### Unit 2: United States and Canada

#### Predicting the Future

Have students consider the following issues and topics: urban growth, globalization, global warming, and political cooperation. Then have them describe how the United States or Canada in 2025 will look, feel, or sound in relation to these issues. Remind them that predictions can turn out to be right or wrong. Other issues for students to consider include wars and conflicts, education, water management, population, environment, politics, energy, health, and technology. Organize the class into groups representing each issue. Have students research their subject and present their arguments for the future. Then, have the class decide which issue is the most or least important for the future. You may also want to encourage students to contemplate further into the future, such as changes by the year 2050, or have them consider their predictions for the next 25 years.

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**Teacher to Teacher**

![Lou Camilotto
McCutcheon High School
Lafayette, Indiana](image)
Dear Geography Teacher:

The story of the United States and Canada is one of unity and diversity. Democracy and capitalism, fueled by individual initiative, have allowed these two countries to prosper. Having said that, it is useful for students to understand the diversity found in both of these countries from their beginnings to the present day.

For example, in Canada, descendants of indigenous people called Inuit campaigned vigorously for recognition. They finally gained it in 1999 with the establishment of Nunavut, a territory with considerable autonomy. In Quebec province, French culture and language are so strong that many think the province should seek independence from the rest of Anglo-dominated Canada. For now, unity has been preserved.

In the United States, we think of ourselves as a homogenous group of “Americans,” suggesting that we are all alike. Nothing could be further from the truth. There are Native American groups that have their own lands. In any of the great U.S. cities you will find ethnic neighborhoods where Italians, Germans, Czechs, Irish, Poles, Bosnians, and others are the main group. Chinatowns often stand out with vivid displays of language and culture. In Louisiana, Cajun country is defined by language, culture, and even a flag.

The history of forced migration of Africans to the United States evokes pain, suffering, and abuse, but the descendants of enslaved African Americans have carved out an important cultural piece of our historical “pie.” Several states have witnessed massive migrations of Latinos, and no one can deny the positive role their culture has played in states such as Florida, Texas, Arizona, New Mexico, New York, and California. Of course, when we mention California, we must emphasize the increasing role of immigrants from Asia.

Thus, we have a unity based on diversity, which requires respect, equal opportunity, improvement with hard work, and a chance to participate in the American dream.
What Makes the United States and Canada a Region?

The three chapters of this unit introduce students to a cultural region that covers most of the continent of North America. The two countries share the following characteristics:

- Physical features, such as the Rocky Mountains and Great Lakes
- Vast deposits of fossil fuels and minerals
- Populations that are wealthy, literate, and ethnically diverse
- Market economies that used to be based on agriculture but are now industrial
- Challenges to overcome the effects of pollution and protect the environment

Why Study The United States and Canada? Ask: What do the United States and Canada have in common in terms of geographical, historical, cultural, and political ties? Tell students to draw a four-column table on a sheet of paper and label the columns Geographical, Historical, Cultural, and Political. Give students a few minutes to categorize things the countries have in common. Draw the same four-column table on the board. As students volunteer their answers, write them on the board. Have students add to their lists as they listen to other student responses.
Why It Matters

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.

Visual Literacy  Most of the Grand Canyon is located in Grand Canyon National Park, covering over 1 million acres (0.4 ha) in northern Arizona. Cut by the Colorado River and other forms of erosion, the 280-mile-long (451-km-long) canyon averages 4,000 feet (1,219 m) deep, reaching 6,000 feet (1,829 m) at its greatest depth. Over 1,500 plant and 355 bird species are found in the park, some of them found nowhere else in the world. A hiker descending one of the park’s trails not only passes through several types of desert climate and vegetation, but also goes back in geological time. The different layers of rock that make up the canyon walls, deposited over hundreds of millions of years, tell much about the history of how the Earth’s surface was formed.

More About the Photo

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Current Events Online
Visit events.glencoe.com to bring news and current events into your classroom. McGraw-Hill’s current events Web site features high-interest news stories with student-directed projects and activities.
UNIT 2 WHAT MAKES THIS A REGION?

The United States and Canada

**PHYSICAL GEOGRAPHY** The United States and Canada span 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 of grass. Beneath the gently rolling landscape lay dark, fertile soil that settlers eventually 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. Almost every imaginable type of climate—from tundra to desert to tropical wet—can be found within the borders of these two diverse countries.

1. **PLAINS AND PLATEAUS** Located along the Utah-Arizona border, the sandstone rock forms known as the Two Mittens attract tourists from around the world.

2. **LAKES AND RIVERS** Long rivers, such as the Fraser located in British Columbia, have played an important role in trade and industry in the United States and Canada.

3. **MOUNTAINS** The Rocky Mountains are the longest mountain range in North America, stretching from British Columbia in Canada to New Mexico in the United States.

**Activity: Location**

**Describing** Help students describe the climate and location where they live. Have them name some geographical features that distinguish their region, such as rivers and other bodies of water, mountains, plains, and deserts. Ask them to describe the climate for each season.

**Ask:** If you were writing a brochure for your local Chamber of Commerce, what aspects of climate and physical features would you emphasize? Are there physical features that might draw tourists, such as beaches, ski hills, or waterfalls? Why do you think other people might choose your region as a place to live? Have students share their observations with the class.
Teach

W Writing Support

Descriptive Writing Have students study the photos on pages 116–117. Then ask them to write descriptions of the photos in a poetic style. To help students get started, have the class brainstorm descriptive words for each photo and write them on the board. Then model poetic devices that students might use in their descriptions, such as metaphors, similes, and personification.

R Reading Strategy

Activating Prior Knowledge Have students use the photos and knowledge they already have to suggest natural resources of the United States and Canada (in addition to oil). As students suggest resources, write them on the board and ask where these resources are found.

NATURAL RESOURCES Oil is a vital resource. The Trans-Alaska Pipeline transports approximately 1 million barrels of crude oil a day across 800 miles (1,300 km) of rough Alaskan terrain to the port of Valdez in southern Alaska.

Did You Know?

• Ice Age During the Ice Age, all of Canada was covered by an ice sheet that depressed the land and sculpted landforms by moving rocks and creating countless lakes and rivers.

• Petroleum James Miller Williams is considered the father of the oil industry in Canada. He is responsible for the first oil well in North America in 1858. While looking for water in Ontario, he struck oil instead.

• Mammoth Cave Located in Kentucky, Mammoth Cave is the most extensive cave system in the world. So far, about 300 miles (480 km) have been explored. Open to visitors since 1816, for a time it was also the site of concerts given by local and visiting musicians.

• The Yukon The Yukon Territory, located north of British Columbia and east of Alaska, is a region of high mountains and plateaus. In 1896, the discovery of gold on the Klondike River led to a gold rush that lasted a few years. The area still has great mineral wealth, but its remote location and arctic climate have been a barrier to development.
North America is a land of immigrants. It is believed the first peoples, ancestors of the Native Americans, came to the region from Asia. In the 1500s, immigrants began arriving from Europe. 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. Together these groups have shaped the culture of the region.

Official Languages  According to its Constitution, Canada has two official languages: English, spoken by about 59 percent of the population, and French, spoken by 23 percent. In 1988, Canada revised the Official Languages Act of 1969, which stated that “English and French have equality of status and equal rights . . . with respect to their use in . . . communicating with or providing services to the public and in carrying out the work of federal institutions.”
ECONOMY  Today the service industry employs most of the workers in the United States and Canada. Many of these jobs are located in urban centers such as Toronto, Canada’s largest city.

CULTURE  Immigration to the United States and Canada from other areas of the world has had a dramatic effect on the cultures of the two countries. Parades celebrating these cultural roots are common throughout the region.

PEOPLE  This Cherokee woman is creating beadwork. Despite being the first peoples to inhabit the region, Native Americans were pushed from their ancestral lands by European settlers.

The People of Beringia  Exactly when people first arrived in the Western Hemisphere is still a matter of debate, despite decades of study by archaeologists, linguists, and geneticists. Most experts agree that people came across a land bridge from Asia during the last ice age, perhaps more than 30,000 years ago. However, people did not move far from the area of the Bering Sea land bridge—called Beringia—until much later. There is little evidence of any human settlements farther south until about 12,000 B.C. What is clear is that people had spread throughout most of North America and South America no later than 10,000 B.C. Linguists have attempted to classify Native American languages, but there is no agreement about whether speakers of these languages came to the Americas as separate waves of migration or split off after they arrived in Beringia.
**Skill Practice**

**Using Geography Skills** Ask: Where is the North Pole on this map? (The small cross [+] in the Arctic Ocean) Ask: Starting from the North Pole, which direction is south? (Any line curving downward, parallel to the longitude lines shown on the map, for example, 140°W)

**Reading Strategy**

**Reading a Map** Have students study the physical map. Ask: Which country has more land at higher elevations? (The United States) Continue asking other questions that give students practice in using the map key and scale and in referring to other features on the map, such as latitude, longitude, and the compass rose.

**Background: Land and Climate**

**Tornado Alley** The wide plains lying between the Appalachian Mountains and Rocky Mountains have hot summers and cold winters due to their distance from the moderating effects of the ocean. The plains also spawn the violent thunderstorms whose rains help make this area so agriculturally productive. In the summer, warm air from the Gulf of Mexico gets trapped under colder air blowing in from the west. The warm air rises, and eventually breaks through, forming a thunderstorm. These same thunderstorms also produce the most tornadoes in the world. The United States experiences an average of over 1,000 tornadoes each year. The greatest number occurs in an area called Tornado Alley, which stretches from Texas to Minnesota, with the highest concentration in Oklahoma.
Obstacles and Opportunities

The landscapes of the United States and Canada are marked by a variety of physical features that act both as obstacles and as opportunities for progress. As you study the maps and graphics on these pages, look for the geographical features that make the region unique. Then answer the questions below on a separate sheet of paper.

1. What physical features have acted as barriers to settlement in the United States and Canada?
2. What benefits has the Great Lakes—St. Lawrence Seaway System provided to the cities located along the Great Lakes?
3. What has contributed to the wearing away of the Appalachian Mountains? What predictions can be made about the future of other geographically younger mountain ranges such as the Rockies?

Did You Know?

- **Freshwater Lakes** The region of the United States and Canada has 8 of the 15 largest freshwater lakes in the world. They include Great Bear Lake, Great Slave Lake, Lake Winnipeg, and the five Great Lakes.
- **The Yellowstone Caldera** The geysers and other geothermal features in Yellowstone National Park occur because Yellowstone sits above a hot spot, or caldera, where magma is able to come close to the surface. The Hawaiian Islands were formed by a similar hot spot beneath the Pacific Ocean.
- **Ellesmere Island** At the northern tip of Canada’s Ellesmere Island is a small settlement called Alert, Nunavut, that is only 508 miles (817 km) from the North Pole. It is the most northerly place on Earth that is permanently inhabited.
- **Cape Cod and Long Island** Many well-known locations along the east coast, including Long Island, Nantucket, Martha’s Vineyard, and Cape Cod, were formed by glacial deposits less than 25,000 years ago.
Background: Current Issues

Immigration The United States and Canada both have richly diverse populations due to their history of immigration from around the world. In recent years, both countries have struggled to cope with the large number of people who want to immigrate there. Before 1980, most immigrants to Canada came from Europe or the United States. Now, most come from Asia. In the United States, more than one out of four immigrants comes from Mexico. Some immigrants enter the United States illegally. Legislators at all levels of government are trying to address the issue of illegal immigration so that the United States can keep its borders secure at the same time that it remains a land of opportunity.
Comparing Past and Present

The cultures of the United States and Canada have been impacted by the cultures of those who have settled the region. As you compare the maps on these pages, look for patterns that may provide information about the cultures of the United States and Canada today. Then answer the questions below on a separate sheet of paper.

1. What conclusions can be drawn about the European settlement of the United States and Canada? What factors contributed to these settlement patterns?
2. Which country had a greater variety of Native American groups? What factors may have contributed to this situation?
3. How may location contribute to the differences between the Native American culture groups?

**NATIVE AMERICAN SETTLEMENT PATTERNS, 1500s–1800s**

- **Culture Areas**
  - Arctic
  - California
  - Great Basin
  - Great Plains
  - Northeast
  - Southwest Coast
  - Plateau
  - Southeast
  - Southwest
  - Subarctic
  - Uninhabited

**EUROPEAN SETTLEMENT PATTERNS**

- Settled by 1700
- Settled by 1800
- Settled by 1850
- Settled by 1880
- Settled by 1910
- Uninhabited

**Critical Thinking**

**Making Inferences** Have students study the maps on this page. Ask: What might be the reason the top map only gives information on Native American culture areas up until the 1800s, and not after that time? (because by the 1800s most Native American culture areas had been or were being overtaken by European settlement)

For additional practice on this skill, see the Skills Handbook.

**Answers:**
1. Europeans settled from east to west; geographically, Europe is to the east of the United States; the last parts settled are the harshest to live in and are the hardest to reach.
2. United States; its variety of climate regions and its location in lower latitudes
3. Answers will vary. A possible answer includes: different culture groups had to learn to adapt to different climate and vegetation regions. Adapting to those differences may account for cultural differences.

**Did You Know?**

- **Native American Languages** About 300 native languages once existed in the United States and Canada. Although two-thirds of these languages survive, there are few speakers left. Native American languages have left their imprint, however, on place names such as Chicago and Massachusetts.
- **Professional Sports Teams** People in the United States and Canada share an interest in baseball, basketball, and hockey. All three professional leagues have teams in both countries. However, the two countries have separate football leagues, and even play with slightly different rules.
- **Sovereignty for Quebec** In 1995, the voters of Quebec defeated a referendum that would have set the province on the path toward independence from the rest of Canada. The vote was extremely close: 50.6 percent against independence to 49.4 percent in favor of independence.
Differentiated Instruction

English Language Learners
Make sure that students understand the meaning of the words in the Land Use map key. Review the words, pausing to ask volunteers to define them and to use them to create sentences about the map. Pay special attention to words that may be unfamiliar to students, such as livestock raising and nomadic herding.

Skill Practice

Using Geography Skills
Have students study the map on this page. Then give them time to write six questions related to economic activities whose answers can be determined from the map. Model a question, such as: Where are most of Canada’s coal deposits located? (in the Rocky Mountains)

Organize the class into teams and have a geography bee competition.

Knowledge Workers
During the 1800s, the Industrial Revolution began a wave of changes that continues today in the ways that people work. For thousands of years, most people worked in agriculture. With industrialization, factories and assembly lines created new kinds of jobs. The changes continue, and today many people are knowledge workers. Most of these highly trained workers work with technology. They are computer programmers, researchers, financial analysts, artists, editors, and many other professions. Some of these postindustrial workers are employed directly by companies, but a growing number work for themselves or for a smaller company that specializes in providing outsourced work.
Industrialization and the Environment

The United States and Canada have used their vast energy resources to industrialize their countries. Industrialization has in turn had an impact upon the environment. As you study the maps and graphics on these pages, look for the effects of industrial pollution such as acid rain upon the region. Then answer the questions below on a separate sheet of paper.

1. Why might the eastern section of the United States and Canada experience higher levels of acid rain than the extreme northern and western sections of the region?

2. Where is Canada’s greatest concentration of fossil fuel resources located?

3. Describe the process by which pollution becomes acid rain. What effect does acid rain have upon surrounding vegetation?

Critical Thinking

Determining Cause and Effect

Organize students into pairs. Have them study the “How Acid Rain Is Created” diagram and create a written explanation of each stage in the process. Then have students find photos on the Internet for each stage and attach their explanations to them. Students should also label each photo to include such information as location and the Web site on which it was found.

For additional practice on this skill, see the Skills Handbook.

Answers:
1. It is more industrialized.
2. The west, along the Rockies
3. Sulfur dioxide combines with moisture in the air, which falls as acid rain; it kills it.

Did You Know?

- **Forest Products** Canada exports more forest products than any other country. In 2005 this industry brought in more than $40 billion, with $33 billion coming from sales to the United States. Canada’s forest industry directly employs about 339,900 people, more than any other rural industry.

- **Personal Computers** Except for the small European country of San Marino, the United States has more personal computers per person than any other country: 544 per 1,000 people. Canada is eleventh, with 393 per 1,000 people.

- **Mining the Canadian Shield** Some of the world’s largest deposits of silver and zinc are located on the Canadian Shield. Intense mining and smelting in the area resulted in such a bleak terrain that U.S. astronauts once trained there before the landscape was restored.

- **Sunflowers** North Dakota, in the heart of the Great Plains, leads the United States in the production of sunflowers. The protein-rich seeds are turned into margarine and cooking oil.
Analyzing Ask: Which category shows the greatest difference between the United States and Canada? (population and density) In two class periods, have students use library and Internet sources to obtain other statistical data for each country, such as ethnic groups, languages spoken, population living in poverty, and infant mortality. Students may record this data on index cards. Then, in the next class period, have students compare and contrast their findings. Lead the class in a discussion on differences in the cultures of the United States and Canada as suggested by these statistics.
**Reading Strategy**

**Making Connections** Using the political map on page 122 in the Regional Atlas, point out the provinces of Nova Scotia, Prince Edward Island, and New Brunswick. Then point out the states of New Hampshire, New York, Virginia, and South Carolina. **Ask:** Using the Meaning and Origins Chart, what do you notice about all of these names? (They are derived from the names of English monarchs or places.) 

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**Activity: Using the Country Profiles**

**Inferring** Have students list the capital of each state, province, and territory. Then have them research and list the largest city in each state, province, and territory. Point out that often the capital and the largest city of a political unit are not the same. **Ask:** Why do you think the capital is often not the largest city? (because capitals are often centralized in a state for political or administrative reasons, whereas large cities develop for economic reasons, such as proximity to a waterway) Have students share mistaken assumptions they had about capital cities in the United States and Canada.
## Key to Ability Levels

- **BL**: Below Level
- **OL**: On Level
- **AL**: Above Level
- **ELL**: English Language Learners

## Key to Teaching Resources

- Print Material
- Transparency
- CD-ROM or DVD

### Levels

<table>
<thead>
<tr>
<th>BL</th>
<th>OL</th>
<th>AL</th>
<th>ELL</th>
</tr>
</thead>
</table>

### Resources

<table>
<thead>
<tr>
<th>FOCUS</th>
<th>Chapter Opener</th>
<th>Section 1</th>
<th>Section 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL</td>
<td>Daily Focus Skills Transparencies</td>
<td>5-1</td>
<td>5-2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL ELL</td>
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*Also available in Spanish

✓ Chapter- or unit-based activities applicable to all sections in this chapter.
### Teacher Resources

#### TEACH (continued)

<table>
<thead>
<tr>
<th>Levels</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL</td>
<td>High School Character Education</td>
</tr>
<tr>
<td>OL</td>
<td>Inclusion for the High School Social Studies Classroom Strategies and Activities</td>
</tr>
<tr>
<td>AL</td>
<td>High School Reading in the Content Area Strategies and Activities</td>
</tr>
<tr>
<td>ELL</td>
<td>Success with English Learners</td>
</tr>
<tr>
<td></td>
<td>Differentiated Instruction for the Geography Classroom</td>
</tr>
<tr>
<td></td>
<td>Literacy Strategies in Social Studies</td>
</tr>
<tr>
<td></td>
<td>Standards-Based Instruction</td>
</tr>
<tr>
<td></td>
<td>Presentation Plus! with MindJogger CheckPoint</td>
</tr>
<tr>
<td></td>
<td>TeacherWorks™ Plus</td>
</tr>
<tr>
<td></td>
<td>National Geographic Focus on Geography Literacy Teacher Guide</td>
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</tbody>
</table>

#### ASSESS

<table>
<thead>
<tr>
<th>BL</th>
<th>OL</th>
<th>AL</th>
<th>ELL</th>
<th>Section Quizzes and Chapter Tests</th>
<th>p. 55</th>
<th>p. 56</th>
<th>p. 57</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL</td>
<td>OL</td>
<td>AL</td>
<td>ELL</td>
<td>Authentic Assessment With Rubrics</td>
<td></td>
<td></td>
<td>p. 35</td>
</tr>
<tr>
<td>BL</td>
<td>OL</td>
<td>AL</td>
<td>ELL</td>
<td>ExamView Assessment Suite</td>
<td>5-1</td>
<td>5-2</td>
<td>Ch. 5</td>
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</table>

#### CLOSE

<table>
<thead>
<tr>
<th>BL</th>
<th>OL</th>
<th>AL</th>
<th>ELL</th>
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<th>p. 15</th>
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<td>OL</td>
<td>AL</td>
<td>ELL</td>
<td>Dinah Zike's Reading and Study Guide Foldables</td>
<td>p. 47</td>
</tr>
<tr>
<td>BL</td>
<td>OL</td>
<td>AL</td>
<td>ELL</td>
<td>World Geography in Graphic Novel</td>
<td>pp. 7–13</td>
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<td>BL</td>
<td>OL</td>
<td>AL</td>
<td>ELL</td>
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<td>pp. 25–26</td>
</tr>
</tbody>
</table>

✓ Chapter- or unit-based activities applicable to all sections in this chapter.

*Also available in Spanish
**Teach With Technology**

**What is Study Central™?**
Study Central™ is an interactive, online tool that helps students understand and remember content section-by-section. It can be used alongside lessons or before a test.

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### World Geography and Cultures Online Learning Center (Web Site)

<table>
<thead>
<tr>
<th></th>
<th>Student</th>
<th>Teacher</th>
<th>Parent</th>
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<tbody>
<tr>
<td>• Section Audio</td>
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<tr>
<td>• Spanish Chapter Audio Summaries</td>
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<td>• Section Spotlight Videos</td>
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<td>• Chapter Overviews</td>
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<tr>
<td>• Self-Check Quizzes</td>
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<tr>
<td>• Student Web Activities</td>
<td>●</td>
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<tr>
<td>• Vocabulary eFlashcards</td>
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<tr>
<td>• In-Motion Animations</td>
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<td>• Study Central™</td>
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<td>• Nations of the World Atlas</td>
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<td>• btw — Current Events Web Site</td>
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<td>• Beyond the Textbook</td>
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• **Timed Readings Plus in Social Studies** helps students increase their reading rate and fluency while maintaining comprehension. The 400-word passages are similar to those found on state and national assessments.

• **Reading in the Content Area: Social Studies** concentrates on six essential reading skills that help students better comprehend what they read. The book includes 75 high-interest nonfiction passages written at increasing levels of difficulty.

• **Reading Social Studies** includes strategic reading instruction and vocabulary support in Social Studies content for both ELLs and native speakers of English.

• **Content Vocabulary Workout** (Grades 6-8) accelerates reading comprehension through focused vocabulary development. Social Studies content vocabulary comes from the glossaries of Glencoe’s Middle School Social Studies texts. [www.jamestowneducation.com](http://www.jamestowneducation.com)

The following videotape programs are available from Glencoe as supplements to Chapter 5:

- **The Mighty Mississippi** (ISBN 0-76-701090-6)

To order, call Glencoe at 1-800-334-7344. To find classroom resources to accompany many of these videos, check the following pages:

- A&E Television: [www.aetv.com](http://www.aetv.com)
- The History Channel: [www.historychannel.com](http://www.historychannel.com)

The following articles relate to this chapter:


**National Geographic Society Products** To order the following, call National Geographic at 1-800-368-2728:


Access National Geographic’s new dynamic MapMachine Web site and other geography resources at:

- [www.nationalgeographic.com](http://www.nationalgeographic.com)
- [www.nationalgeographic.com/maps](http://www.nationalgeographic.com/maps)

Use this database to search more than 30,000 titles to create a customized reading list for your students.

- Reading lists can be organized by students’ reading level, author, genre, theme, or area of interest.
- The database provides Degrees of Reading Power™ (DRP) and Lexile™ readability scores for all selections.
- A brief summary of each selection is included.

**Leveled reading suggestions for this chapter:**

For students at a Grade 7 reading level:

- *America’s Wetlands*, by Frank Staub
- *Great American Deserts*, by Rowe Findley

For students at a Grade 9 reading level:

- *Saving Our Wetlands and Their Wildlife*, by Karen Liptak, Franklin Watts
Focus

More About the Photo

Visual Literacy Niagara Falls was created at the end of the last Ice Age, about 12,500 years ago. Currently, the more than 800,000 cubic feet (about 23,000 cubic meters) of water that flows over the falls every minute causes them to erode about a foot every year. Over time, water erosion has shifted the falls about 7 miles (11 km) upstream and has cut the beautiful Niagara Gorge through rock that is more than 400 million years old.

Teach

As you begin teaching this chapter, read the Big Idea out loud to students. Explain that the Big Idea is a broad, or high-level, concept that will help them understand what they are about to learn. Use the Essential Question for each section to help students focus on the Big Idea.

Essential Questions

Section 1: The Land
How has physical geography affected the development of the United States and Canada?

Section 2: Climate and Vegetation
What factors cause variations in climate and vegetation in most of the United States and Canada?

Section 1

The Land

Essential Question How has physical geography affected the development of the United States and Canada? (Both countries have coasts and waterways on which cities were established and grew into important trade and industrial centers. Abundant energy and mineral resources have also made these countries wealthy.) Point out that in Section 1 students will learn more about the influence of geography on the economies of the United States and Canada. OL
Previewsing the Region

If you have not already done so, engage students in the Regional Atlas and Country Profiles activities to help them become familiar with the general content of the region.

Section 2
Climate and Vegetation

Essential Question What factors cause variations in climate and vegetation in most of the United States and Canada? (the combined effects of latitude, elevation, ocean currents off the countries’ east and west coasts, and rainfall) In Section 2 students will learn more about the varied climate regions and vegetation of the United States and Canada.

Dinah Zike’s Foldables
Purpose This Foldable helps students compare and contrast the physical geography of the United States and Canada. The completed Foldable will help students organize their information and prepare for assessment.

Geography ONLINE
Visit glencoe.com and enter QuickPass code WGC2630C5T for Chapter 5 resources.
The Land

The United States and Canada form a geographic region of enormous physical variety and natural wealth. This wealth includes breathtaking landforms shaped by the forces of water, wind, and geology over millions of years. These landforms, such as the rugged, mountainous areas near Yellowstone National Park, have attracted adventurers and inspired writers for decades.

**Voices Around the World**

"From my cabin in Teton Valley, Idaho, . . . there is a snow-covered meadow, and beyond that a stand of bare grey aspen trees, and beyond that a spill of sun-stunned white until the Earth rears back on itself and makes the Rocky Mountains. It is a landscape that has inspired . . . a great many acts of poetry, but I measure it by its ordinary day-to-day gifts. . . . Today . . . the slipping hold of winter is still evident. . . . And flies, giddy with the promise of longer days, seep out of the logs of my cabin and fall in exhausted layers on the window-sills. Life, in all its dangerous, complicated, annoying glory, has returned to this corner of the sun-tilted world."

—Alexandra Fuller, “Yellowstone & Grand Teton National Parks,” National Geographic, November 2003
Landforms

**MAIN Idea** Water, wind, and geologic forces shape the landscapes of the United States and Canada.

**GEOGRAPHY AND YOU** What landforms are part of the area in which you live? Read to learn about the many different landforms that exist in the United States and in Canada.

As the physical map on page 120 shows, mountains rise at the eastern and western edges of the United States and Canada. In the west, young, sharp-edged mountain ranges tower above plateaus that descend to vast plains. These plains extend across the continent to meet the lower, more eroded mountains in the east.

**Western Mountains, Plains, and Plateaus**

Collisions between tectonic plates millions of years ago thrust up a series of sharp-peaked mountains called the Pacific Ranges. These ranges include the Sierra Nevada, the Cascade Range, the Coast Range, and the Alaska Range. The Alaska Range gives rise to the highest point on the continent, Mount McKinley, at 20,320 feet (6,194 m).

Like the Pacific Ranges, the Rocky Mountains grew as geologic forces heaved slabs of rock upward. The Rocky Mountains link the United States and Canada, stretching more than 3,000 miles (4,828 km) from New Mexico to Alaska. Some peaks of the Rockies soar to more than 14,000 feet (4,267 m).

Dry basins and plateaus fill the area between the Pacific Ranges and the Rockies. The Columbia Plateau in the north was formed by lava that seeped from cracks in the earth. The heavily eroded Colorado Plateau displays flat-topped mesas and the majestic Grand Canyon of the Colorado River. At its deepest, the canyon’s steep walls plunge 6,000 feet (1,829 m). The Great Basin cradles Death Valley, the lowest place in the United States. Canada’s plateaus are colder and narrower than those in the United States.

East of the Rockies, the land falls and flattens into the Great Plains, which extend 300 to 700 miles (483 to 1,126 km) across the center of the region. The Great Plains reach elevations up to 6,000 feet (1,829 m). Although the plains appear flat, the land slopes downward at about 10 feet per mile (about 2 m per km) to the Central Lowlands along the Mississippi River.

An Amazing Facts Poster

**Step 1: Collecting Facts** Small groups of students will plan a poster featuring amazing facts about the United States and Canada in each of these categories: physical geography, climate, and plant and animal life.

**Essential Question** How do the geography, climate, and plant and animal life of a region influence where people settle?

**Directions** Tell groups of students to work together to choose at least two facts for each of the categories listed in Step 1. Have groups begin by reviewing the chapter and taking notes as they find photos, maps, and other information that can help them select the facts they want to feature in their poster. Point out to students that they can choose facts that have to do with the past and future as well as the present. Next, have students do research to find further information and visuals such as photos, maps, and graphics supporting these facts. Encourage students to plan the layout and content of their poster carefully so that their facts are clearly showcased for the viewer.

**Putting It Together** Ask groups to give a brief preview of the facts they will be featuring in their posters, and invite comments from the rest of the class.

(Chapter Project continues on page 139.)
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. This stony land 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. They are the continent’s second-longest mountain range, extending about 1,500 miles (2,414 km) from Quebec to central Alabama. The Appalachians were formed by powerful upheavals within the Earth’s crust and shaped over time by ice and running water. Coastal lowlands lie east and south of the Appalachians. Between the mountains and the coastal lowlands is the Piedmont, a wide area of rolling hills. Many rivers cut through the Piedmont, flowing east across the Atlantic Coastal Plain in the Carolinas. In the southeast, the Gulf Coastal Plain extends westward to Texas.

Islands

The islands of the United States and Canada were created in part by geologic forces. Oceanic islands, such as Hawaii, are volcanic. With each volcanic eruption, lava accumulated on the floor of the ocean until it pushed through the water’s surface. Volcanic mountaintops emerging from the Pacific Ocean formed the 8 major and 124 smaller islands of Hawaii. Continental islands are un-submerged parts of the continental shelf—a shallow, underwater platform that forms a continental border. Many larger islands, such as Greenland, near the coast of Canada’s Ellesmere Island, are the continental type. An ocean territory of Denmark, Greenland is the world’s largest island at 839,599 square miles (2.1 million sq. km). Newfoundland, Prince Edward Island, and Cape Breton Island in the east and Vancouver Island in the west play important roles in Canada’s economy. New York City’s Manhattan Island, at the mouth of the Hudson River, is a major U.S. and world economic center.

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, domain of paddleboats and Huck Finn, prime mover of food, fertility, and commerce across our land. —Barbara Kingsolver, “San Pedro River: The Patience of a Saint,” National Geographic, April 2000
From a narrow stream at its source, the Mississippi River reaches a width of 1.5 miles (2.4 km) as it empties into the Gulf of Mexico. The river 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. This enormous reach makes the Mississippi one of the world’s busiest commercial waterways.

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.

Canada’s St. Lawrence River flows for 750 miles (1,207 km) from Lake Ontario to the Gulf of St. Lawrence in the Atlantic Ocean, 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 for trade.

Niagara Falls, on the Niagara River, forms another part of the border between Canada and the United States. 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. The falls are a major source of hydroelectric power for both countries.

Lakes and Other Waterways
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 filled and became the Great Lakes. Large deposits of coal, iron, and other minerals near the lakes favored the development of industries and urban growth in the area.

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 System—a series of canals, the St. Lawrence River, and other inland waterways that link the Great Lakes and the Atlantic Ocean. The seaway helped make cities along the Great Lakes powerful trade and industrial centers.

Activity: Interdisciplinary Connection

Science

Explain to students that levees are embankments that enclose a river, making it possible for the river’s level to be higher than the surrounding land. Ask: What do you think happens to the level and flow of a river contained by levees when it rains too much? What does this do to the levees? (The level rises and the water flows faster, putting pressure on the levees.)

Invite a science teacher to talk to the class about what happens when a levee breaks or overflows. Then have students do research comparing flood damage from a broken levee with flood damage from a river overflowing its natural banks. Students should direct their research to finding specific examples that illustrate why flood damage from a broken levee might be more devastating. Have students share their findings. OL AL
Natural Resources

**MAIN Idea** Abundant natural resources have made the United States and Canada wealthy, but these resources and the areas in which they are found need protection.

**GEOGRAPHY AND YOU** What natural resources are important to activities in your everyday life? Read to learn about the vital natural resources of the United States and Canada.

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 industrialization.

**Fossil Fuels and Minerals**

The United States and Canada have important energy resources, such as petroleum and natural gas. Texas and Alaska rank first and second in petroleum reserves in the United States. Texas also has the greatest reserves of natural gas. Most of Canada’s petroleum 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.

Coal, petroleum, and natural gas are forms of fossil fuels. Such fuels were formed in the Earth from the buried plant and animal remains of a previous geologic time hundreds of millions of years ago. Fossil fuels must be conserved because they are nonrenewable, which means they cannot be replaced naturally in a short period of time. Currently there is much interest in finding new sources of fossil fuels in North America, in Alaska for example, without disrupting the natural environments in which they are found.

Mineral resources are also plentiful. The Rocky Mountains yield gold, silver, and copper. Parts of the Canadian Shield are rich in iron and nickel. Iron ore exists in northern Minnesota and Michigan. Canada’s minerals include 33 percent of the world’s production of potash (a mineral salt used in fertilizers), 4 percent of its copper, 4 percent of its gold, and 5 percent of its silver. Conservation and land preservation are important issues for today’s mining industry.

Like fossil fuels, mineral resources are nonrenewable and could become depleted. Because mining involves heavy equipment, uses large quantities of water, and moves a great deal of rock and other natural materials, it can damage land, water, and air systems. In the past, people did not pay a great deal of attention to preserving the environment while mining. Today, the challenge for mining companies in the United States and Canada is finding ways to remove and process minerals and metal resources with the least disruption to surrounding ecosystems.

One aspect of these efforts involves restoring land used in mining when mining operations in a particular area have finished. This reclaimed land can then be used for activities such as wildlife parks, tree farms and orchards, public hunting and fishing areas, and grazing livestock.

**Caption Answer:**

by restoring land after mining operations have finished

**Additional Support**

Activity: Economics Connection

**Analyzing** Explain to students that oil drilling in the Arctic National Wildlife Refuge (ANWR) and elsewhere in Alaska has sparked intense debate in U.S. politics. **Ask:** What arguments might be made against drilling for oil in the ANWR? *(preserve wildlife, natural beauty)* What arguments might be made in favor of drilling there? *(need to reduce reliance on foreign sources of oil)* Have students use the Internet to find materials expressing either point of view. The materials might be news articles with quotes from individual proponents of either view, or Web sites of organizations. Encourage students to find articles reporting the most recent developments in the debate as well as older materials and to analyze how the debate has changed over time.
Timber and Fishing

Timber is a vital resource for the United States and Canada. Forests and woodlands once covered large expanses of both countries. Today, however, forests cover about 34 percent of Canada and only about 33 percent of the United States. Commercial lumber operations face the challenge of harvesting the region’s precious timber resources responsibly.

Trees are a renewable resource, but only if people take steps to protect forests and the ecosystems they sustain. Positive efforts to preserve forests include replanting trees to replace those cut for lumber, cooperating to protect the 1,000 species of native forest animals, and preserving old-growth forests.

The coastal waters of the Atlantic and Pacific Oceans and the Gulf of Mexico have been essential to the region’s economy. Rich with fish and shellfish, these waters were 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 of Canada’s southeast coast. In recent years, overfishing has caused fish stocks to decrease rapidly, leading

Vocabulary

1. Explain the significance of: divide, headwaters, tributary, fall line, fossil fuel, fishery, aquaculture.

Main Ideas

2. Explain how each of the following factors—water, wind, and tectonic forces—has influenced landscapes in the United States and Canada.
3. What types of natural resources have made the United States and Canada wealthy? Why do such resources need protection? What efforts have been made to preserve forests in the United States and Canada?
4. How are lakes and rivers important to economic development in the United States and Canada? On a sheet of paper, fill in a chart like the one below that lists examples of each for both countries.

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>Canada</th>
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<tr>
<td>Lakes</td>
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<tr>
<td>Rivers</td>
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Critical Thinking

5. Answering the Essential Question: Explain how the fall line in the eastern United States influenced economic development in the region.
6. Making Inferences: Why is it in the best interest of industries to use natural resources responsibly?
7. Analyzing Visuals: Study the line graph above. In which year did the United States produce the largest amount of fish? How much less did Canada produce during that same year?
8. Expository Writing: Write a paragraph describing the effects of a physical process, such as weather or gravity, on the flow of rivers in the United States and Canada.

Close

Determining Importance

Ask: Why is the Great Lakes-St. Lawrence Seaway System important to both Canada and the United States? (It helped make the Great Lakes area a center for trade and industry.)

Answers

1. Definitions for the vocabulary terms are found in the section and the Glossary.
2. Water and wind: eroded Appalachian Mountains; tectonic forces: created Hawaiian Islands, the Rockies, and the Appalachian mountains.
3. Coal, petroleum, natural gas, various minerals, timber and fish; Many resources are nonrenewable, and some renewable resources are becoming depleted too quickly; Replanting trees and saving old growth forests.
4. Answers will vary but should note the importance of the Great Lakes, St. Lawrence River, and Mississippi River.
5. Waterfalls and rapids occur along the fall line—the point where the higher land of the Piedmont drops to the lower Atlantic Coastal Plain. The energy produced from these waterfalls was harnessed and used to power mills and factories. U.S. cities also developed along the fall line to take advantage of the natural ports.

6. Answers will vary, but may include: it earns them goodwill, it saves costs, if they run out of natural resources they have to find new ways of conducting business.
7. 2003; 263 thousand tons.
8. Students’ paragraphs should demonstrate an understanding of the physical geography of the United States and Canada.
Why Geography Matters

Focus
Introducing the Feature

Tell students that for most of its long history, people in New Orleans were more concerned with protecting themselves from flooding from the Mississippi River, not hurricanes. Point out that the levees that broke during Katrina were not the ones holding back the river, but Lake Pontchartrain, north of the city.

Teach

Differentiated Instruction
Gifted and Talented Have students compare Katrina to other hurricanes during the 2005 Atlantic season. Students should research the 12 other hurricanes at the library or on the Internet, noting their strength, what areas were affected, and cost of damage. Have students present their research on a chart. Charts should include the following categories: category (strength), area affected, and cost of damage.  

Additional Support

Visual Literacy As Katrina approached New Orleans, researchers at Louisiana State University were tracking the storm. As early as the year 2001, they had been working with computer models that showed New Orleans could be flooded with up to 11 feet (3.4 m) of water if a storm like Katrina hit the area. Because of this prediction, the researchers were beginning to get the attention of the authorities. On August 27, 2005 the computer models showed that the worst-case scenario was about to happen. Researchers alerted state and local authorities, as well as the news media. Although some agencies took them seriously, it was too late to avert disaster.

Awful Aftermath

Disaster A record-breaking 26 named tropical storms, including 13 hurricanes, formed during the 2005 Atlantic hurricane season. Katrina, Rita, and Wilma devastated the Gulf Coast with destructive winds, mountainous waves, torrential rains, storm surges, and tornadoes. After Katrina’s storm surge breached the levees, 80 percent of New Orleans flooded. Along the coast, whole towns were wiped out. The storm’s effects were felt as far north as Ontario, Canada.

What was the cost of Katrina? Katrina was the most destructive and the costliest natural disaster in the history of the United States, with property damage estimates of $75 billion. To clean up the debris and toxins and to rebuild will cost billions more.

More About the Photo

Gulfport, Mississippi, woman outside her home
Chapter 5

Awesome Power
Katrina was born from a cluster of thunderstorms near the Bahamas. Like other hurricanes, Katrina formed from high humidity, light winds, and water temperatures of at least 80°F (27°C). Katrina became the largest hurricane of its strength ever to hit the United States. With 125 mph winds, gusting to 215 mph, and a 34-foot (10.4-m) storm surge, Katrina had the energy of 10,000 nuclear bombs.

What was the human toll? Thousands were left battered, displaced, and homeless. The official death toll was 1,383, but months later, more than 4,000 people were still unac-counted for. For more information, visit Beyond the Textbook/Hurricane Katrina at glencoe.com.

THINKING GEOGRAPHICALLY

1. Environment and Society Conduct research to learn how individuals and communities prepared for Katrina. Then create a multimedia presentation detailing your findings.

2. Human Systems Why might people not want to leave their homes before a hurricane hits? Why might people choose to rebuild homes in areas often affected by hurricanes?

How Hurricanes Are Classified

<table>
<thead>
<tr>
<th>Category</th>
<th>Wind Speed</th>
<th>Storm Surge (above normal tide)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>74–95 mph</td>
<td>4–5 feet</td>
</tr>
<tr>
<td>2</td>
<td>96–110 mph</td>
<td>6–8 feet</td>
</tr>
<tr>
<td>3</td>
<td>111–130 mph</td>
<td>9–12 feet</td>
</tr>
<tr>
<td>4</td>
<td>131–155 mph</td>
<td>13–18 feet</td>
</tr>
<tr>
<td>5</td>
<td>above 155 mph</td>
<td>above 18 feet</td>
</tr>
</tbody>
</table>

Source: Saffir-Simpson Hurricane Scale

READING STRATEGY

Identifying Ask: What conditions must be present for a hurricane to form? (Clusters of thunderstorms, high humidity, light winds, and warm seawater temperatures.)

Critical Thinking Making Inferences Tell students that annually, this is the period of greatest storm activity, encompassing 97 percent of all tropical storm activity in the Atlantic.

Assess/Close Summarizing Ask: What are some of the ways a hurricane causes destruction? (Destructive winds, mountainous waves, torrential rains, tornadoes, and flooding)

Answers

1. Presentations will vary but should discuss evacuation plans, early warning systems, flood walls, and levees.

2. Answers will vary but may include:
   - People may have pets they cannot take with them; they may not have transportation; they may fear their home will be looted if they leave; they may be curious to see what a hurricane is like; they have jobs in the area; the area is a nice place to live; it is too much effort to move.
Chapter 5 Section 2

Climate and Vegetation

Diversity of climate and vegetation characterizes the region of the United States and Canada. Conditions in this vast region include the wet and dry seasons of the southern United States, the bitter cold of high-latitude areas, the radically changing seasons of the interior regions, and the cool, wet climates of the Pacific Coast.

**Voices Around the World**

“Off the west coast of British Columbia’s Vancouver Island, Bob Van Pelt tramped ahead across a smaller isle named Meares. We were in woods as old, quiet, green, and wet as a forest can be. Even the air felt soaked. It was hard to tell how much of the moisture came from the chilly rain, how much was fog, and how much was steam rising off the burly figure of a bearded Van Pelt, also known as Big Tree Bob. . . . When we reached a giant that the locals call Big Mother, Van Pelt . . . took precise measurements . . . and announced that this western red cedar would probably rank among the ten largest known on the continent.”


Guide to Reading

**Essential Question**

What factors cause variations in climate and vegetation in most of the United States and Canada?

**Content Vocabulary**

- hurricane (p. 139)
- chaparral (p. 139)
- prairie (p. 140)
- supercell (p. 140)
- timberline (p. 141)
- chinook (p. 141)
- blizzard (p. 142)

**Academic Vocabulary**

- distinct (p. 139)
- methods (p. 141)
- visibility (p. 142)

**Places to Locate**

- Everglades (p. 139)
- Death Valley (p. 139)
- Great Plains (p. 140)
- Newfoundland (p. 142)
- Yukon Territory (p. 142)

**Reading Strategy**

Organizing Complete a graphic organizer similar to the one below by listing the factors that contribute to the varying climate and vegetation found in the northern areas of the United States and Canada.

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**Resource Manager**

**Reading Strategies**

- Teacher Edition: Outlining, p. 139
- Additional Resources: Guided Reading 5-2, URB, p. 22
- RENTG, pp. 40–42
- World Geo. in Graphic Novel, pp. 7–13

**Critical Thinking**

- Teacher Edition: Making Inferences, p. 140

**Differentiated Instruction**

- Teacher Edition: English Learners, p. 142
- Additional Resources: Reteaching Act., URB p. 15
- Graphic Organizer Trans., pp. 25–26

**Writing Support**

- Teacher Edition: Expository Writing, p. 141

**Skill Practice**

- Teacher Edition: Comparing Maps, p. 140
- Additional Resources: Daily Focus Skills Trans. 5-2
- Map Overlay Trans. 2, 2-2, 2-3
- Reinforcing Skills Act., URB p. 17
**Southern Climates**

**MAIN Idea** Location near the coast, as well as prevailing wind patterns, results in the warm and wet climates and warm and dry climates of the southern United States.

**GEOGRAPHY AND YOU** Have you ever been at the beach and experienced warm winds blowing off the water? Read to learn how the Atlantic Ocean and the Pacific Ocean influence climate in some parts of the United States.

Subtropical, tropical, desert, and Mediterranean climates are found primarily in the southern United States. The climate map on page 140 shows that these climate zones are part of an area that extends from about 25°N to about 40°N.

**Warm and Dry Climates**

The humid subtropical climate of the Southeast is rainy with long, muggy summers and mild winters. Because the Southeast borders a major source of water—the Atlantic Ocean—there is no dry season. 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.

**An Amazing Facts Poster**

**Step 2: Preparing the Poster** Small groups of students prepare their posters on amazing facts about the United States and Canada in the categories of physical geography, climate, and plant and animal life.

**Directions** Write the categories of facts on the board. Remind students that their group’s poster should present at least two amazing facts for each category. Give groups time to make final choices on the content and layout of their poster and to gather the materials they need.

**Putting It Together** Have groups complete their posters. Ask volunteers to tie in the Big Idea of the section with one of the facts they chose to present. For example, students might present an amazing fact about climate and explain how location and landforms affect that climate.

**Teach**

**Reading Strategy**

**Outlining** Have students create an outline to summarize the information about southern climates. Students should use the four climate types (subtropical, tropical, desert, and Mediterranean) as the main headings of the outline. Tell students to make sure their outlines include examples of places that have that type of climate and whether it is wet or dry.

**Caption Answer:** They are both warm climate regions. One is very wet and the other very dry.

**READING Check** Answer: humid subtropical, tropical wet, steppe or desert, and Mediterranean
CHAPTER 140
Unit 2
The United States and Canada: Climate Regions

Northern Climates

MAIN Idea Variations in climate and vegetation in most of the United States and Canada are the result of the combined effects of latitude, elevation, ocean currents, and rainfall.

GEOGRAPHY AND YOU Have you ever experienced a tornado? Read to learn how the variation in climate in the region’s interior can result in violent weather phenomena.

Most of the contiguous United States and the southern one-third of Canada—from about 40° N to 50° N—experiences variations in climate and vegetation. The area’s climate ranges from hot and humid to cool and wet.

Interior Climates

Far from large bodies of water that tend to moderate climate, the Great Plains, in the center of the continent, has a humid continental climate with bitterly cold winters and hot summers. Although western mountains block moisture-bearing Pacific winds, the Great Plains benefits from warm, moist winds that blow north along the Rockies from the Gulf of Mexico and cold, moist winds that blow south from the Arctic. The climate map above shows that a humid continental climate extends into southern Canada. Such a climate also extends from the northeastern United States into southeastern Canada.

Prairies, naturally treeless expanses of grasses, spread across the Great Plains of 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 often spawn tornadoes, twisting funnels of air with winds that can reach 300 miles (483 km) per hour.

Differentiated Instruction

Planning a Climate-Conscious Attraction

Objective: To plan a tourist attraction taking climate into account.

Focus: Have students plan an attraction for a U.S. or Canadian location that has a climate region different from that found locally.

Teach: Tell students to use the four questions in the worksheet to help direct their plans.

Assess: Evaluate student plans.

Close: Have students share their concepts and discuss results.
Coastal Climates

The interplay of ocean currents and westerly winds with the Pacific Ranges gives the Pacific coast from northern California to southern Alaska a marine west coast climate. The mountain barrier forces the warm, wet ocean air upward, where it cools and releases moisture. As a result, parts of this region receive more than 100 inches (254 cm) of rain each year. Winters are overcast and rainy. Summers are cloudless and cool. Ferns, mosses, and coniferous forests grow here.

Activity: Collaborative Learning

Determining Cause and Effect Ask: What were the human and natural causes of the Dust Bowl? (human: settlers broke up sod to grow crops; natural: dry weather and winds eroded topsoil) What effect did the Dust Bowl then cause on humans living in it? (migration) Organize the class into groups, and have each group find or create visuals about causes and effects of the Dust Bowl to present to the rest of the class. The visuals may be time lines, maps, charts, artwork, or photographs (particularly those of Dorothea Lange). Instruct students to prepare index cards with information about each visual to refer to as they present to the class.

Additional Support

Teacher Tip

Collaborative Learning
This activity requires students to do research, write, and illustrate. It allows students with different levels of skills and intelligence to work together. As you form groups, consider the needed skills and choose students accordingly.
High-Latitude Climates

**MAIN Idea**

Parts of the United States and Canada are located in the high latitudes and experience a harsh, subarctic climate.

**GEOGRAPHY AND YOU**

Think about the coldest temperatures you have experienced. Read to learn about the coldest temperatures in North America.

Large parts of Canada and Alaska lie in the high latitudes and have a subarctic climate with frigid winters. Winter temperatures can fall to \(-70^\circ F\) (\(-57^\circ C\)) in some places. A high atmospheric pressure area that lingers over the Canadian subarctic spawns the cold winds that chill much of the United States during the winter.

**Just How Cold Is It?**

<table>
<thead>
<tr>
<th>City</th>
<th>Average Number of Days Below 32°F/0°C</th>
<th>Average Winter Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago, Illinois</td>
<td>132</td>
<td>25°F/–3°C</td>
</tr>
<tr>
<td>Yellowknife, Northwest Territories</td>
<td>224</td>
<td>–10°F/–23°C</td>
</tr>
</tbody>
</table>

Source: www.weatherbase.com

Many parts of northern North America experience winter **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.

The vegetation map on page 141 shows that a band of coniferous and mixed deciduous and coniferous forests sweeps from **Newfoundland** into the subarctic **Yukon Territory**. Lands along the Arctic coast 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. Along the coasts of Greenland, sparse 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 scrub do survive. As in other northern areas, few people inhabit Greenland because of its harsh climate.

The interior parts of Greenland have an ice cap climate. This type of climate is characterized by layers of ice and snow, often more than 2 miles (3 km) thick, that constantly cover the ground. The only form of vegetation that can survive here is lichens.

**Answers**

1. Definitions for vocabulary terms are found in the section and the Glossary.
2. There is no dry season in the southeastern United States due to its location along the coast. Florida is the only exception. The rain shadow effect creates a desert west of the Rockies.
3. **Deciduous**
4. Subarctic, tundra and ice cap climates are home to coniferous, mixed coniferous and deciduous, tundra, and ice cap vegetation regions.
5. **U.S.**: tropical rain forest, tropical grassland, Mediterranean scrub, desert scrub and waste, deciduous forest, tropical wet, tropical dry, desert, Mediterranean, humid subtropical; **Canada**: tundra, ice cap, subarctic; **Both**: temperate grassland, mixed forests, coniferous forests, steppe, humid continental, highland, subarctic
6. It generally makes it more humid, and unlikely to be a dry climate
7. Pacific winds bring cool cloudless summers and overcast rainy winters. Arctic winds bring inhospitable winters and cool summers.
8. By making sure the soil was held in place by a good root system or having wind breaks to prevent erosion
9. To the west of the Rockies is a band of dry climate.
10. Students’ paragraphs should demonstrate an understanding of the human-environment relationship.
**VISUAL SUMMARY**

**A FOSSIL FUELS**
- Petroleum and natural gas deposits in Texas, Alaska, and Alberta
- Coal mined in Appalachian Mountains, Wyoming, and British Columbia for more than 100 years
- Issues of using fossil fuels while protecting the environment

**B CANADIAN SHIELD**
- Located east of the Canadian plains
- Rocky core centered on the Hudson and James Bays
- Subarctic climate with coniferous forests

**C TIMBER AND FISHING**
- Timber is important for the region, but lumber operations face the challenge of harvesting trees responsibly.
- Coastal waters are home to fisheries, but some areas have been overfished.

**D GREAT LAKES**
- Five lakes created by movement of glaciers
- Deposits of coal and iron fueled industrial development
- Linked to the Atlantic Ocean by the St. Lawrence Seaway

**E APPALACHIAN MOUNTAINS**
- Extend from Quebec to central Alabama
- North America’s oldest mountains shaped over time by ice, wind, and running water
- Midlatitude climates with coniferous and deciduous forests

**F ROCKY MOUNTAINS**
- Stretch from New Mexico to Alaska, linking the United States and Canada
- Young mountains created through tectonic activity
- Highland climate varies with elevation

**G MISSISSIPPI RIVER**
- Headwaters in Minnesota and mouth in Louisiana
- Drains all or part of 31 U.S. states and 2 Canadian provinces
- One of the world’s busiest commercial waterways

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**Hands-On**

**Chapter Project**

**Step 3: Wrap-Up**

Synthesizing  
Review the Visual Summary with students, having them locate each of the letters on the map. **Ask:** How is the information under letters A and C different from that under the other letters? **Letters A and C have to do with natural resources and issues associated with their use, while the other letters deal with physical features.** Ask students to use what they have learned to give information on a physical feature for letters A and C, and on natural resources and their use for the other letters.  

Locating  
Have students note which physical features on the map cross country borders.

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**An Amazing Facts Poster**

**Step 3: Presenting the Poster**  
Small groups of students synthesize what they have learned in Steps 1 and 2 in presentations of their amazing facts posters.

**Directions**  
Draw a three-column chart on the board, with the columns labeled “Physical Geography,” “Climate,” and “Plant and Animal Life.” As groups present, write in the facts from their posters and encourage the rest of the class to direct questions to the presenting group.

**Putting It Together**  
Review the facts in each category with the class. Ask students how the facts relate to the Big Ideas for the chapter. Finally, have each student write an entry in their journal on the facts they found most intriguing.
CHAPTER 5

ASSESSMENT

TEST-TAKING TIP

Tests are generally constructed to avoid a string of correct answers that are letters in alphabetical order. If you find that you have a lot of answers that are letters in alphabetical order, go back and check your work.

STANDARDIZED TEST PRACTICE

Reviewing Vocabulary

Directions: Choose the word or words that best complete the sentence.

1. At the ______ are rapids and waterfalls that blocked ships from traveling farther upstream.
   A Piedmont
   B coastal plain
   C Appalachian Mountains
   D fall line

2. ______ were formed in the Earth millions of years ago and can be burned for energy.
   A Renewable resources
   B Minerals
   C Fossil fuels
   D Mountains

3. Thunderstorms that can cause tornadoes are ______.
   A hurricanes
   B supercells
   C prairies
   D cold fronts

4. Trees cannot grow above ______.
   A the timberline
   B the fall line
   C latitude lines
   D boundaries

Reviewing Main Ideas

Directions: Choose the best answers to complete the sentences or to answer the following questions.

Section 1 (pp. 130–135)

5. Why is it especially important to conserve fossil fuels?
   A They are nonrenewable.
   B People do not understand how to find them.
   C People do not know how to use them.
   D The government owns all the sources.

6. As commercial fishing has declined, what activity has taken its place?
   A agriculture
   B lumbering
   C aquaculture
   D conservation

Section 2 (pp. 138–142)

7. The highest temperature ever recorded in the United States was in ______.
   A the Florida Everglades
   B Death Valley
   C Phoenix, Arizona
   D Las Vegas, Nevada

8. The interior parts of ______ have an ice cap climate.
   A Alaska
   B Yukon Territory
   C Northwest Territories
   D Greenland

Answers, Analyses, and Tips

Reviewing Vocabulary

1. D Students should notice the correlation between waterfalls and fall line.

2. C Answers B and D can be eliminated since neither mountains nor most minerals can be burned for energy. Students should know that renewable resources can be replaced, while fossil fuels, which formed over millions of years, cannot.

3. B A prairie is not a weather system. Cold fronts are usually preceded by rain, but are not thunderstorms. Of these choices, only hurricanes and supercells are storm systems. Students should know that hurricanes form over the oceans while tornadoes form over land.

4. A The key word above in this question relates to height. Fall line is a distracter that students should easily eliminate. Lines of latitude are not representative of height. Attentive students may note the correlation between “trees,” “timber,” and “timberline.”

Reviewing Main Ideas

5. A Students should understand the difference between renewable resources, which can be replaced over a short period of time, and nonrenewable resources, like fossil fuels, which are formed over millions of years.

6. C This question asks for an activity that replaces commercial fishing, so the correct answer should also be water-related. Students can use their knowledge of the chapter, or use word parts to associate the prefix aqua- with water, and determine that aquaculture is the correct answer.

7. B This question presents a challenge because three of the four choices are locations in the southwest United States, which frequently experiences high temperatures.
Critical Thinking

9. Aside from latitude, what other factor greatly influences climate in North America?
   A. trees  B. grasslands  C. large landforms  D. rivers

   Base your answer to question 10 on the map and on your knowledge of Chapter 5.

10. What type of climate dominates the extreme southeastern United States?
    A. tropical dry  B. humid subtropical  C. humid continental  D. subarctic

   Need Extra Help?
   | If you missed questions . . . | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
   | Go to page . . .               | 133| 134| 140| 141| 134| 135| 139| 142| 139| 139| 145| 134| 133 |

Critical Thinking

9. C. The text describes how landforms affect climates. Answers A and B are incorrect because tree and grassland growth are influenced by climate, but do not affect climate. Answer D is also incorrect since river volume due to rainfall and snowmelt is affected by climate, but does not influence climate.

10. A. Students may answer B, since the humid subtropical climate dominates most of the southeastern United States. But the extreme southern tip of Florida has a tropical dry climate.

Document-Based Questions

Directions: Anayze the document and answer the short-answer questions that follow the document.

This excerpt discusses mountaintop mining in the Appalachians.

Coal miner.

Those words may conjure the image of a man with a light on his helmet and a pick in his hand. But more than two-thirds of this country’s coal comes from surface mines—strip mines, or in their latest, largest incarnation, mountaintop removal mines.

Instead of tunneling into a mountain and hauling out its coal, strip miners move chunks of mountain out of the way until the coal is at the surface.

In mountaintop removal mining—just like it sounds—the mountaintop is pulverized to get at the coal. Begun in West Virginia and Kentucky in the late 1960s, the pace of mountaintop removal has picked up in the past decade as demand for coal has grown with the rise in the cost of other fuels. And with the increase in mountaintop removal has come greater outcry about the effects of the practice. . . .

Opposition groups blame strip mining and the clear-cutting that precedes it for flooding. They say it damages wildlife habitat. They worry about sludge ponds, filled with the liquid waste created in the coal-cleaning process. . . .


11. How does strip mining differ from the traditional practice of tunneling into the mountain?

12. According to its opponents, what environmental problems are caused by the practice of mountaintop removal mining?

Extended Response

13. Exploring the Big Idea

Describe the effect that lakes and rivers have had upon the economic development of the United States and Canada.