The United States and Canada

WHY IT’S IMPORTANT—

The United States and Canada are peaceful neighbors, sharing the longest undefended border in the world. These two countries have many things in common, including similar ways of life and a democratic heritage. In recent years, free trade has brought their economies closer together. In each country, one finds an increasing number of products that were made in the other country.

World Regions Video

To learn more about the United States and Canada and their impact on your world, view the World Regions video “The United States and Canada.”
Golden Gate Bridge across the entrance to San Francisco Bay
The United States and Canada span most of North America, stretching from the Pacific Ocean to the Atlantic. These two huge countries share many physical features. Mountains frame their eastern and western edges, cradling a central region of vast plains.

When people first arrived on these plains, they found an immense sea—not of water, but of grass. Beneath the gently rolling landscape lay dark, fertile soil. In time, the grasslands were transformed into some of the world’s most productive farmland.

To the east of the plains stand the ancient, rounded Appalachian Mountains. To the west are the much younger Rocky Mountains, a majestic ribbon of jagged, snowcapped peaks. Still farther west are the Pacific Ranges, which run along the Pacific coast.

Almost every imaginable type of climate—from tundra to desert to tropical savanna—can be found within the borders of these two diverse countries.

1 Six-foot-tall sunflowers thrive on this farm in North Dakota, in the heart of the Great Plains. North Dakota leads the United States in the production of sunflowers. The protein-rich seeds are turned into margarine and cooking oil.
**Snow-dusted peaks** surround a climber in the Canadian Rockies. The backbone of North America, the Rockies extend from the farthest reaches of Alaska and the Yukon Territory down into the southwestern United States. The only deserts in the region are found in the southwestern United States, in an area of low basins and high, windswept plateaus sandwiched between the Pacific Ranges and the Rocky Mountains. These rippled dunes lie in Utah.

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**Boats line the harbor** of a fishing village in Nova Scotia, along Canada’s Atlantic coast. Both Canadians and Americans harvest fish and other types of seafood from the Atlantic’s bountiful waters.
Region of Immigrants

Even the ancestors of Native Americans came from a distant shore. These ancient people may have crossed from Asia to North America by way of a land bridge that spanned what is now the Bering Strait.

Immigrants began arriving from Europe in the 1500s. In the centuries that followed, others came from Africa, Asia, and Latin America. Many made this land their home by choice. Others were forced to come as exiles or slaves.

Today, most people in the United States and Canada live in urban areas. Major cities are ethnically diverse, reflecting an immigrant heritage. The economic strength of both countries was built on the bounty of agriculture. Manufacturing, technology, and service industries have joined agriculture as the region’s primary economic activities.

1 The white walls of a Spanish mission, or religious settlement, stand out against a blue New Mexico sky. Hoping to convert the area’s native inhabitants to Christianity, the Spanish built many missions in what is now the southwestern United States.

2 Red lights and blues music illuminate a musician’s face. The blues, a distinctively American musical style, was developed by African Americans. It sprang from spiritual music and from the wails and calls used by Southern plantation workers.
Lights of Toronto, Ontario, stretch toward the horizon, brightening the night sky. With 4.7 million inhabitants in its metropolitan area, Toronto is Canada’s largest city. It is a thriving center for service industries such as finance and communications.

Freshly caught fish chill in a snow bank outside an Inuit village in Canada’s Northwest Territories. The Inuit have lived in the northern parts of Canada and Alaska for about a thousand years. Many still pursue traditional activities such as fishing and hunting.
1. In which Canadian province is Calgary located?

2. Through which U.S. states do the Coast Ranges run?
1. Where are most of Canada’s coal deposits located?

2. How has access to water affected city development? What is the predominant land use near cities?
### U.S. State Names: Meaning and Origin

<table>
<thead>
<tr>
<th>State</th>
<th>Name Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA</td>
<td>“thicket clearers” (Choctaw)</td>
</tr>
<tr>
<td>ALASKA</td>
<td>“the great land” (Aleut)</td>
</tr>
<tr>
<td>ARIZONA</td>
<td>“little spring” (Papago), or “dry land” (Spanish)</td>
</tr>
<tr>
<td>ARKANSAS</td>
<td>“downstream people” (Quapaw)</td>
</tr>
<tr>
<td>CALIFORNIA</td>
<td>unknown meaning (Spanish)</td>
</tr>
<tr>
<td>COLORADO</td>
<td>“red” (Spanish)</td>
</tr>
<tr>
<td>CONNECTICUT</td>
<td>“beside the long tidal river” (Native American)</td>
</tr>
<tr>
<td>DELAWARE</td>
<td>named for Virginia’s colonial governor, Baron De La Warr</td>
</tr>
<tr>
<td>FLORIDA</td>
<td>“feast of flowers” (Spanish)</td>
</tr>
<tr>
<td>GEORGIA</td>
<td>named for England’s King George II</td>
</tr>
<tr>
<td>HAWAII</td>
<td>unknown meaning (Native Hawaiian)</td>
</tr>
<tr>
<td>IDAHO</td>
<td>unknown meaning (Native American)</td>
</tr>
<tr>
<td>ILLINOIS</td>
<td>“tribe of superior men” (Native American)</td>
</tr>
<tr>
<td>INDIANA</td>
<td>“land of Indians” (European American)</td>
</tr>
<tr>
<td>IOWA</td>
<td>unknown meaning (Native American)</td>
</tr>
<tr>
<td>KANSAS</td>
<td>“people of the south wind” (Sioux)</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>“land of tomorrow” (Iroquoian)</td>
</tr>
<tr>
<td>LOUISIANA</td>
<td>named for France’s King Louis XIV</td>
</tr>
<tr>
<td>MAINE</td>
<td>named for an ancient French province</td>
</tr>
<tr>
<td>MARYLAND</td>
<td>named in honor of the wife of England’s King Charles I</td>
</tr>
<tr>
<td>MASSACHUSETTS</td>
<td>“great mountain place” (Native American)</td>
</tr>
<tr>
<td>MICHIGAN</td>
<td>“great lake” (Ojibway)</td>
</tr>
<tr>
<td>MINNESOTA</td>
<td>“sky-tinted water” (Sioux)</td>
</tr>
<tr>
<td>MISSISSIPPI</td>
<td>“father of the waters” (Native American)</td>
</tr>
<tr>
<td>State/Province</td>
<td>Name Origin</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MISSOURI</td>
<td>Jefferson City: “town of the large canoes” (Native American)</td>
</tr>
<tr>
<td>MONTANA</td>
<td>Helena: “mountainous” (Spanish)</td>
</tr>
<tr>
<td>NEBRASKA</td>
<td>Lincoln: “flat water” (Native American)</td>
</tr>
<tr>
<td>NEVADA</td>
<td>Carson City: “snowcapped” (Spanish)</td>
</tr>
<tr>
<td>NEW HAMPSHIRE</td>
<td>Concord: named for Hampshire, a county in England</td>
</tr>
<tr>
<td>NEW JERSEY</td>
<td>Trenton: named for Isle of Jersey, a British territory</td>
</tr>
<tr>
<td>NEW MEXICO</td>
<td>Santa Fe: named for the state’s former colonial ruler, Mexico</td>
</tr>
<tr>
<td>NEW YORK</td>
<td>Albany: named in honor of the English Duke of York</td>
</tr>
<tr>
<td>NORTH CAROLINA</td>
<td>Raleigh: named in honor of England’s King Charles I</td>
</tr>
<tr>
<td>NORTH DAKOTA</td>
<td>Bismarck: named for the Dakota, a Native American group</td>
</tr>
<tr>
<td>OHIO</td>
<td>Columbus: “great river” (Native American)</td>
</tr>
<tr>
<td>OKLAHOMA</td>
<td>Oklahoma City: “red people” (Choctaw)</td>
</tr>
<tr>
<td>OREGON</td>
<td>Salem: unknown meaning and origin</td>
</tr>
<tr>
<td>PENNSYLVANIA</td>
<td>Harrisburg: “Penn’s woodland,” named for the father of Pennsylvania’s founder, William Penn</td>
</tr>
<tr>
<td>RHODE ISLAND</td>
<td>Providence: unknown meaning and origin</td>
</tr>
<tr>
<td>SOUTH CAROLINA</td>
<td>Columbia: named for England’s King Charles I</td>
</tr>
<tr>
<td>SOUTH DAKOTA</td>
<td>Pierre: named for the Dakota, a Native American group</td>
</tr>
<tr>
<td>TENNESSEE</td>
<td>Nashville: named for Tanasi, “Cherokee villages” (Cherokee)</td>
</tr>
<tr>
<td>TEXAS</td>
<td>Austin: “friends” (Tejas)</td>
</tr>
<tr>
<td>UTAH</td>
<td>Salt Lake City: “people of the mountains” (Ute)</td>
</tr>
<tr>
<td>VERMONT</td>
<td>Montpelier: “green mountain” (French)</td>
</tr>
<tr>
<td>VIRGINIA</td>
<td>Richmond: named for the unmarried Queen Elizabeth I of England, known as “the Virgin Queen”</td>
</tr>
<tr>
<td>WASHINGTON</td>
<td>Olympia: named in honor of George Washington</td>
</tr>
<tr>
<td>WEST VIRGINIA</td>
<td>Charleston: began as the western part of Virginia before becoming a state in 1863</td>
</tr>
<tr>
<td>WISCONSIN</td>
<td>Madison: “grassy place” (Chippewa)</td>
</tr>
<tr>
<td>WYOMING</td>
<td>Cheyenne: “upon the great plain” (Delaware)</td>
</tr>
</tbody>
</table>

**Canadian Province and Territory Names: Meaning and Origin**

- **Alberta:** Edmonton: named for the daughter of England’s Queen Victoria
- **British Columbia:** Victoria: named for Christopher Columbus and the province’s British heritage
- **Manitoba:** Winnipeg: “strait of the great spirit” (Algonquian)
- **New Brunswick:** Fredericton: named for English royal family of Brunswick-Lunenburg
- **Newfoundland:** St. John’s: “new found land,” named by European explorer John Cabot in 1497
- **Northwest Territories:** Yellowknife: named for lands north and west of Lake Superior
- **Nova Scotia:** Halifax: Latin term for “New Scotland,” based on province’s Scottish heritage
- **Nunavut:** Iqaluit: “our land” (Inuktitut)
- **Ontario:** Toronto: meaning unknown (Iroquoian)
- **Prince Edward Island:** Charlottetown: named for the son of England’s King George III
- **Quebec:** Quebec: “place where the river narrowers” (Algonquian)
- **Saskatchewan:** Regina: “fast flowing river” (Cree)
- **Yukon Territory:** Whitehorse: “great river” (Native American)
Historians still debate the details, but everyone agrees that ice hockey was invented in Canada. The game seems to have originated in the early 1800s in Nova Scotia, one of Canada’s easternmost provinces. Not content to spend long winters indoors, some of Nova Scotia’s inhabitants began tinkering with an Irish game, similar to field hockey, that was played with sticks and a ball. The eager sportsmen realized that the slick surface of a frozen pond was a worthy alternative to a grassy playing field. They traded their shoes for skates, and ice hockey was born.

As the new game gained popularity, it spread west and north across Canada. By the turn of the century, ice hockey had become Canada’s national sport. And it was not just for men. The first all-female
ice hockey game on record was played in Ontario in 1892.

Hockey fever spread southward, too, crossing the U.S.-Canadian border into northern states such as Minnesota, Michigan, Massachusetts, and New York. In 1924 the Boston Bruins became the first U.S. team to join Canada’s National Hockey League. Other northern cities, including Chicago and Detroit, soon had teams on the League’s roster as well.

At this point, geography checked ice hockey’s southward spread. For nearly a quarter century, the game remained a northern pastime. It just didn’t catch on in southern states where cold weather was rare and lakes never froze.

Eventually, however, indoor ice rinks, televised hockey games, and a steady influx of Canadian players into the United States overcame the geographic barriers, and the sport found a foothold in nearly every state. Hockey made headlines in 1980 when America’s team beat the heavily favored Soviets in the Olympic Winter Games and then went on to win the gold medal. When Canadian superstar Wayne Gretzky came to play in the United States a few years later, hockey’s popularity surged again.

Now in-line skates and roller hockey make it possible for would-be players to get a feel for the game no matter where they live or what the season. Many major U.S. cities have professional hockey teams, including Phoenix, Dallas, and Miami. In fact, America’s Sun Belt alone is home to more hockey teams than there are in Canada! But ice hockey in the United States isn’t just for professionals. It’s played by kids—both boys and girls—and amateurs throughout the nation.
GeoJournal

As you read this chapter, note in your journal unusual facts about the physical geography of the United States and Canada—facts that make you ask how or why. Consider using these facts as the main ideas for essays or reports.

Chapter Overview  Visit the Glencoe World Geography Web site at txgeography.glencoe.com and click on Chapter Overviews—Chapter 5 to preview information about the physical geography of the region.
Guide to Reading

Consider What You Know
The United States and Canada share the world’s longest undefended border. What famous natural feature do both the United States and Canada claim as a tourist attraction?

Read to Find Out

• What are some key similarities and differences in the physical geography of the United States and Canada?
• Why have rivers played such an important role in this region’s development?
• What geographic factors have made the United States and Canada so rich in natural resources?

Terms to Know

• divide
• fall line
• headwaters
• fishery
• tributary

Places to Locate

• Mount McKinley
• Rocky Mountains
• Canadian Shield
• Appalachian Mountains
• Colorado River
• Rio Grande
• Mackenzie River
• Mississippi River
• St. Lawrence River
• Great Lakes

The rugged terrain of the Missouri Breaks bears witness to the geologic forces that have shaped the North American continent. The United States and Canada share the northern part of the continent. They form a geographic region of enormous physical variety and natural wealth. Together, Canada and the continental United States cover more than 7 million square miles (18 million sq. km), about 12 percent of Earth’s land surface. In this section you will explore the physical geography of these two countries.

Landforms

Mountains rise at the eastern and western edges of both the United States and Canada. In the west young, sharp-edged mountain ranges tower above plateaus that descend to vast, rolling central plains. Mighty rivers and enormous lakes satisfy the thirst of cities, wildlife, and natural vegetation in the two countries’ midsections. The fertile plains extend across the continent until they meet the lower, more eroded mountains in the east.
Although the Great Plains appear flat, the land slopes gradually downward at about 10 feet per mile (about 2 m per km) to the heart of the Central Lowlands along the Mississippi River.

Eastern Mountains and Lowlands
East of the Mississippi, the land rises slowly into the foothills of the Appalachian Mountains. At the edge of the Canadian plains, the Canadian Shield, a giant core of rock centered on the Hudson and James Bays, anchors the continent. The stony land of the Shield makes up the eastern half of Canada and the northeastern United States. In northern Quebec the Canadian Shield descends to the Hudson Bay.

The heavily eroded Appalachian Mountains are North America’s oldest mountains and the continent’s second-longest mountain range. They extend about 1,500 miles (2,414 km) from Quebec to central Alabama. Coastal lowlands lie east and south of the Appalachians. Between the mountains and the coastal lowlands lies a wide area of rolling hills. Many rivers cut through the Piedmont and flow across to the Atlantic Coastal Plain in the Carolinas. In the southeast the Gulf Coastal Plain extends westward to Texas.

Islands
Islands are important in the region. New York City’s Manhattan Island, at the mouth of the Hudson River, is a major United States and world economic center. Volcanic mountaintops emerging from the Pacific Ocean formed Hawaii, creating 8 major and 124 smaller islands with a land area of 6,471 square miles (16,760 sq. km). Newfoundland, Prince Edward Island, and Cape Breton Island in the east and Vancouver Island in the west are Canada’s most important islands. Near the coast of Canada’s Ellesmere Island lies the world’s largest island, Greenland. An overseas territory of Denmark, Greenland spans 840,325 square miles (2.2 million sq. km), an area about the size of Alaska and Texas combined.

A Fortune in Water
Freshwater lakes and rivers have helped make the United States and Canada wealthy. Abundant water satisfies the needs of cities and rural areas, provides power for homes and industries, and moves resources across the continent.
MAP STUDY
The United States and Canada: Physical-Political

1. Interpreting Maps Which Canadian provinces border Hudson Bay?
2. Applying Geography Skills How do the Rocky Mountains affect the rivers in the United States and Canada?
Rivers from the Rockies

In North America the high ridge of the Rockies is called the Continental Divide, or the Great Divide. A divide is a high point or ridge that determines the direction that rivers flow. East of the Continental Divide, waters flow toward the Arctic Ocean, Hudson Bay, the Atlantic Ocean, and the Mississippi River system into the Gulf of Mexico; to the west, waters flow into the Pacific Ocean. Rivers—such as the Colorado and the Rio Grande—have their headwaters, or source, in the Rockies, and many tributaries, or brooks, rivers, and streams, connect with one of these rivers. Northeast of the Rockies, the Mackenzie River—which flows from the Great Slave Lake to the Arctic Ocean—drains much of Canada’s northern interior.

The Mighty Mississippi

One of North America’s longest rivers, the Mississippi River, flows 2,350 miles (3,782 km) from its source. It begins in Minnesota as a stream so narrow that a person can jump across it.

“When I was nine years old, I jumped across the Mississippi. . . . My parents let me know this modest stream I’d taken in stride was actually one of the Earth’s great corridors, dominion of paddleboats and Huck Finn, prime mover of food, fertility, and commerce across our land.”


The Mississippi, swollen to a width of a mile and a half (2.4 km), empties into the Gulf of Mexico. The Mississippi drains 1,200,000 square miles (3,108,000 sq. km) of land, including all or part of 31 U.S. states and 2 Canadian provinces. It is one of the world’s busiest commercial waterways.

Eastern Rivers

The St. Lawrence River, one of Canada’s most important rivers, flows for 750 miles (1,207 km) from Lake Ontario to the Gulf of St. Lawrence in the Atlantic, forming part of the border between Canada and the United States. The Canadian cities of Quebec, Montreal, and Ottawa grew up along the St. Lawrence River and its tributaries and depend on these waters as a transportation resource.

In the eastern United States, a boundary called the fall line marks the place where the higher land of the Piedmont drops to the lower Atlantic Coastal Plain. Along the fall line, eastern rivers break into rapids and waterfalls, blocking ships from traveling farther inland. Many key U.S. cities, such as Philadelphia, Pennsylvania; Baltimore, Maryland; and Washington, D.C., grew up along the fall line. They offer port facilities for oceangoing trading vessels. Smaller towns along the fall line, especially
in New England and in the South, tap the water-power of the falls for textile mills and factories.

Niagara Falls is a popular tourist attraction on the Niagara River, which forms part of the border between Ontario, Canada, and New York State in the United States. Niagara Falls is also a major source of hydroelectric power for both countries. Two separate drops form the falls, the Horseshoe Falls adjoining the Canadian bank of the river, and the American Falls adjoining the U.S. bank.

**From Glaciers to Lakes**

In northern Canada glacial dams created Great Bear Lake and Great Slave Lake. Glaciers also gouged the Canadian Shield and tore at the central section of the continent, leaving glacial basins that became the Great Lakes. Lake Superior, Lake Huron, Lake Erie, Lake Ontario, and Lake Michigan have had their current shapes for only about the last 14,000 years.

Providing a link between inland and coastal waterways has been crucial to the economic development of North America. The greatest of these connections is the Great Lakes–St. Lawrence Seaway, a series of canals, rivers, and other inland waterways linking the Great Lakes with the Atlantic Ocean. The seaway helped make cities along the Great Lakes, such as Chicago, powerful trade and industrial centers. Other important inland waterways include the Gulf Intracoastal Waterway, which connects cities from Florida to Texas with the Mississippi River, and the Atlantic Intracoastal Waterway, which provides sheltered inland channels for navigation between Norfolk, Virginia, and Key West, Florida.

**Natural Resources**

Ample freshwater is only one of the many natural resources of the United States and Canada. The same geologic processes that shaped the North American landscape left the region rich in a wide variety of resources. Access to this natural wealth has helped speed the industrialization of this region.

**Fuels**

The United States and Canada have important energy resources such as petroleum and natural gas. Texas and Alaska rank first and second in oil reserves in the United States. Texas also has the greatest reserves of natural gas. Most of Canada’s oil and natural gas reserves lie in or near Alberta. Coal in the Appalachians, Wyoming, and British Columbia has been mined for more than 100 years.

**Minerals**

Mineral resources are also plentiful in the region. The Rocky Mountains yield gold, silver, and copper. Parts of the Canadian Shield are rich in iron and nickel. Deposits of low-grade iron ore exist in northern Minnesota and Michigan. Canada’s minerals include 28 percent of the world’s supply of potash (mineral salt used in fertilizers), 18 percent of its copper, 14 percent of its gold, and 12 percent of its silver.

**Timber**

Timber is vital for both countries. Forests and woodlands once covered much of the United States and Canada.
States and Canada. Today, however, forests cover less than 50 percent of Canada and about one-third of the United States. Commercial lumbering operations face the challenge of harvesting the region’s timber resources responsibly. Positive efforts to preserve the forests include planting new trees to replace those cut for lumber, cooperating to protect the 1,000 species of native animals in the forests, and preserving old-growth forests in areas set aside as national forests.

**Economics**

**Fishing**

The coastal waters of the Atlantic and Pacific Oceans and the Gulf of Mexico are important to the region’s economy. Rich with fish and shellfish, these waters are important fisheries, or places for catching fish and other sea animals. The Grand Banks, once one of the world’s richest fishing grounds, covers about 139,000 square miles (360,000 sq. km) off Canada’s southeast coast. Fishers have harvested cod from the Grand Banks for at least 500 years. As these waters were overfished, however, stocks decreased, and the Canadian government banned cod fishing in 1992.

**Catch of the Day** This fisherman earns his livelihood fishing on Lake Michigan.

**Place** Why is the Grand Banks important to Canada?
Climate and Vegetation

A Geographic View

Life Amid the Glaciers

The diversity of species on nunataks [mountains surrounded by glacial ice] takes patience to grasp. Only the showiest, such as moss campion and orange lichens, grab the eye. Wait and you might glimpse an alert wolf spider or resting butterfly. How did life reach these isolated peaks? Winds bore most pioneers over the glaciers. Plants were carried as seeds. Young spiders sailed in on strands of silk.


The ice fields of Canada’s northwestern Yukon Territory seem at first to be Arctic wastelands. Studding the glaciers, though, are craggy summits encased in glacial ice. Although temperatures there can fall below zero, mini-climates shelter an amazing variety of life forms. Similar diversity characterizes the whole of Canada and the United States. In this section you will learn about the climate regions and natural vegetation of the United States and Canada.

A Varied Region

Much of the United States and Canada experiences exactly the types of climate one might expect from the countries’ latitudes. Two thirds of Canada and the U.S. state of Alaska lie in higher latitudes and experience long, cold winters and brief, mild summers. Most of the continental United States and the southern one third of Canada lie within more temperate latitudes, where climate regions vary with elevation. Hawaii, the only non-continental U.S. state, has a tropical climate.

Guide to Reading

Consider What You Know

Think about the climate differences between the United States and Canada. Why do you think Canada is so much colder than the United States?

Read to Find Out

- Which climate zones are found in the United States and Canada?
- In what ways do winds, ocean currents, latitude, and landforms affect the region’s climates?
- What kinds of weather hazards affect the United States and Canada?
- How has human settlement affected the natural vegetation of the United States and Canada?

Terms to Know

- timberline
- chinook
- prairie
- supercell
- hurricane
- blizzard

Places to Locate

- Death Valley
- Great Plains
- Everglades
- Newfoundland
- Yukon Territory
Northern Climates

Large parts of Canada and Alaska lie in a subarctic climate zone with very cold winters and extensive coniferous forests. Two-thirds of Canada has January temperatures that average below 0°F (−18°C). In winter, temperatures can fall to −70°F (−57°C) in some places. A persistently high atmospheric pressure area over the Canadian subarctic spawns the cold winds that chill much of the central United States during the winter.

Lands along the Arctic coastline fall into the tundra climate zone. Bitter winters and cool summers in this vast expanse of wilderness make it inhospitable for most plants, and few people live there. Greenland’s tundra vegetation consists of sedge, cotton grass, and lichens. The island’s small ice-free areas have few trees, but some dwarfed birch, willow, and alder scrubs do survive. As in other northern climate areas, few people inhabit Greenland because of its harsh climate conditions.

Western Climates

From the cool, wet coast of British Columbia to the hot, dry deserts of California and the snow-capped peaks of the Rocky Mountains, the climate and vegetation patterns in the western areas of the United States and Canada vary widely. This variation in climate and vegetation is the result of the combined effects of latitude, elevation, ocean currents, and rainfall.
Marine West Coast

The interplay of ocean currents and winds with the Pacific Ranges gives the Pacific coast from California to southern Alaska a marine west coast climate. The mountains force the wet ocean air upward, where it cools and releases its moisture. As a result, more than 100 inches (254 cm) of rain soaks parts of this region each year. Coniferous forests, ferns, and mosses are common there. Southern California has a mild Mediterranean climate.

Plateaus, Basins, and Deserts

The rain shadow effect keeps the plateaus and basins that lie between the Pacific Ranges and the Rocky Mountains hot and dry. Much of the area has a steppe or desert climate. U.S. desert lands in this area, including the Great Salt Lake Desert, Death Valley, the Mojave (moh-HAH-vee) Desert, and the Chihuahuan (chee-WAH-wahn) Desert, bake in the relentless sun. Death Valley had the highest temperature ever recorded in the United States, 134°F (57°C). In the western deserts, cacti and hardy wildflowers bloom in the brief spring rains. The areas adjacent to these deserts usually experience a steppe climate with a mixture of desert scrub, grasslands, or coniferous forest, depending on latitude.

Elevation, not latitude, gives the higher reaches of the Rocky Mountains and Pacific Ranges their highlands climate. Coniferous forests cover the middle elevations of the western mountains, but
beyond the **timberline**, the elevation above which trees cannot grow, only lichens and mosses brave the ever-present cold. In late winter and early spring, a warm, dry wind called the **chinook** (shuh•NUK) may blow down the eastern slopes of the Rockies. Warming at a rate of about 1°F for every 180 feet (or about 1°C for every 99 meters) that it descends, the chinook rapidly melts and evaporates the snow at the base of the mountains.

**Interior Climates**

Far from large bodies of water that tend to moderate climate, the **Great Plains**, in the center of the continent, have a humid continental climate with bitterly cold winters and hot summers. Although western mountains do block moisture-bearing Pacific winds, the Great Plains benefit from moist winds that blow north along the Rockies from the Gulf of Mexico and south from the Arctic. The humid continental climate extends into southern Canada.

**Prairies**

In the Great Plains of the United States and Canada, **prairies**, or naturally treeless expanses of grasses, spread across the continent’s midsection. Each year, rainfall ranging from 10 to 30 inches (26 to 76 cm) waters tall prairie grasses, such as switchgrass and bluestem. Towering 6 to 12 feet (1.8 to 3.7 m) high, these grasses can grow as much as half an inch (1.3 cm) a day. In the Great Plains and the eastern United States, violent spring and summer thunderstorms called **supercells** spawn tornadoes, twisting funnels of air whose winds can reach 300 miles (483 km) per hour.

**History**

**The Dust Bowl**

The tangled roots of prairie grasses once formed dense, solidly packed layers of sod on the Great Plains. Then settlers broke up the sod to grow crops. When dry weather blanketed the plains in the 1930s, the wind eroded unprotected topsoil, reducing farmlands across several U.S. states to a barren wasteland called the Dust Bowl. The resulting economic hardships, made worse by the Great
Depression, caused mass migrations of people. Since the 1930s, improved farming and conservation methods have restored this region’s soil.

**Eastern Climates**

The humid subtropical climate of the southeast has long, muggy summers and mild winters. Deciduous forests extend as far south as Louisiana, but land has been cleared for farming along the Mississippi River. Wetlands and swamps like Florida’s Everglades shelter a great variety of vegetation and wildlife. In late summer and early autumn, hurricanes—ocean storms hundreds of miles wide with winds of 74 miles per hour (119 km per hour) or more—can pound the region’s coastlines.

A humid continental climate extends from the northeastern United States into southeastern Canada. In Canada, a band of deciduous and mixed deciduous-coniferous forestland more than 1,375 miles (2,213 km) wide sweeps from Newfoundland into the subarctic Yukon Territory. In the United States, deciduous forests grow at lower elevations in the south. In winter, much of northern North America experiences blizzards with winds of more than 35 miles per hour (56 km per hour), heavy or blowing snow, and visibility of less than 1,320 feet (402 m) for three hours or more. On the East coast hazardous winter weather may disrupt travel.

**Tropical Climates**

Within the continental United States, only the extreme southern tip of Florida has a tropical savanna climate. Hawaii, 2,400 miles (3,862 km) west of the mainland, and the Caribbean island of Puerto Rico have tropical rain forests. The wide variety of climates and vegetation in the United States and Canada has helped shape the region’s history.
Reading a Relief Map

When you plan a walk, do you prefer an easy stroll along flat ground, or do you look for a challenging hike up and down steep hills? By using a relief map, you can determine the elevation of the terrain you are going to cover.

Learning the Skill

A relief map is a special purpose map that shows variation in height, or elevation, of land areas. All elevation is measured from sea level, the average level of water in the world’s oceans. Mapmakers label this elevation level zero feet (0 m). The actual elevation of some places is shown as a negative number because they lie below sea level.

It is not possible for a relief map to show the elevation of every single inch of land. As a result, areas are grouped together. A map may show all areas with an elevation between sea level and 1,000 feet (305 m) colored green. Within that area no hill will be higher than 1,000 feet (305 m) and no valley lower than sea level.

Follow these steps to read a relief map:

- Note the title of the map.
- Study the map key. Relief maps generally use colors or shaded areas to identify elevation.
- Compare the relief map with other maps. Observe how elevation affects climate, population distribution, and economic activity in an area.

Practicing the Skill

Refer to the relief map shown here to answer these questions.

1. What is the color of the map’s highest elevation?
2. What elevation range does the color green indicate in feet? In meters?
3. What color is the elevation range of 2,000 to 5,000 feet (600 m to 1,500 m)?
4. At what elevation is the state of Mississippi?
5. What are the elevation levels as you travel west from New Jersey to Ohio?

Appalachian Region: Physical–Political

Compare the relief map of the United States and Canada on page 117 with the population density map on page 109. Then write a paragraph explaining how elevation affects population distribution.
**SECTION 1**

**The Land (pp. 115–120)**

**Terms to Know**
- divide
- headwaters
- tributary
- fall line
- fishery

**Key Points**
- Canada and the continental United States have similar landforms, shaped by similar geologic processes. Both have high, sharp mountains and dry plateaus in the west; rolling, grassy plains in the center; and lower, older mountains and coastal lowlands in the east.

- The region’s waterways, including rivers, lakes, coastal waters, and intracoastal channels, played a vital role in settling the land and continue to serve as commercial highways.

- The Continental Divide divides the region into two large drainage areas. To the east of the Divide, waters flow to the Arctic Ocean, to Hudson Bay, to the Atlantic Ocean, or to the Gulf of Mexico. To the west, they flow into the Pacific Ocean.

- Glacial movement shaped much of the North American landscape.

- The geologic factors that shaped the United States and Canada also provided the region with a wealth of natural resources.

**Organizing Your Notes**

Use a table like the one below to help you organize the notes you took as you read this section.

<table>
<thead>
<tr>
<th>Physical Feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade Range</td>
<td></td>
</tr>
<tr>
<td>Great Plains</td>
<td></td>
</tr>
<tr>
<td>Canadian Shield</td>
<td></td>
</tr>
<tr>
<td>Appalachian Mountains</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 2**

**Climate and Vegetation (pp. 121–125)**

**Terms to Know**
- timberline
- chinook
- prairie
- supercell
- hurricane
- blizzard

**Key Points**
- The region encompassing the United States and Canada experiences a great variety of climates.

- Some climate regions of the United States and Canada are influenced primarily by latitude.

- Wind, ocean currents, rainfall patterns, and elevation moderate the effects of latitude in other climate zones of the United States and Canada.

- Climatic factors cause hazardous seasonal weather patterns in the United States and Canada, including spring and summer tornadoes, and summer and fall hurricanes, and winter blizzards.

- The region’s natural vegetation reflects its climatic variety, but human interaction with the environment has greatly altered natural vegetation.

**Organizing Your Notes**

Use diagrams like the one below to organize your notes under the following headings: Climate Regions, Seasonal Weather Patterns, and Vegetation.
Critical Thinking

1. **Analyzing Information**  What geologic processes shaped much of this region?

2. **Drawing Conclusions**  Why should the United States and Canada protect their natural vegetation?

3. **Classifying Information**  On a web diagram, fill in information about the kinds of vegetation found in each of the region’s climate zones.

---

**Reviewing Key Terms**

Write the key term that best completes each sentence. Refer to the Terms to Know in the Summary & Study Guide on page 127.

1. ________ supply great quantities of fish and other sea animals to North America.

2. The warm, dry wind, or ________, melts snow at the base of the Rockies.

3. Lichens and mosses grow above the ________.

4. Spring and summer tornadoes are spawned by a violent thunderstorm called a(n) ________.

5. Farmers on the wide grasslands, or ________, of the Great Plains broke up sod to grow crops.

6. Many North American rivers have their ________, or source, in the Rocky Mountains, where a(n) ________ determines the direction of the rivers’ flow.

7. Important cities grew up along the ________, where the Piedmont drops to the Atlantic Coastal Plain.

8. A(n) ________ of the Mississippi River may be a stream or small river.

---

**Reviewing Facts**

**SECTION 1**

1. How were the Pacific Ranges formed?

2. What effect does the Continental Divide have on the direction rivers flow?

**SECTION 2**

3. What kind of climate is common in most of the United States and southern Canada?

4. Name two types of vegetation in this region.

---

**Locating Places**

The United States and Canada: Physical Geography

Match the letters on the map with the physical features of the United States and Canada. Write your answers on a sheet of paper.

1. Rocky Mountains  
2. Great Plains  
3. Appalachian Mountains  
4. Canadian Shield  
5. Great Lakes  
6. Mississippi River  
7. Hudson Bay  
8. Great Bear Lake  
9. Pacific Ranges  
10. Mackenzie River  
11. Rio Grande  
12. Great Slave Lake
Using the Regional Atlas
Refer to the Regional Atlas on pages 106–109.

1. Region  How are the eastern and western halves of the United States and Canada different?

2. Location  On the physical map, locate rivers that flow into the Mississippi. Then use the economic activity map to make a list of products that might be shipped using these rivers.

Thinking Like a Geographer
The region of the United States and Canada possesses natural resources that people depend on for survival. Choose one section of the region, and write a paragraph explaining how people depend on a natural resource in that area.

Problem-Solving Activity

Group Research Project  The flooding of the Mississippi River floodplain in 1993 caused billions of dollars worth of damage and raised questions about the wisdom of controlling the flow of major rivers with dams and levees. Should rivers be allowed to take their natural course? In your group, choose who will argue for controlling rivers and who will argue against it. Be sure to give a fair presentation of the data, including supportive evidence on the pros and cons.

GeoJournal

Expository Writing  Using the information you logged in your GeoJournal as you read, write a paragraph explaining how one of the region’s physical features affects its inhabitants. Use your textbook and Internet resources to make your explanation clear and accurate.

Technology Activity

Using the Internet for Research  Think about the effects of physical processes, landforms, and climate. Then use reliable Internet resources to find out more about one way in which life in your area is shaped by physical geography. Write a report, and share it with the class.

Self-Check Quiz  Visit the Glencoe World Geography Web site at tx.geography.glencoe.com and click on Self-Check Quizzes—Chapter 5 to prepare for the Chapter Test.

<table>
<thead>
<tr>
<th>City</th>
<th>Elevation Above Sea Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>City 1</td>
<td>0/0</td>
</tr>
<tr>
<td>City 2</td>
<td>500/152</td>
</tr>
<tr>
<td>City 3</td>
<td>700/213</td>
</tr>
<tr>
<td>City 4</td>
<td>750/229</td>
</tr>
</tbody>
</table>

Choose the best answer for the following multiple-choice question. If you have trouble answering the question, use the process of elimination to narrow your choices.

1. Given the information shown in the bar graph, which city is most likely located east of the fall line in the eastern United States?

   A  City 1  C  City 3
   B  City 2  D  City 4

To determine which city is east of the fall line, remember that the fall line is where the higher land of the Piedmont drops to the lower Atlantic Coastal Plain to the east. Eliminate those choices that do not indicate a city on the coast, near sea level.
Comparing Soils

You may think that all soil is alike, but there are many different varieties. Several factors account for soil differences. The parent rock, or the type of rock from which soil is formed, is one factor. Weathering breaks down parent rock to produce different types of soil. For example, if limestone is the parent rock, it will produce a different soil than if sandstone were the parent rock. Climate, types of vegetation, and the slope of the land surface also affect soils.

The color of the soil indicates the presence of certain minerals or other substances. Sandy soil is usually light in color. Soil rich in humus is dark in color because of the presence of decaying plant and animal matter. Red soils are colored by large amounts of iron-bearing minerals. Different types of soil are found in the United States, including mountain soils, prairie soils, river soils, glacial soils, and desert soils.

Materials

- Computers with Internet access
- Large map of your state, with counties outlined and identified
- Small plastic envelopes or bags for soil samples
- Labels for the plastic envelopes or bags
- Pushpin or thumbtacks

Procedures

In this activity, you will use the Internet and other resources to compare soils in your state and explain why differences exist among them.

1. Using the Internet, locate e-mail addresses for as many other schools throughout your state as you can. Save the e-mail addresses in your program’s address book.

2. Collect the e-mail addresses and postal addresses of your friends and relatives throughout your state.

3. Coordinate all of the addresses to ensure that there is full coverage and that counties or regions are not duplicated.

4. Send e-mail messages or handwritten notes to all your partners, asking each to send you a small soil sample of his or her area. Ask partners to identify exactly where the soil came from (for example, “from my yard,” or “from the hillside behind my house”). Explain that you are trying to identify why soil samples are different within an area. Ask that the soil samples be sent as soon as possible.
5. Ask partners to sterilize the soil in a 350° oven for about 15 minutes before sealing the cooled soil sample in a small plastic bag.

6. As soil samples arrive, put each one in a separate plastic envelope or bag. Label each envelope or bag with the name and location of the person who sent it. Using the map below, try to identify the type of soil your partners sent.

7. Research to find the characteristics of that area’s soils. Does the soil sample reflect information found in your research?

8. Using the pushpins, place each soil sample on the map in the area of its origin.

9. Describe how the location of where these soils were found affects how they are similar to or different from each other.

**Lab Report**

1. How many soil samples were collected?
2. What were some of the factors that accounted for the differences in the soils?

**Drawing Conclusions** Write a paragraph explaining how the differences in the soils collected do or do not reflect the economic activity of at least two areas of the state. Give reasons for your conclusions.

**Find Out More**

Identify a climate area in Canada or the United States, and research to find out, for example, how soils in that climate differ from each other. How has the climate affected the soil? The area’s vegetation?

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**Did You Know?** People in many parts of the world have used soil to build homes. Adobe houses are made of sun-dried bricks of clay soil and straw. Soils with about 70 percent sand and 30 percent clay can be compacted to form bricks or walls for durable rammed-earth houses.