PHYSICAL GEOGRAPHY

In this unit, you will learn about physical geography — the study of Earth’s surface features. These features provide the setting for the human-environmental interactions and for the human geography that you will learn about later in this book.

Chapter 5. A World Gazetteer: A Look at the Seven Continents. A gazetteer is a reference book with geographical information. In this gazetteer, you will learn about the primary physical features of Earth’s seven continents, including the world’s most important mountains, deserts, lakes and rivers. You will also learn about physical regions.

Chapter 6: Processes Shaping Planet Earth. In this chapter, you will learn about Earth’s lithosphere (crust), hydrosphere (oceans), and atmosphere. You will also learn about the physical processes shaping Earth’s surface, including tectonic plate motion and erosion.

Chapter 7: People and Nature. In this chapter, you will learn about human-environmental interactions: how people adapt to their physical environment, and how they also modify and affect their physical environment.
A WORLD GAZETTEER:  
A Look at the Seven Continents

- Geography 9 The student understands the concept of region as an area of Earth's surface with related geographic characteristics.
  - Geography 9(A) Identify physical and/or human factors such as climate, vegetation, language, trade networks, political units, river systems, and religion, that constitute a region.
  - Geography 9(B) Describe different types of regions, including formal ... regions.
- Social Studies Skills 21(B) Locate places of contemporary geopolitical significance on a map.
- Social Studies Skills 22(C) Use geographic terminology correctly.

Geographers are very interested in how the location and physical features of a place affect physical processes and human activities taking place there. In fact, each part of our planet has its own unique features not found anywhere else.

In this chapter, you will review some of the unique characteristics that make each location a distinct place. You will explore the main physical features of Earth's seven continents, including its major mountain ranges, deserts, and bodies of water.

**AN ESSENTIAL QUESTION**

- What physical features would you find on a tour of the world's continents?

**IMPORTANT IDEAS**

A. Earth has five oceans — the Atlantic, Pacific, Indian, Arctic, and Southern.*

B. There are seven continents on Earth — Africa, Antarctica, Asia, Australia, Europe, North America, and South America. Each has its own unique blend of physical features, including mountains, deserts, plains, valleys, forests, and bodies of water.

D. Latitude, landforms, and nearness to bodies of water greatly affect climate.

E. Landforms, soil, and climate greatly affect the plants and animals that can be found in each place.

*Some geographers question whether the Southern Ocean should be considered a separate ocean.
### Geographic Terminology in This Chapter

- Continents
- Sahara Desert
- Savanna
- Tropical Rainforest
- Tundra
- East Asia
- Subcontinent
- Peninsula
- Himalaya Mountains
- Regions
- Physical Region
- Formal Region

### Earth’s Seven Continents

Our planet has seven large landmasses that geographers call continents. Let’s examine the main physical features of each one.

### North America

**North America** is the world’s third largest continent in area. Located in the Western Hemisphere, it stretches from near the North Pole southwards almost to the equator. From east to west, it covers the territory between the Atlantic and Pacific Oceans.

**Central America.** North America is bordered by the Atlantic, Pacific, and Arctic Oceans. South of Mexico, the land narrows into Central America. **Central America** connects North America to South America. Although Central America contains far less than 1% of the Earth’s surface, it has 7% of the world’s biodiversity — various plants and animals.

**West Indies.** Northeast of Central America are the **West Indies**, made up of a large number of islands in the Caribbean Sea.
Physical Features

★ Mountains. Major mountain ranges found in North America include the Rocky Mountains to the west and the Appalachian Mountains to the east. The Rocky Mountains extend northward into Canada and southward into Mexico.

★ Bodies of Water. The St. Lawrence River separates parts of the United States from eastern Canada. The Mississippi River drains much of the United States. The Great Lakes — Lake Superior, Lake Michigan, Lake Huron, Lake Erie, and Lake Ontario — form the largest system of fresh water on Earth. The Rio Grande separates the United States from Mexico. The Panama Canal, located in Central America, connects the Atlantic and the Pacific Oceans.

★ Plains. West of the Mississippi River is a region known as the Great Plains, containing some of the world’s most productive farmland.

★ Rainforests. Much of Central America and the islands of the West Indies have warm, humid climates and rainforests.

APPLYING WHAT YOU HAVE LEARNED

Use the outline map to label each of the following:

1. Canada
2. Great Lakes
3. Mexico
4. Mississippi River
5. Rio Grande
6. Rocky Mountains
7. Appalachian Mountains
8. West Indies
9. Atlantic Ocean
10. Pacific Ocean
11. Gulf of Mexico
12. Central America
South America is located in the Western Hemisphere south of Central America. South America is the fourth largest continent in area. Stretching over 7,000 miles in length, it lies between the Atlantic and Pacific Oceans.

Physical Features

★ Mountains. The Andes Mountains are among the highest in the world. They extend over 4,500 miles in the western part of South America. The Andes were once the basis of the Inca Empire.

★ Grasslands and Plains. Mountains and poor soils make much of South America's land unproductive. One exception is the pampas of Argentina and Uruguay. The pampas provide large areas of fertile soil for growing crops and grazing cattle.

★ Rainforests. Rainforests are located on the east coast of Central America and the northern part of South America. They have warm, humid climates. The Amazon Rainforest, the world's largest tropical rainforest, is in Brazil. Each year, part of the rainforest is being cut down (deforestation) to provide land for ranches and farms.

★ Bodies of Water. The Amazon River is the second longest river in the world. In addition, South America has the Orinoco River and the Rio de la Plata. A large percentage of South America's population lives on or near these river systems.

★ Climate. Much of South America is warm because it lies near the equator. However, because of its mountains and ocean winds, many places in South America have comfortable temperatures. Some of the greatest concentrations of people can be found in higher elevations where temperatures are cooler.
AFRICA

Africa is the second largest continent in area. It is almost three times the size of the United States. To the north, Africa is separated from Europe by the Mediterranean Sea. To the east lie the Red Sea and Indian Ocean. On the west, Africa is bordered by the Atlantic Ocean.

Physical Features

Deserts. The Sahara Desert, which takes up most of North Africa, is the world’s largest desert. It separates Africans north and south of it because this dry, sandy region is difficult to cross. For centuries, the Sahara isolated sub-Saharan Africa (Africa south of the Sahara) from the rest of the world. Farther south, Africa also has the Kalahari Desert.
**Savannas.** Much of Africa is savanna — land where tall, wild grasses grow with some trees. Savannas are the best areas in Africa for growing crops and raising livestock. Most Africans live in the savanna region or along the coasts.

**Tropical Rainforests.** In Central and West Africa, hot and humid rainforests get 60 to 100 inches of rainfall a year. This climate produces thick forest and jungle areas, making travel difficult. Rainforests are the home to more plant and animal species than anywhere else on the globe.

**Mountains and Valleys.** The Atlas Mountains are found on the northwest edge of Africa. The Great Rift Valley runs through the highlands of Ethiopia and Kenya, to the east.

**Bodies of Water.** Africa has several major rivers — the Nile, Congo, Zambezi, and Niger. The Nile, the world’s longest river, flows 4,150 miles from Central Africa through Egypt into the Mediterranean. The banks of the Nile River provide some of Africa’s richest farmland. Important lakes include Lake Victoria, Lake Tanganyika, and Lake Nyasa.

**Climate.** Much of Africa is warm, with hot summers and mild winters. The amount of rainfall differs greatly; deserts receive too little water for farming, while some other areas receive too much rain.
APPLYING WHAT YOU HAVE LEARNED

Imagine you are a reporter for *National Geographic* magazine and you are writing an article about Africa’s physical features.

★ Select one feature described on pages 67–69. Gather additional information about that feature and write a short paragraph describing it.

★ Then photocopy a picture from the Internet or library illustrating that feature. Paste it next to your one-paragraph description below.

---

**EUROPE**

Europe is the second smallest continent in land area. Europe and Asia actually both share the same land mass. This land mass is so large that geographers have divided it into two continents. Great Britain, Ireland and Iceland are island nations in the Atlantic Ocean that are considered part of Europe.

Geographers have called Europe a “peninsula of peninsulas.” Its many peninsulas encouraged sea travel and trade.
Physical Features

★ Mountains. There are many mountain ranges in Europe. They include the Alps, Pyrenees, Apennines, and Balkans. These mountains helped to create defensible borders between areas. They encouraged Europeans to develop many separate nationalities, each with its own language and customs.

★ Bodies of Water. Europe includes several major bodies of water. In the north are the Baltic and North Seas. In the south, there are the Mediterranean Sea and the Black Sea. Europe also has many major rivers, including the Danube, Rhine, Loire, Rhone, Elbe, Vistula, and Volga.

APPLYING WHAT YOU HAVE LEARNED

On the outline map of Europe, show the location of each of the physical features identified below.

★ Seas: Baltic, North Sea, Mediterranean, and Black Sea.

★ Mountain Ranges: Alps, Pyrenees, and Apennines.

★ Rivers: Danube, Rhine, Loire, Elbe, Vistula, and Volga.
Asia is the world's largest continent. Today, it is home to two-thirds of the world's population. Because of its immense size and the diversity of its cultures, geographers often think of Asia as being composed of several distinct regions.

**THE MIDDLE EAST**

The Middle East lies at the “crossroads” of three continents, connecting Africa, Asia and Europe. It contains one of the world’s most important waterways, the Suez Canal, which shortens the traveling distance between Europe and Asia.

**Physical Features**

★ **Deserts.** Much of the Middle East is desert. For example, most of the Arabian Peninsula is occupied by 900,000 square miles of the Arabian Desert. The other major desert in the Middle East is the Syrian Desert.

★ **Bodies of Water.** There are several important rivers in the Middle East, including the Jordan, Tigris, and Euphrates Rivers. The mild climate and fertile soil found along these rivers made them centers of some of the world’s earliest civilizations. Other major bodies of water bordering the Middle East include the Mediterranean Sea, Black Sea, Red Sea, and the Persian Gulf.
Climate and Resources. Most of the Middle East is located near the equator. The area has warm winters and hot, dry summers. While lacking adequate water supplies, the Middle East has about half of the world’s known oil reserves.

NORTHERN AND CENTRAL ASIA

Northern Asia is occupied by Russia, which stretches from Eastern Europe to the Pacific. Russia is the world’s largest country in area. Although the majority of its population is located in Europe, most of Russia’s land area is in Asia. Central Asia consists of a vast corridor south of Russia, made up of mountains, deserts and steppes (treeless grasslands). The steppes provide good grazing land. Siberia, in northeastern Russia, is a cold region with forests. Northernmost Russia is tundra, where the ground is frozen much of the year. Afghanistan, a dry mountainous country in Central Asia, separates Iran and Russia from Pakistan.

Physical Features

Bodies of Water. The Arctic Ocean, north of Russia, is frozen for most of the time. Major rivers in Asian Russia are the Ob and Lena.

Mountains. The Ural Mountains separate European and Asian Russia, while the Pamir Mountains separate Russia from China.

Climate. Most of Russia has long, cold winters and short mild summers.
EAST ASIA

East Asia includes three important countries: (1) China, (2) Korea, and (3) Japan.

★ **China** is the world’s third largest country in area: only Russia and Canada are larger. It is also the world’s most populous nation.

★ **Korea** is a peninsula extending from the northeastern coast of China.

★ **Japan** consists of four main islands and a number of smaller islands, separated from the Asian mainland by the Sea of Japan.

**Physical Features**

★ **Bodies of Water.** Important rivers include the **Hwang Ho** (Yellow River) and the **Yangtze** in China. These river valleys were the birthplace of early civilizations.

★ **Mountains.** China’s southern and western borders are ringed by the **Himalayan, Kunlun,** and **Tianjin Mountains.** To the west is the mountainous plateau of **Tibet.**
Much of Japan and Korea are also mountainous. About 85% of Japan is covered by mountains and hills. Mount Fuji, an extinct volcano, is the highest and most famous mountain in Japan.

★ Deserts. The Gobi Desert is located to the north of China in Mongolia.

For much of the past, mountains, deserts, and surrounding seas served to separate East Asia from the rest of the world.

**SOUTH AND SOUTHEAST ASIA**

Most of South Asia is a subcontinent — a large piece of land smaller than a continent. The Indian subcontinent, about the size of the United States, looks like a large triangle jutting out of Asia into the Indian Ocean. Southeast Asia consists of a peninsula (land surrounded by water on three sides) and a series of islands on the southeast corner of the Asian mainland. Surrounded by the Pacific and Indian Oceans, it provides the shortest water route between these two oceans.

![Map of South and Southeast Asia](image)

**Physical Features**

★ Mountains. The Himalayas, north of India, are the highest mountains in the world. They separate the Indian subcontinent from the rest of Asia. Mountains also cut off Southeast Asia from the rest of the continent. Divided by mountains, the peoples of Vietnam, Laos and Cambodia developed their own languages, customs and cultures.
Bodies of Water. The main rivers of the Indian subcontinent are the Indus and Ganges. Here, one of the world’s earliest civilizations began. The Mekong, Salween, and Irrawaddy Rivers are major rivers in Southeast Asia.

Climate. Both South and Southeast Asia have warm winters and hot summers. The most important climatic feature is the monsoons. These violent winds blow over the region and bring heavy rains in the summer. Monsoon rains provide water for crops and support life, but also cause flooding, landslides, property damage, and even death. Entire villages have been swept away by strong monsoon rains.

AUSTRALIA

Surrounded by the Indian and Pacific Oceans, Australia is cut off from Asia by the Arafura and Timor Seas. The central areas of Australia are mainly desert. The world’s largest coral reef, the Great Barrier Reef, is found here. Australia is the only country that is an entire continent. It is home to many unique animals.

ANTARCTICA

Antarctica is the world’s southernmost continent and covers the South Pole. It is surrounded by the Southern, Atlantic, Pacific, and Indian Oceans. Since 2000, most geographers call this the Southern Ocean. Antarctica is the coldest, driest, and windiest continent, and has the highest average elevation of all the continents. About 98% of this continent is covered by ice, averaging one mile in thickness. Only plants and animals that can adapt to the extreme cold can survive here.

ACTING AS AN AMATEUR GEOGRAPHER

Select one of the continents you studied in this chapter. Then create a bas relief, or three-dimensional map, of that continent. Your map should show the continent’s major physical features. You can use paper maché, plaster or clay. Use a pencil to cut lines into the wet material to show rivers. Build up areas with extra paper maché, plaster or clay to indicate mountains, hills and plateaus. After your project dries, use blue paint to show rivers, lakes, and seas. Use yellow paint for deserts, and green to show forest areas.
Complete the graphic organizer below. For each of the seven continents, indicate one characteristic about its size and location. Then identify one or more of its physical characteristics.
APPLYING WHAT YOU HAVE LEARNED

This chart lists some of the major physical features for each of the seven continents. Use an outline map of the world to complete the following task.

★ Select any six physical features from the chart below for each continent.
★ Locate and label each selected feature on your outline map.

<table>
<thead>
<tr>
<th>Continent</th>
<th>Major Physical Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>Largest and most populous continent; Himalaya Mountains; Gobi Desert; Indian Subcontinent; Arabian Desert; Rivers: Tigris and Euphrates, Indus, Ganges, Mekong, Yangtze, Hwang Ho; Island nations include: Japan, Indonesia, Philippines, Malaysia.</td>
</tr>
<tr>
<td>Africa</td>
<td>Second largest continent; Atlas Mountains; Sahara Desert; Rivers: Nile, Congo, Niger; Great Rift Valley; Kalahari Desert; Tropical rainforests of Central and West Africa; Suez Canal.</td>
</tr>
<tr>
<td>North America</td>
<td>Third largest continent; Appalachian and Rocky Mountains; Great Lakes; Rivers: Mississippi, Rio Grande; West Indies; Central America; Panama Canal.</td>
</tr>
<tr>
<td>South America</td>
<td>Fourth largest continent; mostly in Southern Hemisphere; Andes Mountains; Amazon Rainforest; pampas; Amazon River and Rio de la Plata.</td>
</tr>
<tr>
<td>Europe</td>
<td>Shares its landmass with Asia; Mountains: Alps Balkans, and Pyrenees; Rivers: Danube, Rhine, Rhone, Loire, Elbe, Vistula, and Volga; Seas: Mediterranean, Baltic, North and Black Seas.</td>
</tr>
<tr>
<td>Australia</td>
<td>Great Barrier Reef; center of continent is desert.</td>
</tr>
<tr>
<td>Antartica</td>
<td>Covers the South Pole; mainly frozen.</td>
</tr>
</tbody>
</table>

THE CONCEPT OF REGION

Just as historians divide the continuous thread of time into distinct time periods, geographers divide Earth’s seamless surface into distinct regions. Each region has its own characteristics that set it apart from other regions. Regions can be based on either physical or human characteristics. The differences within a region are fewer than the differences between the region and areas outside the region.

In this chapter, you will look at some of Earth’s physical regions.
A **physical region** can be defined by its common landforms, soils, climate, vegetation or animal life.

The **Amazon Rainforest** in South America is a good example of a physical region. Throughout the Amazon Rainforest region, the climate is hot all year, with frequent rain showers. A variety of tropical trees grow in the Amazon. Their interlocking tops form a dense canopy (*umbrella*) over the rainforest.

The **Sahara Desert**, the world’s largest desert, is another example of a physical region with its own characteristics. The climate is extremely hot and dry. Much of the Sahara is sand without plant life. The northern and southern ends of the Sahara have some rainfall, grasslands, and desert shrubs.

Other examples of physical regions include the Himalayan Mountains and the Great Lakes. In Texas, people often divide their state into a number of different physical regions. According to the *Texas Almanac*, there are four main physical regions — the Gulf Coastal Plains, Interior Lowlands, Great Plains, and Basin and Range Province.

**FORMAL REGION**

Geographers define formal regions for purposes of study. A **formal region** has clear boundaries and is usually defined by a single characteristic, such as low rainfall. Any distinct area based on one characteristic (either physical or human) can be a formal region.

The same area may in fact belong to more than one region. For example, an area may belong to one region based on its landforms and another region based on its climate. Landforms and climate regions may also overlap. Finally, regions are constantly changing. Either their characteristics or their borders may change.
APPLYING WHAT YOU HAVE LEARNED

★ Select one of the continents you read about in this chapter. Then identify one physical region on that continent. Describe some of the characteristics that make this area a distinct region.


★ Make a chart or Venn diagram below comparing two continents you learned about in the chapter. Use the Internet or library to find information about their similarities and differences — locations, climates, soils, plants, and animal life.


CHAPTER STUDY CARDS

Earth's Seven Continents

★ Africa. Second largest continent in area.
★ Antarctica. Covers the South Pole.
★ North America. Consists of Canada, the United States, Mexico, Central America and the islands of the West Indies.
★ South America. Located between the Atlantic and the Pacific Oceans.
★ Europe. Second smallest continent in area; shares its landmass with Asia.
★ Asia. World's largest continent.
★ Australia. Surrounded by the Indian and Pacific Oceans.

Major Physical Features

★ Oceans. Atlantic, Pacific, Indian, Arctic, and and Southern.
★ Rivers. Mississippi, Rio Grande, St. Lawrence, Amazon, Nile, Rhine, Danube, Elbe, Vistula, Tigris, Euphrates, Volga, Ganges, Yangtze, Hwang Ho, Ganges.
★ Deserts. Sahara, Gobi, Kalahari, Arabian.
★ Rainforests. Amazon Rainforest.