missouri rivers, are major rivers in their own right. Canada's longest river is the **Mackenzie River,** which is part of a river system that flows across the Northwest Territories to the Arctic Ocean.

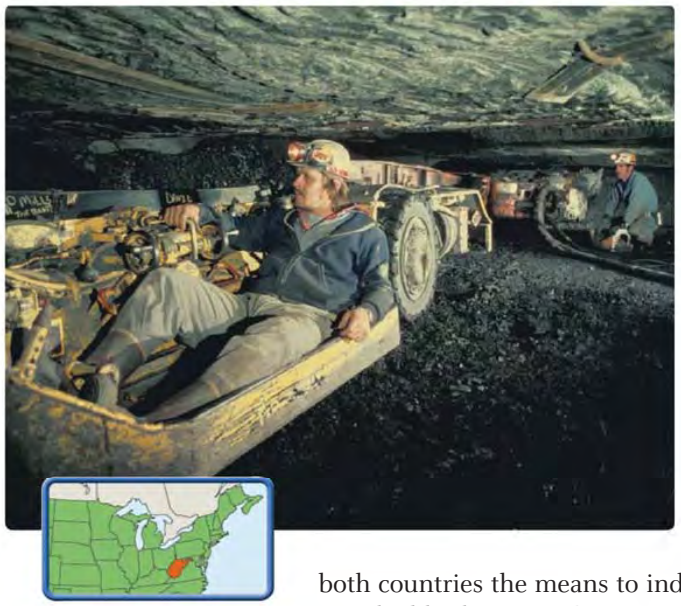
LAND AND FORESTS One of the richest natural resources of the United States and Canada is the land itself. Both countries are large and contain some of the most fertile soils in the world. In fact, the land is so productive that North America is the world's leading food exporter. Much of this agricultural land is found in the plains regions and in river valleys.

SKILLBUILDER: Interpreting Maps

1. **LOCATION** What states have the Mississippi River for at least part of their border?
2. **MOVEMENT** What rivers empty into the Mississippi?

Geographic Thinking

Using the Atlas Use the map on page 103. Find the Mackenzie River. Into which body of water does it empty?



REGION This West Virginia coal mine is in one of the world's most important coal-producing regions—the Appalachian highlands. **What other region in North America is an important coal producer?**

The United States and Canada also have huge forests. About one-half of Canada is covered by woodlands, as is one-third of the United States. Canada's forests cover more land than those of the United States, but the United States has more kinds of trees because of its more varied climate. Both countries are major producers of lumber and forest products.

MINERALS AND FOSSIL FUELS As you saw on the map on page 120, the United States and Canada have large quantities and varieties of minerals and fossil fuels. These resources gave both countries the means to industrialize rapidly.

Valuable deposits of iron ore, nickel, copper, gold, and uranium are found in the Canadian Shield. Scattered among the western mountains are gold, silver, copper, and uranium. Both countries also have substantial deposits of coal, natural gas, and oil, and well-developed networks for distributing these energy-producing fossil fuels. Important coal-producing areas are the Appalachian highlands and the northern Great Plains. Significant deposits of oil and natural gas are found in the Great Plains, Alaska, and along the Gulf of Mexico.

The United States is the world's biggest consumer of energy resources. Its need for these fuels is so great that it is a major importer. In fact, most of Canada's energy exports go to its neighbor to the south.

In the next section, you will read how some landforms of the United States and Canada have affected climate and vegetation patterns.

Geographic Thinking

Seeing Patterns Why are oil and natural gas important to highly-industrialized nations?

SECTION 1 Assessment

1 Places & Terms

Identify and explain where in the region these would be found.

- Appalachian Mountains
- Great Plains
- Canadian Shield
- Rocky Mountains
- Great Lakes

2 Taking Notes

LOCATION Review the notes you took for this section.

Landforms	
Resources	

- What is the relative location of the Great Lakes?
- What is the relative location of most of Canada's islands?

3 Main Ideas

a. What landforms are shared by the United States and Canada?

b. Why are the Great Lakes important to both the United States and Canada?

c. Why do most of Canada's energy exports go to the United States?

4 Geographic Thinking

Making Generalizations What makes the United States and Canada leading industrial nations? **Think about:**

- available resources
- oceans and waterways

See Skillbuilder Handbook, page R6.

GeoActivity

EXPLORING LOCAL GEOGRAPHY Using the maps on pages 103 and 118, identify the landforms located in your state. Then draw a **sketch map** of your state showing the major landforms and water bodies.

2 Climate and Vegetation

Main Ideas

- Almost every type of climate is found in the 50 United States because they extend over such a large area north to south.
- Canada's cold climate is related to its location in the far northern latitudes.

Places & Terms

permafrost

prevailing westerlies

Everglades

US & CANADA

CONNECT TO THE ISSUES

URBAN SPRAWL The rapid spread of urban sprawl has led to the loss of much vegetation in both the United States and Canada.

A HUMAN PERSPECTIVE A little gold and bitter cold—that is what thousands of prospectors found in Alaska and the Yukon Territory during the Klondike gold rushes of the 1890s. Most of these fortune hunters were unprepared for the harsh climate and inhospitable land of the far north. Winters were long and cold, the ground frozen. Ice fogs, blizzards, and avalanches were regular occurrences. You could lose fingers and toes—even your life—in the cold. But hardy souls stuck it out. Legend has it that one miner, Bishop Stringer, kept himself alive by boiling his sealskin and walrus-sole boots and then drinking the broth.

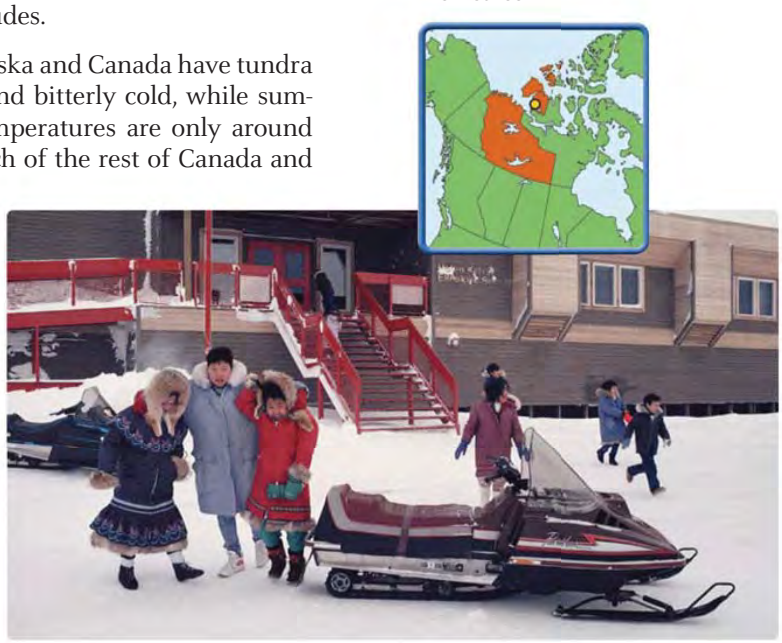
Shared Climates and Vegetation

The United States and Canada have more in common than just frigid winter temperatures where Alaska meets northwestern Canada. Other shared climate and vegetation zones are found along their joint border at the southern end of Canada and the northern end of the United States.

If you look at the map on page 125, you will see that the United States has more climate zones than Canada. This variety, ranging from tundra to tropical, occurs because the country extends over such a large area north to south. Most of the United States is located in the mid-latitudes, where the climates are moderate. Canada is colder because so much of it lies far north in the higher latitudes.

COLDER CLIMATES The Arctic coast of Alaska and Canada have tundra climate and vegetation. Winters are long and bitterly cold, while summers are brief and chilly. Even in July, temperatures are only around 40°F. The land is a huge, treeless plain. Much of the rest of Canada and Alaska have a subarctic climate, with very cold winters and short, mild summers. A vast forest of needle-leafed evergreens covers the area. In some places, there is **permafrost,** or permanently frozen ground.

The Rocky Mountains and the Pacific ranges have highland climate and vegetation. Temperature and vegetation vary with elevation and latitude. Generally, the temperature is colder and the vegetation is more sparse in the higher, more northerly mountains. The mountains also influence the temperature and precipitation of surrounding lower areas. For example, the



MOVEMENT The snowmobile has replaced the dogsled as transportation in many parts of the Northwest Territories. Here, a mother picks up her children from school.

coastal ranges protect the coast from cold Arctic air from the interior. In the United States, the western mountains trap Pacific moisture. This makes lands west of the mountains rainy and those east very dry.

MODERATE CLIMATES The north central and northeastern United States and southern Canada near the U.S. border have a humid continental climate. Winters are cold and summers warm. Climate and soil make this one of the world's most productive agricultural areas, yielding an abundance of dairy products, grain, and livestock. In the northern part of this climate zone, summers are short. There are mixed forests of deciduous and needle-leafed evergreen trees. Most of the population of Canada is concentrated here. In the southern part of this zone, which is in the United States, summers are longer. For the most part, deciduous forests are found east of the Mississippi River and temperate grasslands are found to the west. A

The Pacific coast from northern California to southern Alaska, which includes British Columbia, has a climate described as marine west coast. This climate is affected by Pacific Ocean currents, the coastal mountains, and the **prevailing westerlies**—winds that blow from west to east in the middle of the latitudes. The summers are moderately warm. The winters are long and mild, but rainy and foggy. Vegetation is mixed, including dense forests of broad-leafed deciduous trees, needle-leafed evergreens, and giant California redwoods. The Washington coast even has a cool, wet rain forest.

Geographic Thinking

Seeing Patterns

A Why is most of Canada's population clustered in the humid continental region?

Differences in Climate and Vegetation

The milder, dry, and tropical climates of North America are found south of 40°N latitude. Much of the United States is located in these climate zones; little of Canada is.

MILDER CLIMATES Most southern states have a humid subtropical climate. This means that summers are hot and muggy, with temperatures ranging from about 75°F to 90°F. Winters are usually mild and cool. Moist air from the Gulf of Mexico brings rain during the winter. The combination of mild temperatures and adequate rainfall provides a long growing season for a variety of crops—from citrus fruits in Florida to peanuts in Georgia. Broad-leafed evergreen trees and needle-leafed evergreen trees are found in this region. The central and southern coasts of California have a Mediterranean climate. Summers are dry, sunny, and warm. Winters are mild and somewhat rainy. Temperatures range from 50°F to 80°F year-round. A long growing season and irrigation make this a rich farming area for fruits and vegetables. B

Geographic Thinking

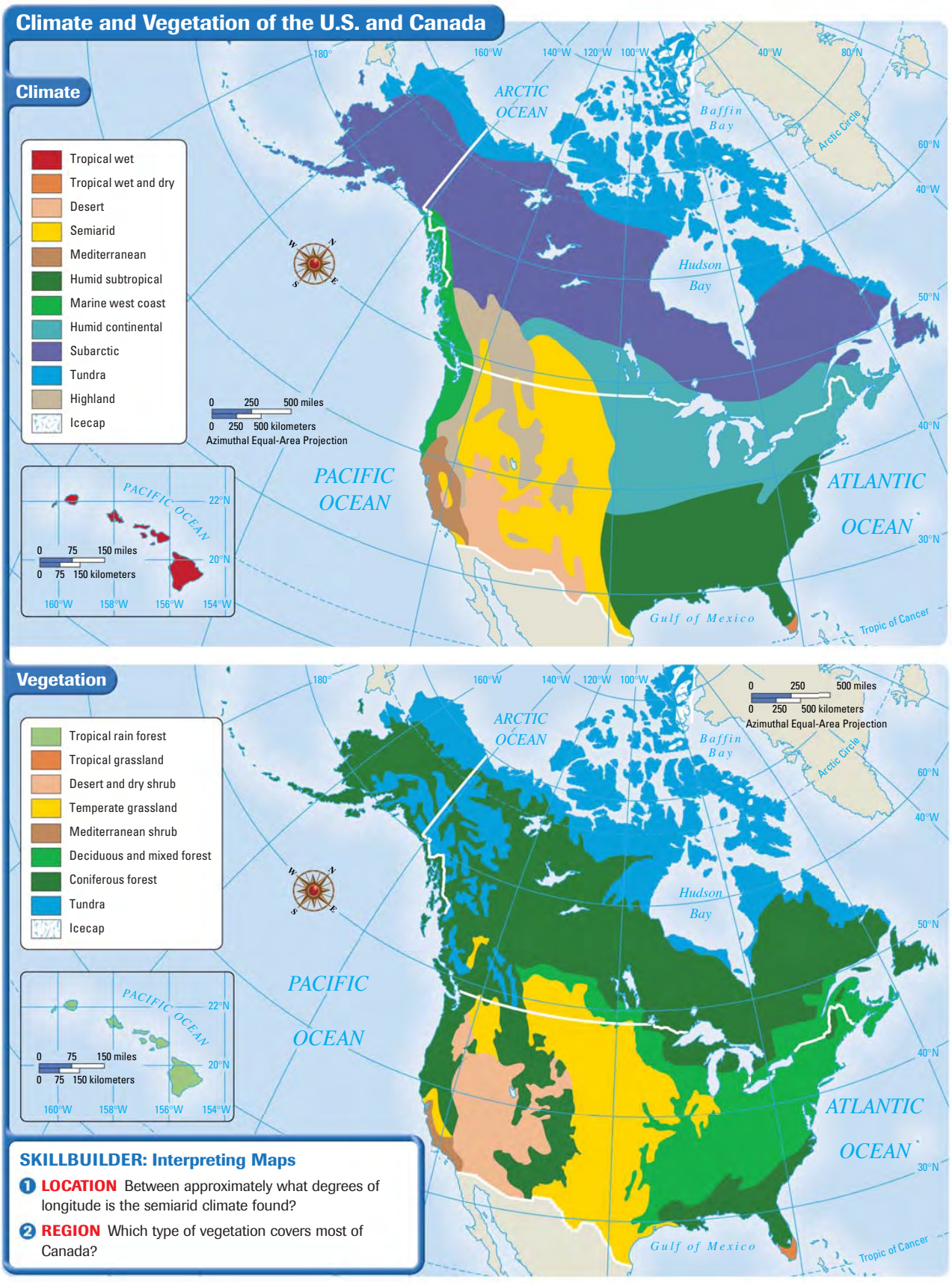
Making Comparisons

B Why don't central and southern California have a marine west coast climate?

DRY CLIMATES The Great Plains and dry northern parts of the Great Basin have a semiarid climate. This means dry weather—only about 15 inches of rain annually—and vegetation that is mainly short grasses and shrubs. The southwestern states have a desert climate. In these states, the weather is usually hot and dry. Less than 10 inches of rain falls each year. Some cactus plants thrive, but much of the area is barren rock or sand. Large desert areas are the Mojave and the Sonoran.

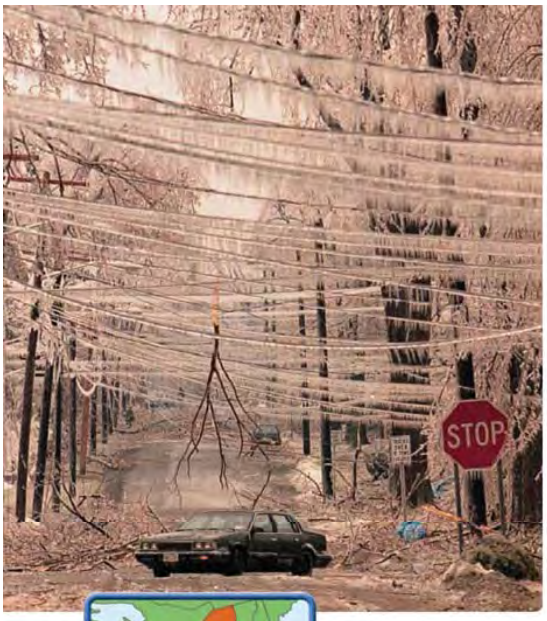
TROPICAL CLIMATES In the United States, only Hawaii and southern Florida have tropical climates. The islands of Hawaii have a tropical wet climate that supports lush rain forests. Temperatures vary only

Climate and Vegetation of the U.S. and Canada



SKILLBUILDER: Interpreting Maps

1. **LOCATION** Between approximately what degrees of longitude is the semiarid climate found?
2. **REGION** Which type of vegetation covers most of Canada?



REGION Deadly ice storms like this one in Watertown, New York, create chaos each winter, especially in heavily populated areas. **What are some of the hazards of this form of extreme weather?**

a few degrees in the 70s°F. Mount Waialeale (wy•AH•lay•AH•lay) on Kauai island receives about 460 inches of rain annually, and is one of the wettest spots on earth. Southern Florida has a tropical wet and dry climate. It is nearly always warm, but has wet and dry seasons. Vegetation is mainly tall grasses and scattered trees, like those in the **Everglades,** a huge swampland that covers some 4,000 square miles.

Geographic Thinking

Making Comparisons How do climate and vegetation differ between Mediterranean and tropical climates?

Effects of Extreme Weather

Weather in the United States and Canada can be harsh and sometimes deadly. You can see the areas affected by extreme weather and climate conditions by looking at the natural hazards map on page 107.

In both cold and mild climates, severe storms can trigger widespread devastation. Warm air from the Gulf of Mexico and cold Canadian air masses sometimes clash over the plains region to produce violent thunderstorms, tornadoes, and blizzards. As you read in Unit 1, tornadoes strike so often in an area of the Great Plains that it is called "Tornado Alley." In summer and fall, hurricanes that sweep along the Atlantic and Gulf coasts can cause great damage. Winter snowstorms may bring normal life to a temporary halt in many cities, such as the one shown in the photo on this page.

Disasters can also result from too much precipitation in a short time or too little over a long period. Heavy rainfall can cause flooding. Lands along major rivers, such as the Mississippi, are especially at risk. Too little rain or too much heat may bring on droughts and dust storms or spark destructive forest fires.

In this section, you read about the varied climates and vegetation of the United States and Canada. In the next section, you will learn how physical geography has shaped life in these countries.

SECTION 2 Assessment

1 Places & Terms

Identify and explain where in the region these would be found.

- permafrost
- prevailing westerlies
- Everglades

2 Taking Notes

REGION Review the notes you took for this section.

Climate and Vegetation

- What climate regions do the United States and Canada share?
- What climate regions are found in the United States but not in Canada?

3 Main Ideas

a. How do the prevailing westerlies change the climate of parts of the United States and Canada?

b. In which region would you find the dry climates?

c. In which climate type would you find the Everglades?

4 Geographic Thinking

Seeing Patterns Why doesn't all of Alaska have cold, snowy winters? **Think about:**

- location
- prevailing westerlies

RESEARCH LINKS
CLASSZONE.COM

GeoActivity

MAKING COMPARISONS Make a list of five Canadian cities and five U.S. cities. Then use the Internet to find out the average monthly temperature and monthly rainfall for each city. Create a **database** with the information. Then summarize your findings.

3 Human–Environment Interaction

Main Ideas

- Humans have dramatically changed the face of North America.
- European settlements in the United States and Canada expanded from east to west.

Places & Terms

nomad
Beringia
St. Lawrence Seaway
lock

CONNECT TO THE ISSUES
URBAN SPRAWL The spreading of cities and suburbs over wider areas—urban sprawl—is causing problems.

A HUMAN PERSPECTIVE The sun-baked American Southwest was a harsh environment for its early inhabitants, the ancestors of today's Pueblo peoples. But these early settlers made good use of available resources. From the land, they took clay and stone building materials. They built multi-room, apartment-like dwellings in cliffs. This gave protection against daytime heat, nighttime cold, and human and animal enemies. From plants and animals, the early settlers got food and clothing. They survived because they adapted to their environment.

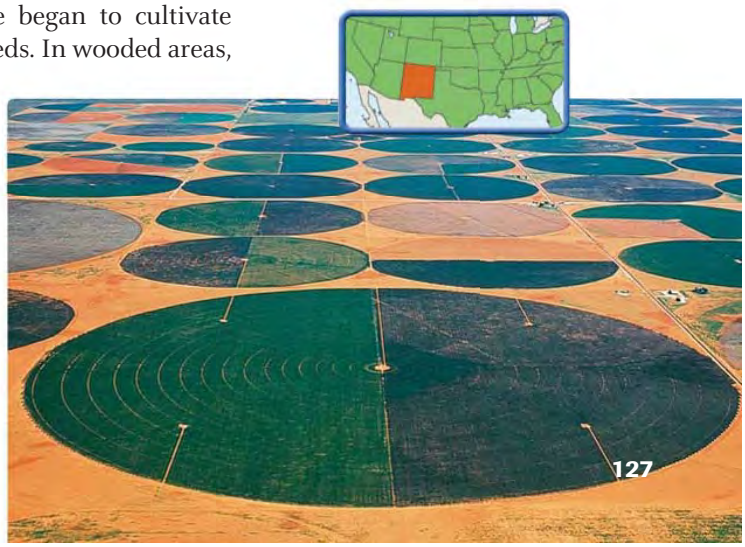
Settlement and Agriculture Alter the Land

Before humans came, North American landforms were changed only by natural forces, such as weathering and erosion. That changed when the first settlers—the ancestors of the native peoples of North America—arrived thousands of years ago.

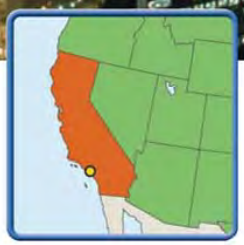
SETTLEMENT The first inhabitants of the area of North America now known as the United States and Canada were **nomads,** people who move from place to place. Most archaeologists believe that they probably migrated from Asia over **Beringia,** a land bridge that once connected Siberia and Alaska. These migrants moved about the land. They hunted game, fished, and gathered edible wild plants. Since water was necessary for survival, these first Americans made temporary settlements along coastlines and near rivers and streams. They adjusted to extremes of temperature and climate. They also adapted to the region's many natural environments, including mountains, forests, plains, and deserts.

AGRICULTURE Many early settlements became permanent after agriculture replaced hunting and gathering as the primary method of food production about 3,000 years ago. When people began to cultivate crops, they changed the landscape to meet their needs. In wooded areas, early farmers cut down trees for lumber to build houses and to burn as fuel. To plant crops, they plowed the rich soil of river valleys and flood plains using hoes of wood, stone, and bone. They dug ditches for irrigation. Vegetables they first cultivated—corn, beans, and squash—are now staples around the world.

Agriculture remains an important economic activity in the United States and Canada. In fact, both countries are leading exporters of agricultural products.



REGION Irrigation has opened land in dry areas to farming. Tracts such as these in New Mexico are watered by a method called center-pivot, which taps underground water.
What are some other ways water can be brought to dry land?



HUMAN–ENVIRONMENT INTERACTION Los Angeles sprawls out almost as far as the eye can see in this photo. **What changes were made to the environment as the city grew?**

Building Cities

Where a city is built and how it grows depends a great deal on physical setting. As you read, living near water was crucial to early settlers, as it would be to those who followed. Other factors that can affect the suitability of a site are landscape, climate, weather, and the availability of natural resources. Some of these factors played a role in the development of two major cities of the region.

MONTREAL—ADAPTING TO THE WEATHER Montreal, Quebec, is Canada's second largest city and a major port—even though its temperature is below freezing more than 100 days each year. Montreal's location on a large island where the St. Lawrence and Ottawa rivers meet made it an appealing site to early French explorers. The French built a permanent settlement there in 1642. The community was founded at the base of Mount Royal and grew by spreading around the mountain. To make the city's severe winters more endurable, people went inside and underground. In fact, large areas of Montreal have been developed underground, including a network of shops and restaurants.

LOS ANGELES—CREATING URBAN SPRAWL Unlike Montreal, Los Angeles, California, has a mild climate year-round. It also has a desirable location on the Pacific coast. Hundreds of thousands of people were pouring into this once small Spanish settlement by the early 1900s. As a result, the city expanded farther and farther into nearby valleys and desert-like foothills. During the 1980s, Los Angeles became the second most populous city in the United States. However, rapid population expansion brought problems. These included air pollution, inadequate water supplies, and construction on earthquake-threatened land. But such problems did not stop the city's growth. Los Angeles itself now covers about 469 square miles. Its metropolitan area spreads over 4,060 square miles. A

Building cities was just one way humans interacted with their environment. Another was in the construction of transportation systems to make movement from place to place less difficult.

Geographic Thinking

Making Comparisons

A How has climate influenced the development of Los Angeles and Montreal?

Overcoming Distances

The native peoples and the Europeans who followed encountered many obstacles when they moved across the land. They faced huge distances,

large bodies of water, formidable landforms, and harsh climates. But they spanned the continent and changed the natural environment forever.

TRAILS AND INLAND WATERWAYS Some of the early peoples who came across the land bridge from Siberia blazed trails eastward. Others followed the Pacific coast south toward warmer climates. Still others remained in the northwest, in what are now Alaska and northern Canada.

When Europeans from England and France crossed the Atlantic to North America, they set up colonies along the coast. Then, they moved inland. As they did, they carved overland trails, including the National and Wilderness roads and the Oregon and Santa Fe trails. They also used inland waterways, such as the Mississippi and Ohio rivers. To connect bodies of water, they built a network of canals. The Erie Canal across upstate New York opened in 1825 and made the first navigable water link between the Atlantic and the Great Lakes. B

Geographic Thinking

Seeing Patterns

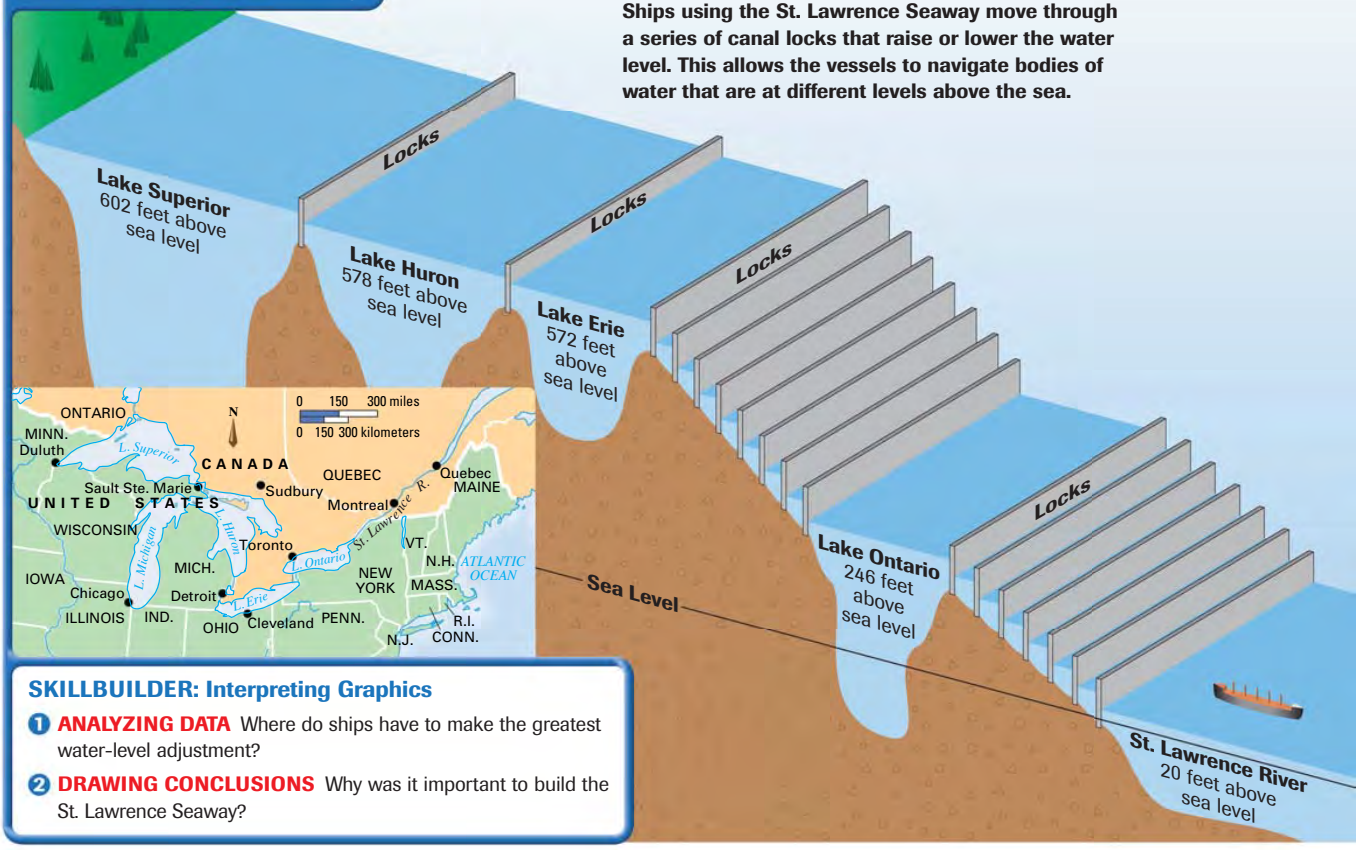
B Why was it important to link waterways?

North America's most important deepwater ship route—the **St. Lawrence Seaway**—was completed in the 1950s as a joint project of the United States and Canada. As you can see from the map on this page, the seaway connects the Great Lakes to the Atlantic Ocean by way of the St. Lawrence River. Ships are raised and lowered some 600 feet by a series of **locks,** sections of a waterway with closed gates where water levels are raised or lowered. The seaway enables huge, oceangoing vessels to sail into the industrial and agricultural heartland of North America.

US & CANADA

The St. Lawrence Seaway

Ships using the St. Lawrence Seaway move through a series of canal locks that raise or lower the water level. This allows the vessels to navigate bodies of water that are at different levels above the sea.



SKILLBUILDER: Interpreting Graphics

1. **ANALYZING DATA** Where do ships have to make the greatest water-level adjustment?
2. **DRAWING CONCLUSIONS** Why was it important to build the St. Lawrence Seaway?

TRANSCONTINENTAL RAILROADS The marriage of the steam locomotive and the railroads made crossing the continent from the Atlantic to the Pacific quicker and easier. Railroad building began in North America in the early 19th century. But many of the physical features shown on the map on page 103 presented natural barriers. To make way, railroad workers had to cut down forests, build bridges over streams, and blast tunnels through mountains.

The first transcontinental railroad was completed across the United States in 1869. A trans-Canada railroad, from Montreal to British Columbia, was completed in 1885. These railroads carried goods and passengers cross-country, promoting economic development and national unity as they went. Today, the United States has the world's largest railway system, and Canada the third largest.

NATIONAL HIGHWAY SYSTEMS Before the railroads came, there were roads that connected towns and cities and provided pathways to the interior. But it was the development of the automobile in the early 20th century that spurred roadbuilding. Today, both the United States and Canada have extensive roadway systems. The United States has about 4 million miles of roads, while Canada has about 560,000 miles.

As you read earlier, much of Canada's population is concentrated in the south. So, Canadians built their major highways east to west in the southern part of the country, connecting principal cities. The Trans-Canada Highway, Canada's primary roadway, stretches about 4,860 miles from St. John's, Newfoundland, to Victoria, British Columbia. In the United States, the interstate highway system is a network of more than 46,000 miles of highways that crisscross the country. Begun in the 1950s, it connects the United States with Canada on the north and Mexico on the south, and also runs east-west across the country.

In this chapter, you read about the physical geography of the United States and Canada. In the next chapter, you will learn about the human geography of one of these countries—the United States.

Geographic Thinking

Making Comparisons How is the Trans-Canada Highway similar to and different from the U.S. interstate highway system?

SECTION 3 Assessment

1 Places & Terms

Identify and explain where in the region these would be found.

- nomad
- Beringia
- lock
- St. Lawrence Seaway

2 Taking Notes

MOVEMENT Review the notes you took for this section.

- Why are railroads important to a nation's development?
- In what ways did settlers in Canada and the United States move across the continent?

3 Main Ideas

a. What factors affect the choice of location of a city?

b. Why is the St. Lawrence Seaway important?

c. How did methods of moving people and goods across the continent change over time?

4 Geographic Thinking

Making Inferences In what ways have transportation systems crossing the continent altered the environment? **Think about:**

- construction of canals and railroads
- building cities

See Skillbuilder Handbook, page R4.

GeoActivity

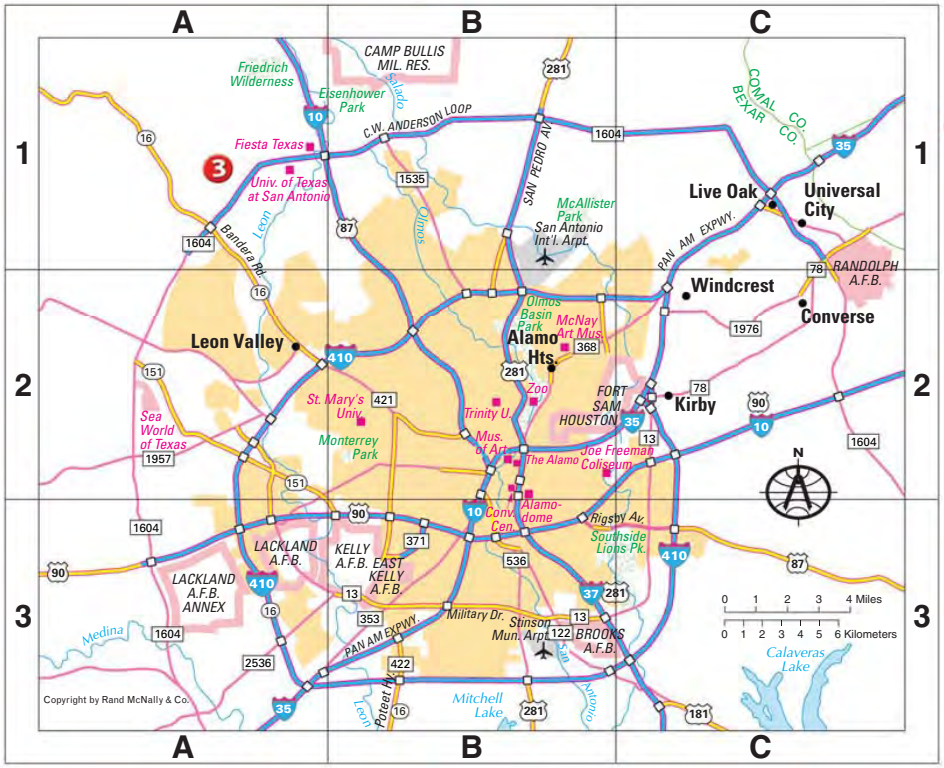
ASKING GEOGRAPHIC QUESTIONS Obtain and study a highway map of your state. Then come up with a geographic question about the map, perhaps one considering geographic features that caused the location of a highway. Answer the question and make a **class presentation** using visuals.

Reading a Highway Map

San Antonio, Texas, is a part of a metropolitan area of more than one million people, located in south central Texas. It has been a crossroads for much of its history—for its earliest Native American settlers, the Spanish who came later, and finally, the Texans who won independence from Mexico not long after the battle of the Alamo. Looking at the map below, you can see that the city remains a meeting point, crisscrossed by interstate, U.S., state, and county highways.

THE LANGUAGE OF MAPS The primary purpose of a **highway map** is to show the location of roadways in an area and the distance between places. But highway maps usually include much other information. For example, they may identify important sites, such as airports, parks, and universities.

San Antonio and Vicinity, 2001 ❶



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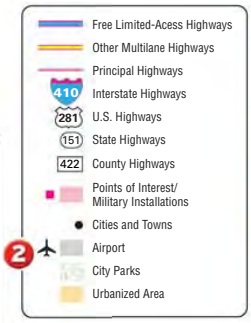


❶ The title identifies the area covered by the map.

❷ The key shows the symbols used on the map and explains what they mean. For example, the ✈ symbol shows where airports are located.

❸ Points of interest, such as the Alamo (B–2) or Sea World (A–2), are marked by small red squares or by pink ribbons, depending on their size.

Map and Graph Skills Assessment

1. Seeing Patterns
Which interstate highways pass through the center of San Antonio?

2. Making Decisions
Which interstate highway and U.S. highway would you take to the Alamo when coming from the southeast?

3. Analyzing Data
By the most direct route, how far is Live Oak from Leon Valley by highway?

Chapter 5 Assessment

VISUAL SUMMARY
PHYSICAL GEOGRAPHY OF THE UNITED STATES AND CANADA

Landforms

Major Mountain Ranges:
Rocky Mountains, Appalachian Mountains

Major Waterways:
Mississippi-Missouri-Ohio river system, Great Lakes, Mackenzie River, Columbia River, Rio Grande River, Colorado River

Interior Lowlands:
Great Plains, Canadian Shield, Interior Plains

Resources

- Both the United States and Canada have huge mineral and fossil fuel resources.
- Forest lands cover about one-third of the United States and one-half of Canada.

Climate and Vegetation

- Canada's climates and vegetation are related to its far northern location.
- The United States includes regions that are in almost every climate and vegetation zone.

Human-Environment Interaction

- Movement westward altered the land in both the United States and Canada.
- Transportation networks helped develop the land and economy of the region.

Reviewing Places & Terms

A. Briefly explain the importance of each of the following.

1. Appalachian Mountains
2. Rocky Mountains
3. Great Plains
4. Canadian Shield
5. Great Lakes
6. Mackenzie River
7. prevailing westerlies
8. Everglades
9. lock
10. St. Lawrence Seaway

B. Answer the questions about vocabulary in complete sentences.

11. Which of the places listed above are found both in the United States and Canada?
12. Which of the mountain chains form a boundary with the Canadian Shield?
13. The Great Plains are bounded on one side by which landform listed above?
14. The Hudson Bay is found in which place listed above?
15. Which two waterways are linked?
16. Which place above is a huge swampland?
17. Which of the places are subregions of the Interior Lowlands?
18. What climate region in North America is influenced by the prevailing westerlies?
19. Why are the Great Lakes and the St. Lawrence Seaway important?
20. Why are locks needed on the St. Lawrence Seaway?

Main Ideas

Landforms and Resources (pp. 117-122)

1. How do the Eastern Lowlands differ from the Interior Lowlands?
2. What is the Continental Divide?
3. Why are the United States and Canada leading food producers?
4. What are the most abundant natural resources in the United States and Canada?

Climate and Vegetation (pp. 123-126)

5. In what type of climate would you expect to find permafrost?
6. Which climates are found in the United States and not in Canada?
7. What type of vegetation covers most of Canada?

Human-Environment Interaction (pp. 127-131)

8. How did the earliest inhabitants of the United States and Canada, those who arrived before the Europeans, alter the land?
9. What problems arose in Los Angeles with rapid expansion?
10. How did the settlers of the United States and Canada overcome the distances across the continent?

Critical Thinking

1. Using Your Notes

Use your completed chart to answer these questions.

Landforms	
Resources	

a. How is the location of cities related to landforms and to climate?

b. How is Canada's economy affected by its climate and vegetation?

2. Geographic Themes

a. **MOVEMENT** Write a sentence describing the movement of people and goods across the United States and Canada over the last 200 years.

b. **PLACE** How have the Great Lakes contributed to the development of both the United States and Canada?

3. Identifying Themes

In developing their city, how did the people of Montreal solve the problems of a severe climate? Which of the five themes apply to this situation?

4. Making Inferences

What aspects of physical geography have contributed to the economic success of the United States and Canada?

5. Seeing Patterns

How did the presence of north-to-south flowing rivers in the United States affect its development?

Additional Test Practice, pp. S1–S37

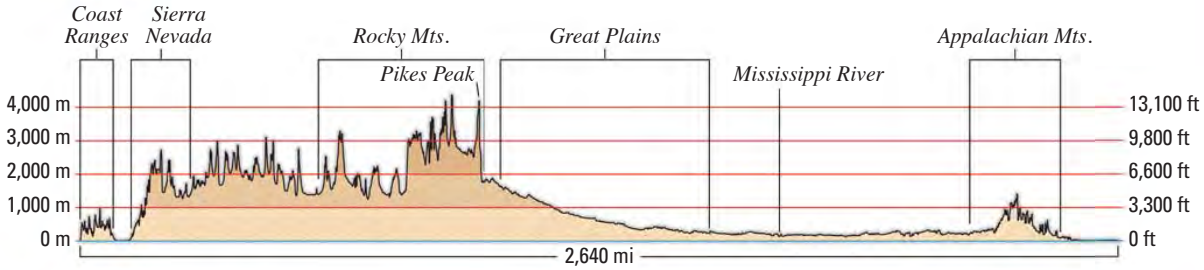
TEST PRACTICE
CLASSZONE.COM

Geographic Skills: Interpreting Maps

Physical Profile of the United States

Use the map below to answer the following questions.

1. **REGION** What might be said about the land between the Appalachians and the Mississippi?
2. **PLACE** What is the difference in altitude between the Coastal ranges and the Sierra Nevada?
3. **REGION** What happens to the land as you move west of the Mississippi?



GeoActivity

Create a three-dimensional model of the cross section on this page. Use colors to indicate elevations and label the physical features you show. Create a legend for your model.

INTERNET ACTIVITY

Use the links at **classzone.com** to conduct research on the landforms of the United States and Canada. Focus on finding pictures of major and well-known landforms and waterways.

Creating a Multimedia Presentation From your research, select a series of pictures to include in a presentation on the theme "A Land of Contrasts." List the Web sites you used in preparing your report.