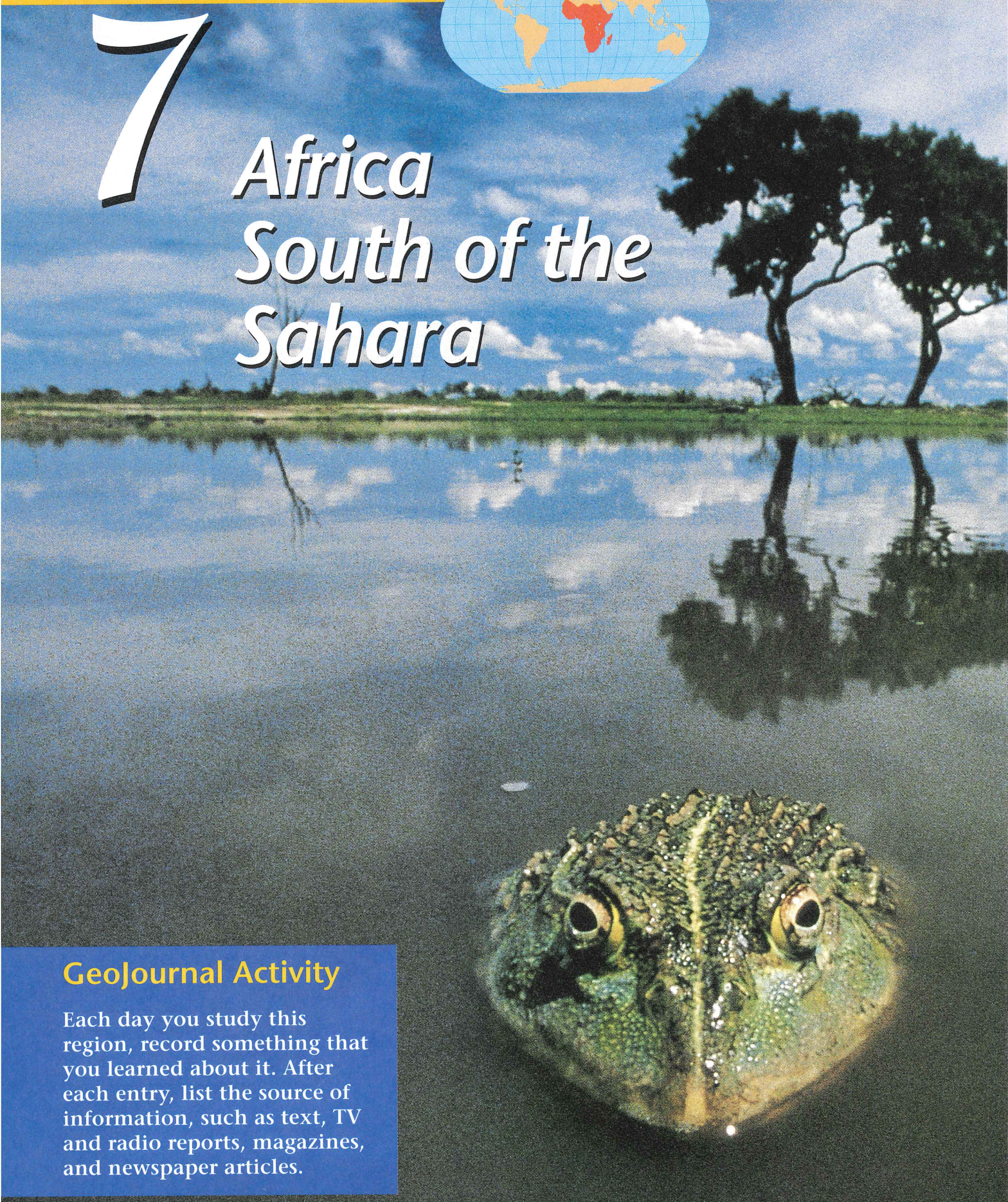


# 7

## *Africa South of the Sahara*



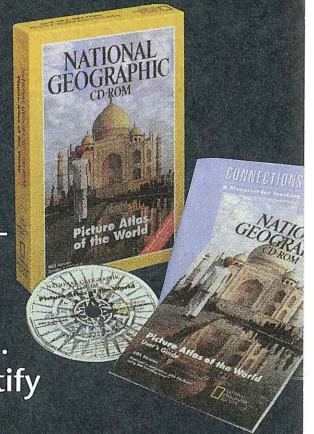
### **GeoJournal Activity**

Each day you study this region, record something that you learned about it. After each entry, list the source of information, such as text, TV and radio reports, magazines, and newspaper articles.



## Picture Atlas of the World CD-ROM

Create a photo album of animal life of Africa south of the Sahara. Include the following photographs: bullfrog and lionesses in Botswana; rhinos in Kenya; elephants in Namibia, buffalo in South Africa; savanna in Tanzania. Read the captions and identify the following:



1. An animal that estivates
2. A national park in Tanzania larger than the state of Connecticut

Then organize into groups to search for more wildlife facts on the CD-ROM and create a jeopardy game to test other groups' knowledge of African wildlife.

## interNET CONNECTION

For more information about Africa South of the Sahara visit the National Geographic Society's Web site.

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

For a unit-based activity visit the Glencoe Social Studies Web site.

[www.glencoe.com](http://www.glencoe.com)

A bullfrog in this seasonal marsh near the Okavango Delta in Botswana.

▶ Boys running to play soccer in Nongoma, Zululand, Republic of South Africa.





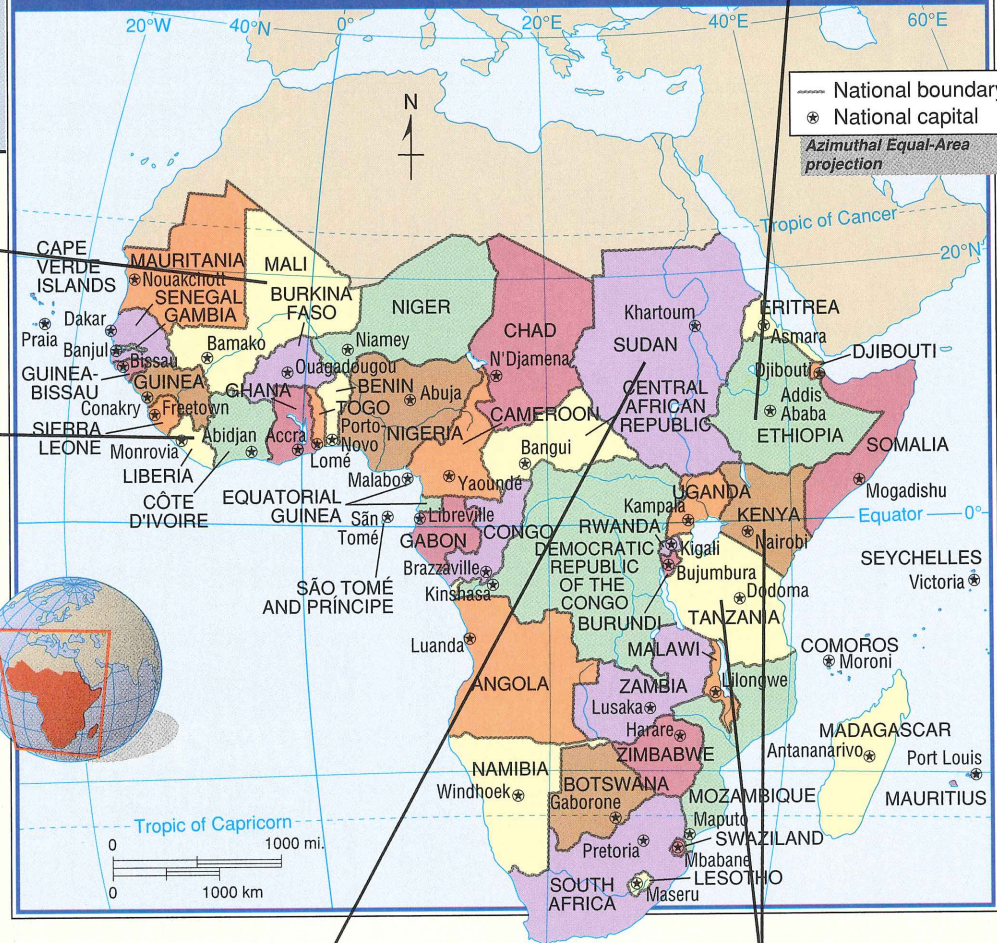
# Cultural Geography

## EXPLORING CULTURAL DIVERSITY

1. What areas of Africa south of the Sahara are most heavily populated? Most sparsely populated?
2. What nations make up Africa south of the Sahara?

Ethiopian tradition says that **Ethiopia's** first emperor, Menelik I, was the son of the Biblical Queen of Sheba and Israel's King Solomon.

### AFRICA SOUTH OF THE SAHARA: POLITICAL



Mali was home to three great trading empires: **Ghana, Mali, and Songhai.**

**Liberia** is Africa's oldest republic. It was settled by African Americans freed from slavery.

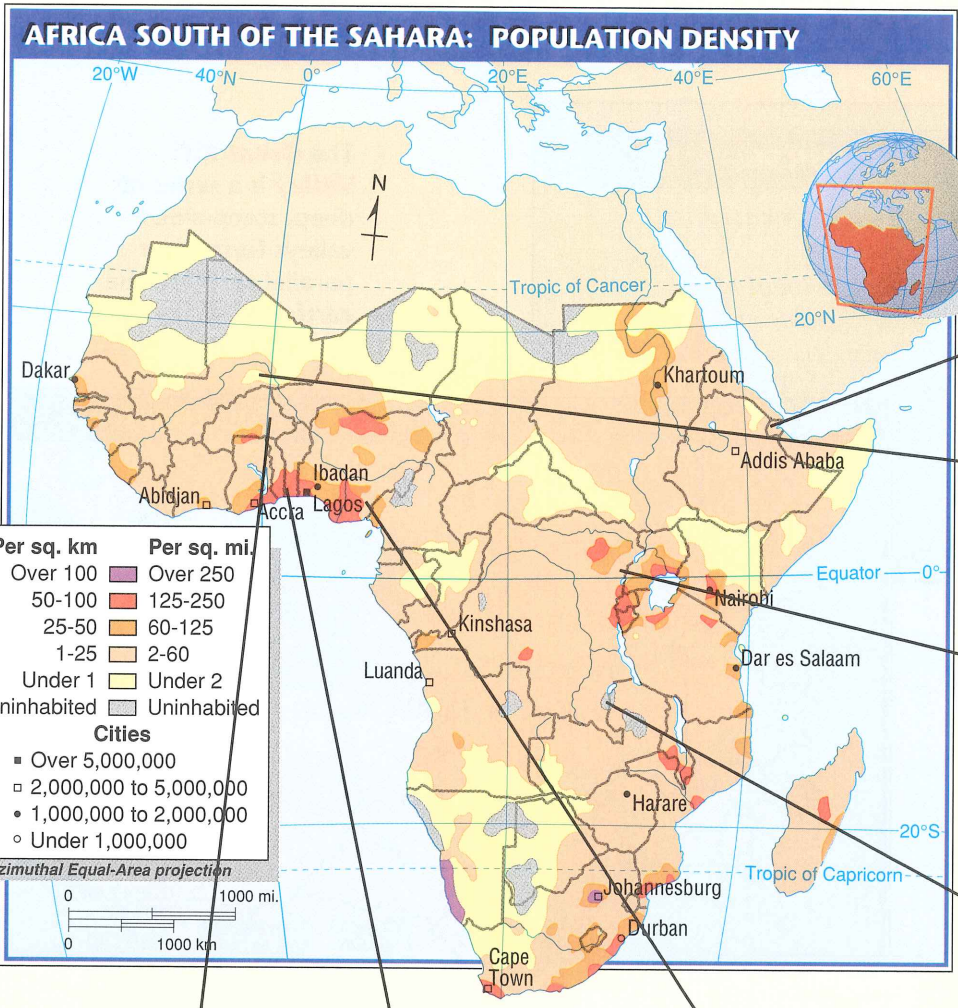
The oldest bones and fossils ever discovered have been found in eastern and southern sites in **Africa**. These findings give Africa the title "birthplace of the human race."

In **Sudan**, African blacks are a majority and live in the south; Arab Muslims live in the north and central regions.

Arab and European minorities live along the coasts of **Kenya** and **Tanzania**.



# SOUTH OF THE SAHARA



Much of the land in **Djibouti** is unproductive, so much of the country's population lives in the capital city also called Djibouti.

**Mali's** population is concentrated in the basins of the Niger and Senegal rivers.

**Rwanda** is one of the most crowded countries in Africa. Its density is 835 persons per square mile (322 per sq. km).

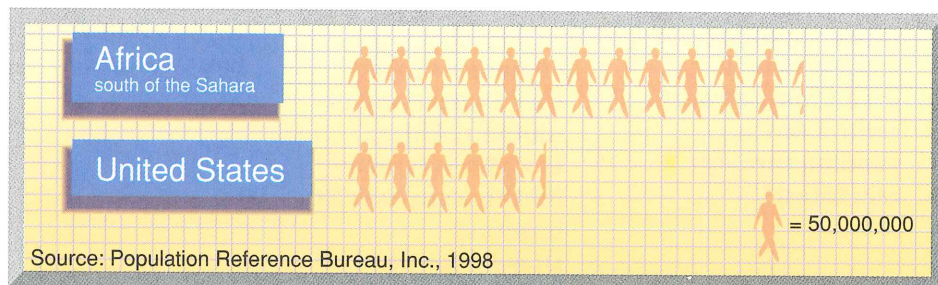
Most Africans live south of the **Sahara**.

Only 15 percent of **Burkina Faso's** population lives in towns.

In **Benin**, migration to the cities has led to a population almost 36 percent urban.

**Nigeria** is Africa's most populous nation. More than 121.8 million people live there.

## Population: Africa South of the Sahara and the United States



Africa south of the Sahara has about 355 million more people than the United States.



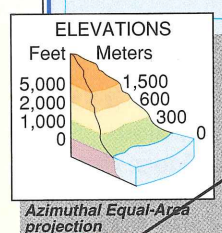
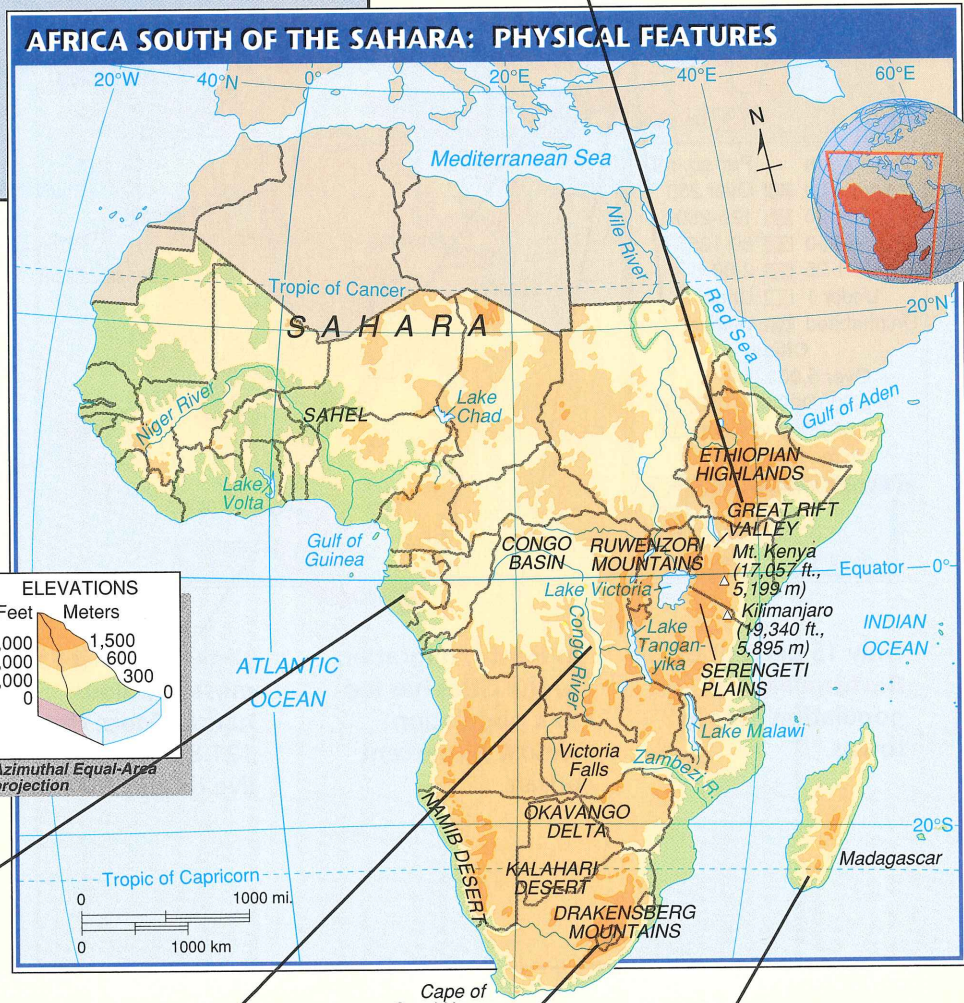
**Physical Geography**

**CHARTING YOUR COURSE**

1. What two desert areas are located in southern Africa?
2. What two mountains are located in eastern Africa?
3. What are three natural resources found in Africa south of the Sahara?

The **Great Rift Valley** is a series of deep, steep-sided valleys formed by parallel cracks in the earth.

The eastern and southern areas of Africa are called **High Africa**. Most of the area is more than 3,000 feet (910 m) above sea level.



The **Equator** runs through the middle of Africa. About 90 percent of the continent lies within the tropics, giving Africa the largest tropical area of any other continent.

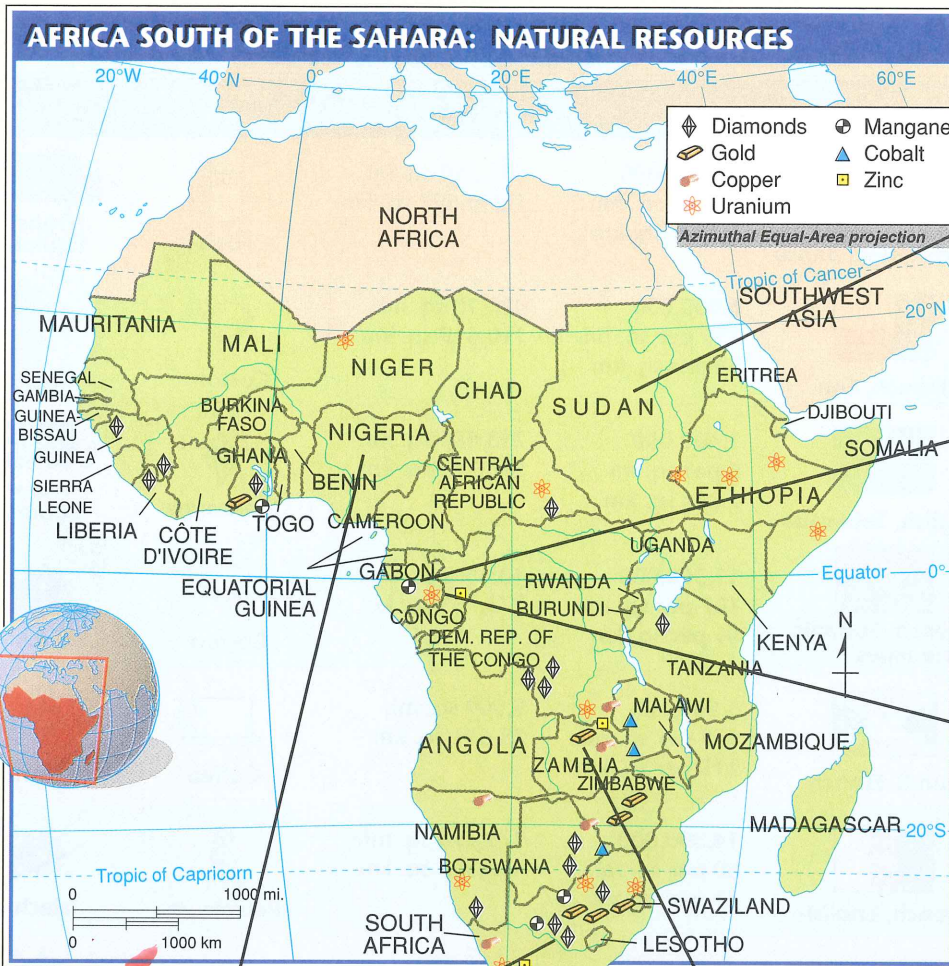
The **Congo** is Africa's second-longest river. It drains most of west central Africa, winding through rain forests.

Sometimes called the "Switzerland of southern Africa," **Lesotho** is famous for the scenery in its beautiful Drakensberg and Maloti mountains.

**Madagascar** is the world's fourth-largest island.



# SOUTH OF THE SAHARA



**Sudan** is one of the world's major producers of cotton.

Lumber from its equatorial rain forests has been **Gabon's** major export and source of wealth for more than 100 years.

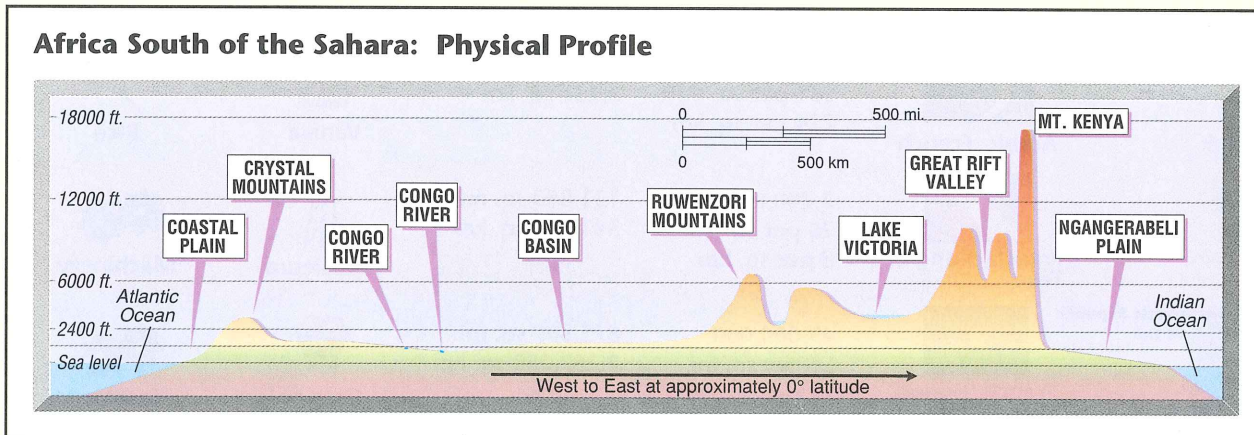
**Congo's** several mineral resources include petroleum, lead, natural gas, potash, and zinc.

**Nigeria** is one of the world's leading oil producers.










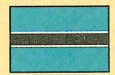










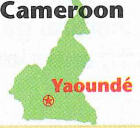



























**South Africa** is the world's largest producer of gold and gem diamonds.

Copper is mined in **Zambia**.

## Africa South of the Sahara: Physical Profile






COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORT	PRODUCTS IMPORT
<b>Angola</b> 	 Portuguese, Bantu	12,000,000 25 per sq. mi. 10 per sq. km	481,350 sq. mi. 1,246,697 sq. km	 Fuels	 Transport Equipment
<b>Benin</b> 	 French, Fon	6,000,000 139 per sq. mi. 54 per sq. km	42,710 sq. mi. 110,619 sq. km	 Cotton	 Textiles
<b>Botswana</b> 	 English, Setswana	1,400,000 6 per sq. mi. 2 per sq. km	218,810 sq. mi. 566,718 sq. km	 Diamonds	 Transport Equipment
<b>Burkina Faso</b> 	 French, Sudanic languages	11,300,000 107 per sq. mi. 41 per sq. km	105,637 sq. mi. 273,763 sq. km	 Cotton	 Machinery
<b>Burundi</b> 	 Rundi, French	5,500,000 558 per sq. mi. 215 per sq. km	9,900 sq. mi. 25,641 sq. km	 Coffee	 Machinery
<b>Cameroon</b> 	 French, English	14,300,000 80 per sq. mi. 31 per sq. km	179,690 sq. mi. 465,397 sq. km	 Petroleum	 Machinery
<b>Cape Verde Islands</b> 	 Portuguese	400,000 256 per sq. mi. 99 per sq. km	1,560 sq. mi. 4,040 sq. km	 Bananas	 Food
<b>Central African Republic</b> 	 French, Sangho	3,400,000 14 per sq. mi. 6 per sq. km	240,530 sq. mi. 622,973 sq. km	 Diamonds	 Food
<b>Chad</b> 	 French, Arabic	7,400,000 15 per sq. mi. 6 per sq. km	486,180 sq. mi. 1,259,206 sq. km	 Cotton	 Petroleum
<b>Comoros</b> 	 Arabic, French	500,000 581 per sq. mi. 224 per sq. km	860 sq. mi. 2,227 sq. km	 Vanilla	 Rice
<b>Congo</b> 	 French, Kongo, Teke	2,700,000 20 per sq. mi. 8 per sq. km	131,850 sq. mi. 341,492 sq. km	 Petroleum	 Machinery
<b>Congo, Democratic Republic of the</b> 	 French, Kongo, Luba, Mongo	49,000,000 56 per sq. mi. 22 per sq. km	875,309 sq. mi. 2,267,050 sq. km	 Copper	 Machinery

































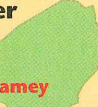















\*Country maps not drawn to scale.  
UNIT 7



COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORT	PRODUCTS IMPORT
<b>Côte d'Ivoire</b>  Yamoussoukro Abidjan	 French, Akan	15,600,000 127 per sq. mi. 49 per sq. km	122,780 sq. mi. 318,000 sq. km	 Food	 Petroleum
<b>Djibouti</b>  Djibouti	 French, Arabic	700,000 73 per sq. mi. 28 per sq. km	8,950 sq. mi. 23,200 sq. km	 Livestock	 Food
<b>Equatorial Guinea</b>  Malabo	 Spanish, Fang, Bubi	400,000 37 per sq. mi. 14 per sq. km	10,830 sq. mi. 28,050 sq. km	 Food & Livestock	 Food and Beverages
<b>Eritrea</b>  Asmara	 Tigrinya, Tigre	3,800,000 99 per sq. mi. 38 per sq. km	38,996 sq. mi. 101,000 sq. km	 Coffee	 Food
<b>Ethiopia</b>  Addis Ababa	 Amharic, Tigre, Oromo	58,400,000 151 per sq. mi. 58 per sq. km	386,100 sq. mi. 1,000,000 sq. km	 Coffee	 Machinery
<b>Gabon</b>  Libreville	 French, Bantu	1,200,000 12 per sq. mi. 5 per sq. km	99,490 sq. mi. 257,679 sq. km	 Petroleum	 Machinery
<b>Gambia</b>  Banjul	 English, Mandinka, Wolof	1,200,000 309 per sq. mi. 119 per sq. km	3,860 sq. mi. 9,997 sq. km	 Peanuts	 Food
<b>Ghana</b>  Accra	 English, Ewe, Akan, Mossi	18,900,000 215 per sq. mi. 83 per sq. km	87,583 sq. mi. 226,840 sq. km	 Cocoa Products	 Machinery
<b>Guinea</b>  Conakry	 French, Peul, Mande	7,500,000 79 per sq. mi. 31 per sq. km	94,873 sq. mi. 245,721 sq. km	 Bauxite	 Petroleum
<b>Guinea-Bissau</b>  Bissau	 Portuguese, Crioulo	1,100,000 101 per sq. mi. 39 per sq. km	10,860 sq. mi. 28,127 sq. km	 Cashews	 Transport Equipment
<b>Kenya</b>  Nairobi	 Swahili, English, Kikuyu	28,300,000 129 per sq. mi. 50 per sq. km	219,745 sq. mi. 569,139 sq. km	 Tea	 Machinery
<b>Lesotho</b>  Maseru	 English, Sotho	2,100,000 178 per sq. mi. 69 per sq. km	11,720 sq. mi. 30,355 sq. km	 Machinery	 Clothing

















































\*Country maps not drawn to scale.



COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL PRODUCTS EXPORT	IMPORT
<b>Liberia</b>  Monrovia	 English, ethnic languages	2,800,000 75 per sq. mi. 29 per sq. km	37,190 sq. mi. 96,322 sq. km	 Iron Ore	 Machinery
<b>Madagascar</b>  Antananarivo	 Malagasy, French	14,000,000 62 per sq. mi. 25 per sq. km	224,530 sq. mi. 581,533 sq. km	 Coffee	 Machinery
<b>Malawi</b>  Lilongwe	 Chewa, English, Lomwe, Yao	9,800,000 269 per sq. mi. 104 per sq. km	36,320 sq. mi. 94,069 sq. km	 Tobacco	 Machinery
<b>Mali</b>  Bamako	 French, Bambara, Senoufo	10,100,000 21 per sq. mi. 8 per sq. km	471,120 sq. mi. 1,220,201 sq. km	 Cotton	 Machinery
<b>Mauritania</b>  Nouakchott	 French, Arabic, Hassanya Arabic	2,500,000 6 per sq. mi. 2 per sq. km	395,840 sq. mi. 1,025,226 sq. km	 Fish	 Machinery
<b>Mauritius</b>  Port Louis	 English, French Creole, Bhojpuri	2,500,000 1,483 per sq. mi. 573 per sq. km	784 sq. mi. 2,030 sq. km	 Clothing	 Machinery
<b>Mozambique</b>  Maputo	 Portuguese, Makua, Malawi	18,600,000 62 per sq. mi. 24 per sq. km	302,740 sq. mi. 784,097 sq. km	 Shrimp	 Food
<b>Namibia</b>  Windhoek	 Afrikaans, English	1,600,000 5 per sq. mi. 2 per sq. km	317,870 sq. mi. 823,283 sq. km	 Minerals	 Petroleum
<b>Niger</b>  Niamey	 French, Fulani, Hausa	10,100,000 21 per sq. mi. 8 per sq. km	489,070 sq. mi. 1,266,691 sq. km	 Uranium	 Machinery
<b>Nigeria</b>  Abuja	 English, Hausa, Yoruba, Ibo	121,800,000 346 per sq. mi. 134 per sq. km	351,650 sq. mi. 910,774 sq. km	 Petroleum	 Machinery
<b>Rwanda</b>  Kigali	 French, Rwanda	8,000,000 835 per sq. mi. 322 per sq. km	9,525 sq. mi. 24,670 sq. km	 Coffee and Tea	 Machinery
<b>São Tomé &amp; Príncipe</b>  São Tomé	 Portuguese	200,000 511 per sq. mi. 197 per sq. km	293 sq. mi. 759 sq. km	 Cocoa	 Food

\*Country maps not drawn to scale.

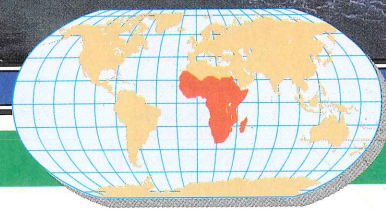
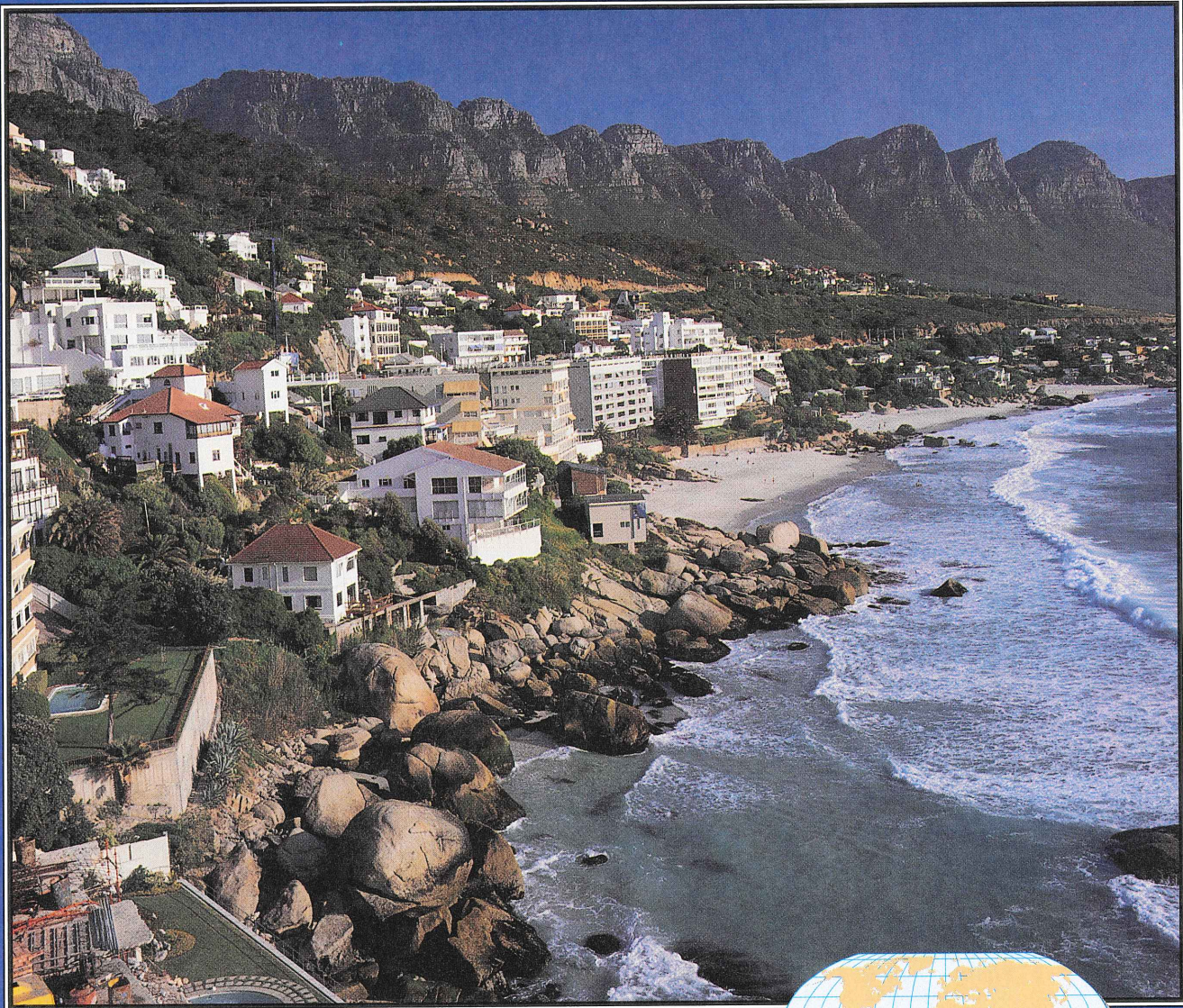


COUNTRY* AND CAPITAL	FLAG AND LANGUAGES	POPULATION	LANDMASS	PRINCIPAL EXPORT	PRODUCTS IMPORT
<b>Senegal</b> 	 French, Wolof, Serer, Peul	9,000,000 122 per sq. mi. 47 per sq. km	74,340 sq. mi. 192,541 sq. km	 Peanut Oil	 Machinery
<b>Seychelles</b> 	 English, French	100,000 432 per sq. mi. 167 per sq. km	174 sq. mi. 451 sq. km	 Bananas	 Food
<b>Sierra Leone</b> 	 English, Ethnic Languages	4,600,000 166 per sq. mi. 64 per sq. km	27,650 sq. mi. 71,614 sq. km	 Assorted Minerals	 Food & Livestock
<b>Somalia</b> 	 Somali, Arabic	10,700,000 44 per sq. mi. 17 per sq. km	242,220 sq. mi. 627,350 sq. km	 Livestock	 Petroleum
<b>South Africa</b> 	 Afrikaans, English, Nguni	38,900,000 82 per sq. mi. 32 per sq. km	471,440 sq. mi. 1,221,030 sq. km	 Gold	 Machinery
<b>Sudan</b> 	 Arabic, Dinka, Nubian, Nuer	28,500,000 31 per sq. mi. 12 per sq. km	917,375 sq. mi. 2,376,000 sq. km	 Cotton	 Machinery
<b>Swaziland</b> 	 Swazi, English	1,000,000 145 per sq. mi. 57 per sq. km	6,640 sq. mi. 17,198 sq. km	 Sugar	 Machinery
<b>Tanzania</b> 	 Swahili, English	30,600,000 90 per sq. mi. 35 per sq. km	341,154 sq. mi. 883,588 sq. km	 Coffee	 Machinery
<b>Togo</b> 	 French, Gur and Kwa languages	4,900,000 234 per sq. mi. 89 per sq. km	21,000 sq. mi. 54,390 sq. km	 Phosphates	 Machinery
<b>Uganda</b> 	 English, Swahili, Luganda	21,000,000 273 per sq. mi. 105 per sq. km	77,085 sq. mi. 199,650 sq. km	 Coffee	 Sugar
<b>Zambia</b> 	 English, Bantu languages	9,500,000 33 per sq. mi. 13 per sq. km	287,020 sq. mi. 743,382 sq. km	 Copper	 Machinery
<b>Zimbabwe</b> 	 English, Shona, Sinde bele	11,000,000 74 per sq. mi. 28 per sq. km	149,363 sq. mi. 386,850 sq. km	 Tobacco	 Machinery

\*Country maps not drawn to scale.



# The Physical Geography of Africa South of the Sahara



## CHAPTER FOCUS

### Geographic Setting

Africa south of the Sahara comprises an area more than twice the size of the continental United States. It includes diverse landforms and climates.



### Geographic Themes

#### Section 1 The Land

**PLACE** Africa south of the Sahara rises from west to east in a series of plateaus, the dominant landform on the continent.

#### Section 2 The Climate and Vegetation

**REGION** Climate regions in Africa south of the Sahara range from steamy rain forests to tropical grasslands to arid deserts.

▲ **Photograph:** Cape Town, South Africa



## SETTING THE SCENE

## Read to Discover . . .

- the major landforms in Africa south of the Sahara.
- the physical barriers to inland travel in Africa south of the Sahara.
- how topography affects the water systems of Africa south of the Sahara.

## Key Terms

- escarpment
- cataract
- fault

## Identify and Locate

Eastern Highlands, Drakensberg Mountains, Ruwenzori Mountains, Kilimanjaro, Great Rift Valley, Lake Victoria, Lake Tanganyika, Lake Malawi, Lake Volta, Lake Chad, Nile River, Congo River, Niger River, Zambezi River, Victoria Falls

Nairobi, Kenya

Jambo! Yesterday we left Nairobi and drove to the Great Rift Valley. On the way, we viewed the beautiful, snow-capped Mt. Kenya and Mt. Kilimanjaro. From the top of the valley, I could see dense forests. Thorny trees and shrubs lined the way as we descended to the bottom of the valley. What a magnificent scene!

Umbisa Gusa



**A**frica south of the Sahara includes almost 50 countries, or about one-third of all countries on the earth. In his postcard, Umbisa Gusa describes the varied landscape of Kenya, a country in East Africa. Kenya, however, represents only a small portion of the huge African landmass that occupies almost one-fifth of the earth's total land area.

## PLACE

## Landforms

**A**s the world's second-largest continent, Africa is a land of immense diversity. The desert expanse of the Sahara, the largest desert in the world, blankets much of the northern

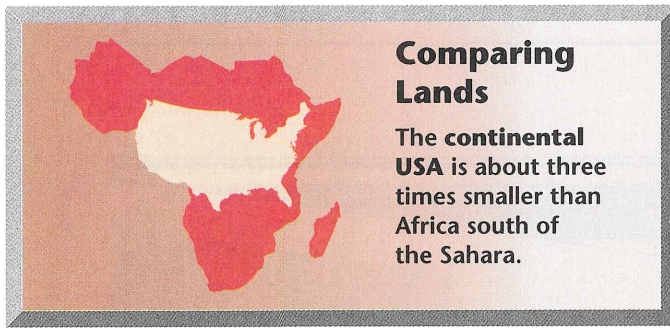
third of the continent. Africa south of the Sahara also includes about 9 million square miles (23 million sq. km) of huge plateaus, mountains, and valleys.

## Continent of Plateaus

Many geographers describe Africa as a gigantic plateau. Narrow coastal plains that extend inland less than 20 miles (32 km) edge most of the continent. Until recent times, this sudden rise in land prevented easy access to the interior of Africa. One plateau follows the other as the land rises from west to east in a series of steps. Separating the plateaus are steep cliffs or slopes known as **escarpments**.

The highest and broadest plateaus and steepest escarpments lie in the south and east. Here rivers spill over escarpments in thunder-





ing waterfalls, or **cataracts**, as they plunge toward the Atlantic or Indian oceans.

Because of its plateaus, Africa boasts the highest overall elevation of any other continent. In Europe, only about half the land lies at more than 500 feet (152 m) above sea level. South of the Sahara, the average elevation is more than 2,000 feet (610 m) above sea level.

## Mountains and Highlands

Despite its high elevations, Africa possesses surprisingly few mountains. With the exception of the Atlas Mountains in northwestern Africa, it has only scattered peaks. South of the Sahara, most mountains are found in the eastern highlands that reach from Ethiopia almost to the Cape of Good Hope.

The Drakensberg Mountains rim the edge of the southeastern plateau, while the Ruwenzori Mountains border Uganda and the Democratic Republic of the Congo. The snow-clad peaks of the Ruwenzori seem to float in the sky, causing Africans to call them Mountains of the Moon.

The cone-shaped volcanic peaks of Kenya and Tanzania include Mount Kenya and Kilimanjaro, Africa's highest mountain. Each year, thousands of climbers try to reach its summit 19,340 feet (5,895 m) above the east African plateau.

## The Great Rift Valley

Kilimanjaro perches on the edge of the Great Rift Valley, one of the world's natural wonders. This valley stretches from the Jordan River in Southwest Asia to the Zambezi River in Mozambique. In East Africa, it slashes a Y-shaped trench more than 3,500 miles (5,631

km) long and creates bold escarpments more than a mile high.

Scientists believe the Great Rift Valley emerged when Africa was part of a huge supercontinent they call Pangaea. Violent movements below the earth's crust began to rip Pangaea apart about 180 million years ago. Huge chunks of land drifted away from one another, creating the present-day continents.

The tremendous pressure on land surfaces caused cracks, or **faults**, and pushed up mountains. For 20 to 35 million years, East Africa seethed with volcanic activity. Another gigantic volcano to the west of Kilimanjaro blew its top and collapsed in on itself, creating the immense Ngorongoro Crater.

### PLACE

## Water Systems

Landforms shaped millions of years ago have influenced the water systems of Africa. Cuts in the Great Rift Valley form the continent's largest lakes, while the longest rivers all rise in the steplike plateaus. Because of high escarpments, rapids and waterfalls at the edge of the continent block easy inland travel by river.

## A Chain of Lakes

A double chain of lakes lies in the Great Rift Valley. Lake Victoria—surrounded by Kenya, Tanzania, and Uganda—is the second-largest freshwater lake in the world and the source of the White Nile. To the southwest, Tanganyika reaches 420 miles (676 km) in length, making it the world's longest freshwater lake.

Surrounded by Tanzania, Mozambique, and Malawi is Lake Malawi, the third-greatest lake in Africa. Many types of fish, some that exist in no other place, live in Lake Malawi.

Few other lakes exist outside the Great Rift Valley. In West Africa, the people of Ghana built a dam across the Volta River to form Lake Volta. To the northeast lies Lake Chad. With no natural outlet to the sea, Lake Chad loses its water to evaporation and seepage.





## AFRICA SOUTH OF THE SAHARA: PHYSICAL-POLITICAL



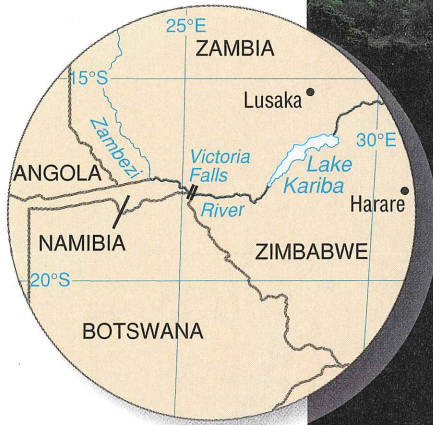
### FOCUS ON GEOGRAPHIC THEMES



- 1. Movement:** Which waterway forms the border between Zambia and Zimbabwe?
- 2. Place:** Which country is completely surrounded by South Africa?
- 3. Place:** In what nation is Kilimanjaro?
- 4. Location:** Where are the areas of highest elevation in Africa?







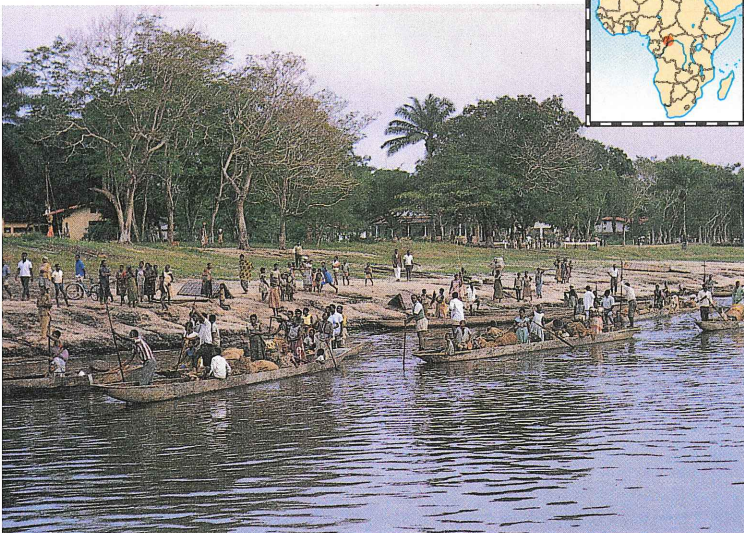
### Geographic Themes

#### Human/Environment Interaction: Victoria Falls

Victoria Falls, located on the Zambezi River, measure 350 feet (107 m) in height. *How might waterfalls affect Africa's future economic development?*

## Rivers and Basins

Four great rivers slice through Africa—the Nile, the Congo, the Niger, and the Zambezi. Although the Nile lies mostly in northern Africa, its White Nile branch starts in Lake Victoria.



### Geographic Themes

#### Region: Congo River, Central Africa

Many villages and markets thrive along the banks of central Africa's Congo River. *What three other major rivers are located in Africa?*

The largest river system south of the Sahara is the Congo. It twists and turns for almost 2,700 miles (4,344 km), crossing the Equator twice.

The Congo has created a huge saucer-shaped basin. Almost 10 million gallons (38 million l) of water flow through the Congo each second, creating an enormous potential for hydroelectricity.

The Niger and the Zambezi form the third- and fourth-largest rivers in Africa. Tributaries feed into both rivers, creating hollowed-out drainage basins. The Niger empties into the Atlantic Ocean. The Zambezi, which pours into the Indian Ocean at one point, widens to 18,297 feet (5,577 m) before plunging down a huge chasm known as Victoria Falls.

## Waterfalls

During the rainy season, millions of gallons of water crash over Victoria Falls. Clouds of spray splash more than 1,640 feet (500 m) into the air. David Livingstone, the first European explorer to see the falls, named them after the British queen.

Victoria Falls, more than twice the height of Niagara Falls, joins dozens of smaller water-







### Geographic Themes

#### Place: The Great Rift Valley, East Africa

The Great Rift Valley cuts a deep gash through the landscape of East Africa. *How was the Great Rift Valley formed?*

falls in offering tremendous potential for the development of hydroelectricity.

droelectric power and solar energy hold the keys to the continent's future development.

### HUMAN/ENVIRONMENT INTERACTION

## Natural Resources

Africa south of the Sahara is rich in resources. In South Africa and the Democratic Republic of the Congo, miners extract diamonds from some of the biggest deposits on the earth. Some geologists believe that more than half the world's gold comes from South Africa and the Great Rift Valley. Central Africa, especially Zambia and the Democratic Republic of the Congo, yields reserves of copper. Nigeria controls 3 percent of the world's known oil reserves. Other parts of the continent hold pockets of uranium, manganese, cobalt, and zinc.

Africans have begun to tap two other sources of energy—waterfalls and the sun. Hy-

### SECTION 1 ASSESSMENT

#### Checking for Understanding

- 1. Define** escarpment, cataract, fault.
- 2. Locating Places** What major landform dominates Africa south of the Sahara?
- 3. Location** Where is the Great Rift Valley?
- 4. Region** What major lakes and rivers lie south of the Sahara?

#### Critical Thinking

- 5. Expressing Problems Clearly** Explain what resources in Africa hold the answer to how to meet the continent's future energy needs.





# The Climate and Vegetation

## SETTING THE SCENE

### Read to Discover . . .

- the climate regions and vegetation patterns in Africa south of the Sahara.
- how elevation and rainfall affect climate in Africa south of the Sahara.

### Key Terms

- savanna
- leach

### Identify and Locate

Tropic of Cancer, Tropic of Capricorn, Namib Desert, Kalahari Desert, Okavango Delta, Sahel, Serengeti Plain, Climate regions: desert, steppe, tropical savanna, tropical rain forest

**P**ainting a picture of the African landscape is much like weaving a piece of *kente* cloth. This highly prized cloth of western Africa is made of long strips of fabric woven together in vivid patterns. Each strip is distinctly different. Yet it forms part of a pattern instantly recognized by most Africans. Like *kente* cloth, the landscape of Africa is made up of distinct climate regions with their own characteristic forms of vegetation. These regions are woven together into a pattern shaped by Africa's location in the tropics.

### LOCATION

## A Diverse Continent

**T**hree tropical latitudes define the location of Africa south of the Sahara—the Tropic of Cancer, the Tropic of Capricorn, and the Equator. The Tropic of Cancer crosses the countries that line the southern edge of the desert. The Tropic of Capricorn extends through the southern tip of the continent. In between these two latitudes runs the Equator. No other continent on the earth straddles all three tropical latitudes.

Although all of Africa lies within 35 degrees of the Equator, the continent has great variations in climate and vegetation. Areas of steamy rain forests, desert and steppe areas, and milder climates are all found in Africa.

Such climatic variations are partially explained by elevation. The combination of high plateaus, lowland coastal areas, and large interior basins strongly influence climate patterns. Higher elevations generally mean cooler climates. Wetter climates are found along escarpments that force rain-heavy clouds to drop their moisture. Such is the case with the Democratic Republic of the Congo. Moisture-carrying clouds sweep inland until they run into the escarpment at the edge of the towering eastern plateau. As a result, rain falls more heavily in the Democratic Republic of the Congo than in neighboring Tanzania.

### REGION

## Climate Regions

**C**limate regions with distinct vegetation patterns lie north and south of the Equator. A trip toward the Equator from the Tropic of Cancer or the Tropic of Capricorn goes through four climate regions: desert, steppe, tropical savanna, and tropical rain forest.

### Deserts

Deserts cover a larger percentage of Africa than any other continent—about two-fifths of its land area. The Sahara sprawls across north-



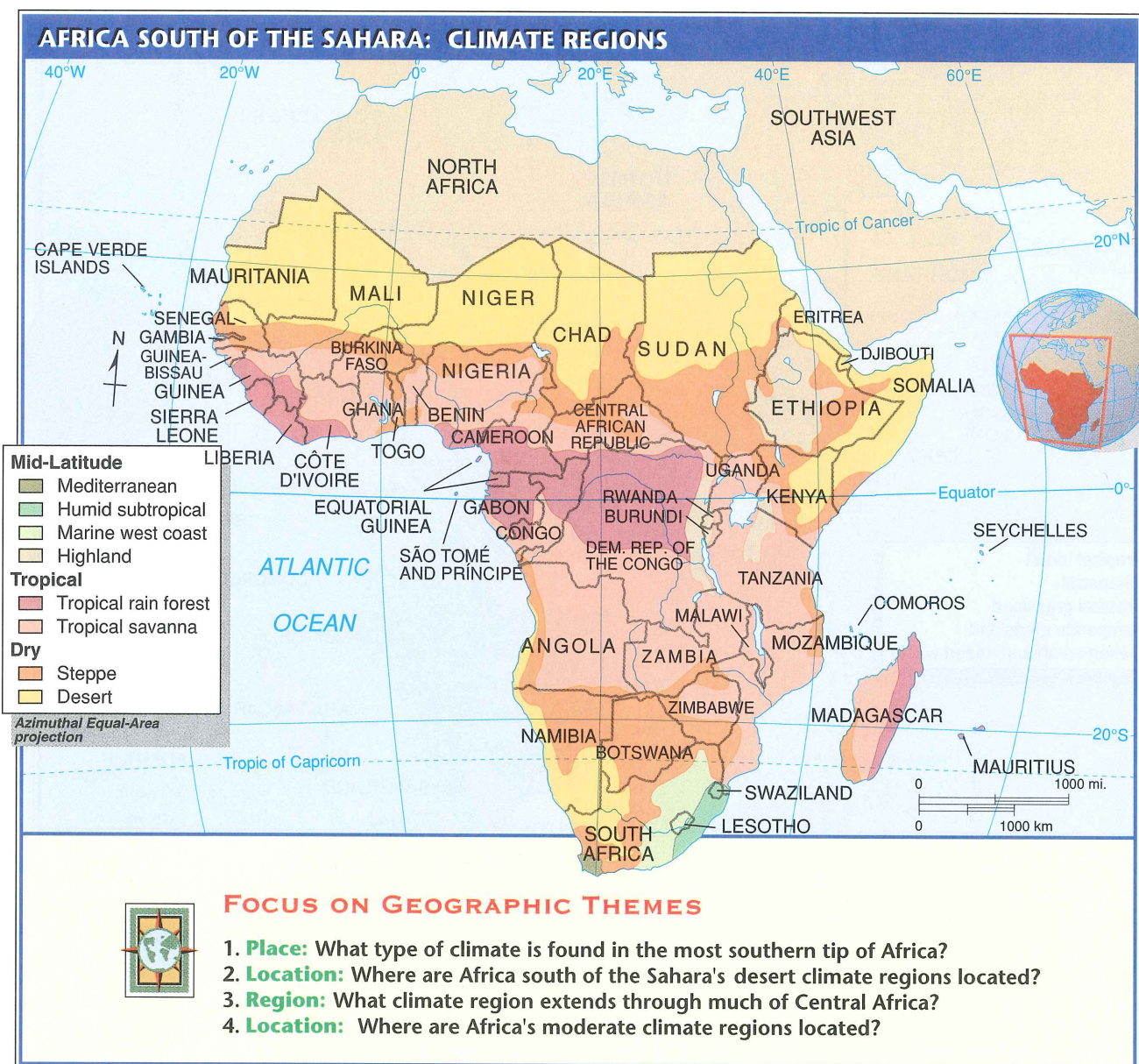


ern Africa from the Atlantic Ocean to the Red Sea. In southern Africa, the Namib Desert blankets the coast of Namibia. On the southern plateau to the west stretches the Kalahari Desert. About the size of Italy, the Kalahari covers most of Botswana.

Little rain ever falls on the deserts of Africa. The complex system of escarpments and plateaus keeps rain-laden clouds from reaching interior areas. Except for scattered cactuses and thorny shrubs, the deserts, where temperatures soar to 120°F (48.9°C), are barren. At night, heat escapes until temperatures cool to 50°F (10°C) or lower.

## Desert Oases

Most oases are created by groundwater close to the surface. On the northern edge of the Kalahari Desert, however, the world's largest inland delta blooms. The delta is formed by the Okavango River. Spilling out of the highlands of distant Angola, the Okavango River spreads a sheet of water over the Kalahari sands until it disappears into the desert. The vegetation in the delta supports a variety of wildlife. "The delta," commented one scientist, "returns the pulse of life to the 'great thirstland' of the Kalahari."





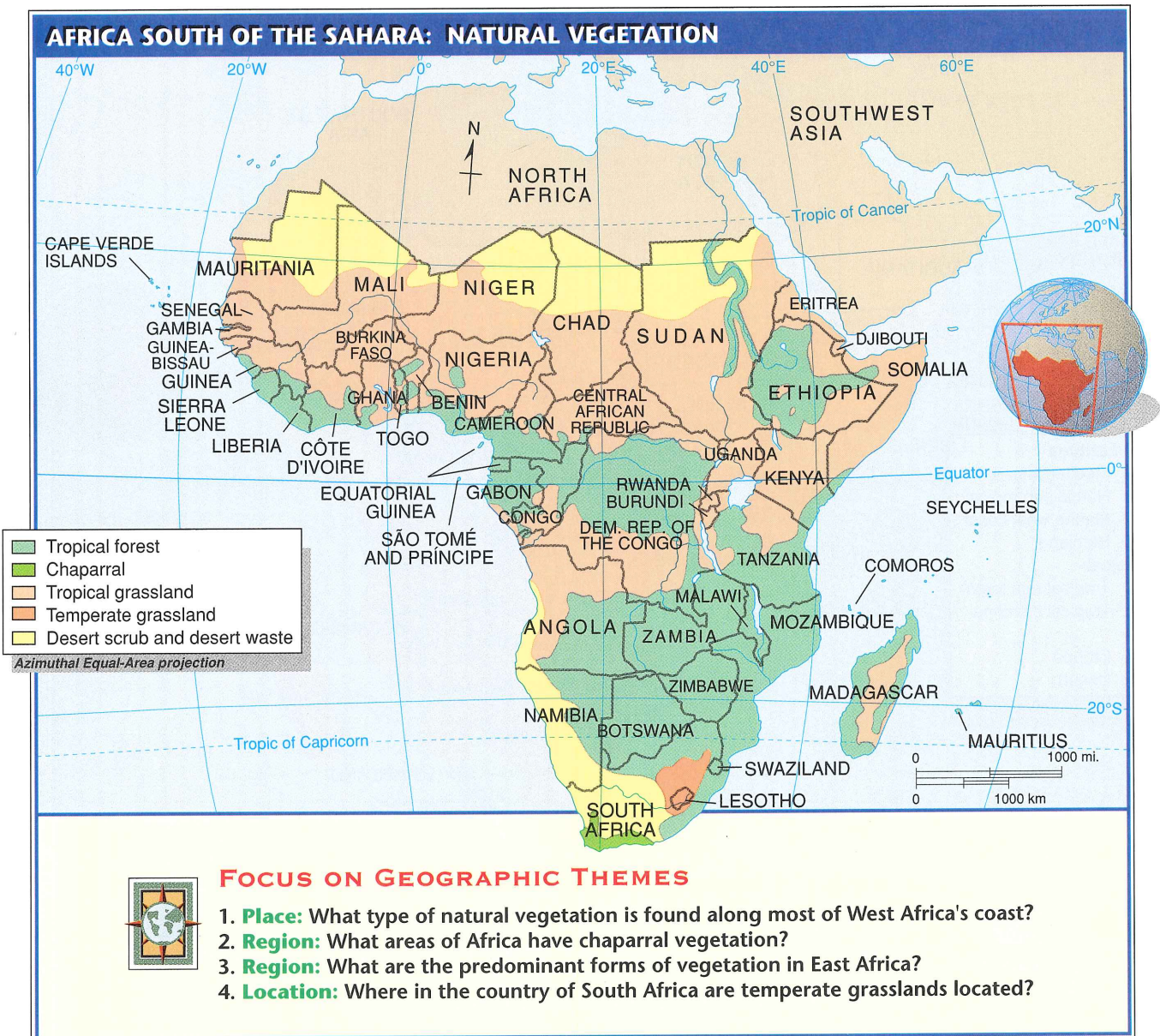
## The Sahel

Beyond the parched deserts stretch the steppe grasslands. The western part of this area is often referred to as the Sahel, from an Arabic word that means “coast.” The Sahel lies between the desert and the more fertile grasslands to the south. Its climate alternates between a long, dry season and a short, wet season. Unfortunately, in recent years the rainy seasons have almost disappeared from the Sahel. A persistent drought has brought misery, famine, and hardship to much of the region.

## Tropical Savanna

Beyond the drought-ridden steppes stretch the **savannas**, or tropical grasslands containing scattered trees. The savannas also alternate between wet and dry seasons. They, however, receive considerably more rain than the Sahel. In the wetter savannas of the southern plateaus, between 30 and 60 inches (76 and 152 cm) of rain falls annually.

In some parts of the savannas, which provide grazing for livestock and wild game, elephant grass grows to more than 15 feet (4.5 m) tall. To protect wildlife, governments have cre-







## Geographic Themes

### Human/Environment Interaction: The Sahel

Grazing and farming lands in the Sahel have been gradually swallowed up by the advancing Sahara. *How have changes in climate affected the people of the Sahel?*

ated huge game preserves such as Tanzania's Serengeti Plains and Kenya's Nairobi National Park.

## Tropical Rain Forests

Many non-Africans imagine Africa as a land of vast tropical rain forests. The steamy tropical rain forest climate region, however, covers only about 8 percent of Africa and is centered mostly on the Equator. Here temperatures hover around 80°F (27°C), and rain falls daily.

The heavy rains **leach**, or wash away, many nutrients from the soil. The rain forests provide poor farmland but are rich in other vegetation. Yet the rain forests face destruction. Cocoa, rubber, and palm-oil plantations take more and more land. Logging companies that seek valuable hardwood trees have increased their harvesting. As is the case with rain forests elsewhere in the world, this climate region may someday disappear.

## Moderate Climates

The map on page 425 shows pockets of moderate climates in the highlands of Kenya

and the southern tip of Africa. These heavily populated areas have fertile soil, adequate rain, and a favorable climate—all good conditions for farming.

## SECTION 2 ASSESSMENT

### Checking for Understanding

- 1. Define** savanna, leach.
- 2. Locating Places** What are the main climate regions that run north and south from the Equator?
- 3. Place** How do elevation and rainfall affect climate in Africa south of the Sahara?
- 4. Human/Environment Interaction** Why might the rain forests of Africa face possible destruction?

### Critical Thinking

- 5. Determining Cause and Effect** Explain the causes of the climate problem in the Sahel and its effect on human and animal life.





# TECHNOLOGY SKILLS

## Using E-Mail

Why use paper and pen to send a message when a computer can immediately deliver your message 24 hours a day? Why spend \$20 to \$30 to have a document delivered by a mail service when you can send the mail for the price of a local phone call? Electronic mail, or E-mail, is a substitute for paper, pen, and a post office.

### REVIEWING THE SKILL


E-mail allows you to send and receive electronic mail messages and data worldwide, to and from anyone connected to the Internet. Your computer is ready for communicating electronically after you obtain three things. First, you need a *modem*—a device that enables computers to communicate with one another through telephone lines. Second, you must subscribe to an Internet service provider (ISP)—a company that charges a fee to provide you with easy access to the Internet. Most ISPs will offer you the third item you need—*communications software* to use E-mail easily.

To send or receive a message, you must first start your E-mail software. Then type in the address of the person to whom you are sending the message. An address has two parts separated by the @ (at) symbol. The first part of the address is called a *user name*. This is usually a real name or a given name. The second part of the address identifies your ISP and is called the *domain name*. The last few letters in a domain name give you a clue as to the type of address: *gov* is a government address, *edu* is an educational institution address, and *com* is a commercial address.

After typing in your message, click the SEND button. Your ISP receives the message and stores it in an electronic “mailbox.” The message is available whenever the recipient chooses to retrieve it and send you a return message.

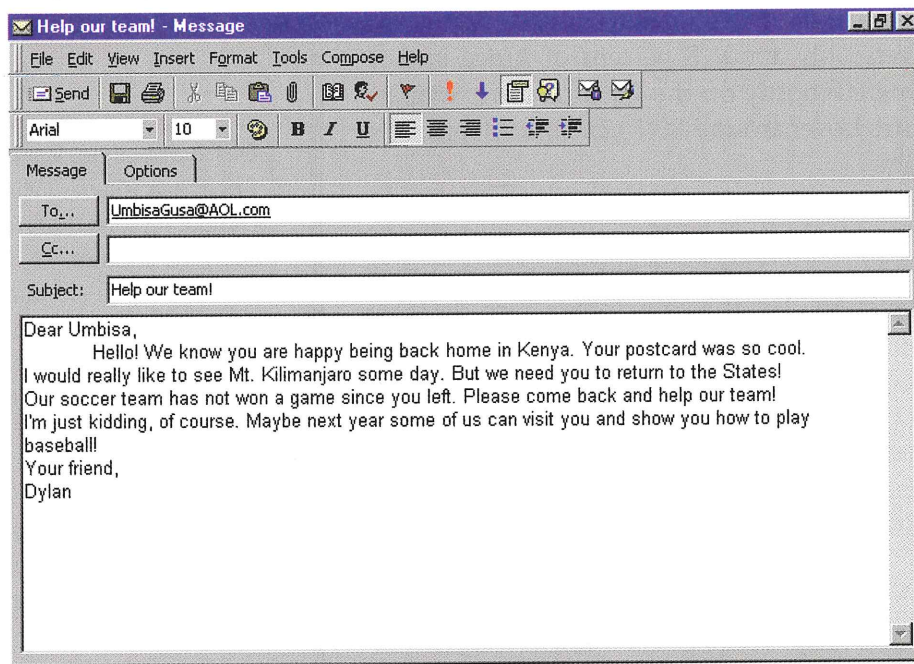
When you receive E-mail, the sender’s address is on the message. You can usually add it to your electronic address book at that time.

### PRACTICING THE SKILL

 To send an E-mail message, complete the following steps:

1. Select the “compose” or “prepare message” function from your communications software.
2. Type in the address of the person who will receive your E-mail.
3. Type in your message, practicing *Netiquette*—some basic rules of E-mail etiquette. For example, check for spelling and grammar errors. Do not type in ALL CAPS, which is like shouting. Include a subject line that describes your message clearly.
4. When your message is complete, click on the SEND button.

For additional practice in using E-mail, see **Practicing Skills on page 430 of the Chapter 20 Assessment.**





**1**

SECTION

KEY TERMS

SUMMARY

**The Land**

escarpment (p. 419)  
cataract (p. 420)  
fault (p. 420)

- A series of steplike plateaus dominates lands south of the Sahara.
- High elevations and a narrow coastal plain have historically hindered travel to the interior of Africa.
- The Great Rift Valley slices through East Africa and affects the landforms of nations from Ethiopia to Mozambique.
- Most of Africa's large freshwater lakes nestle in cuts in the Great Rift Valley.
- Four major river systems tumble over escarpments in dramatic rapids and falls as they spill off the continent.



Village and market along the Congo River in central Africa

**2**

SECTION

KEY TERMS

SUMMARY

**The Climate and Vegetation**

savanna (p. 426)  
leach (p. 427)

- Although most of Africa lies in the tropics, it still exhibits diverse climates and vegetation.
- Elevation and rainfall are the main factors influencing climate variations in Africa south of the Sahara.
- The main climate regions in Africa south of the Sahara include: desert, steppe, tropical savanna, and tropical rain forest.
- Africa has an abundance of mineral wealth, but it lacks the fuels to develop it.
- Deserts and steppes cover more than two-thirds of the land surface in Africa.



Desertification in western Africa





**Reviewing Key Terms**

Choose the vocabulary term that best completes each of the sentences below. Write your answers on a separate sheet of paper.

- escarpment (p. 419)
- cataract (p. 420)
- fault (p. 420)
- savanna (p. 426)
- leach (p. 427)

**SECTION 1**

1. Steep cliffs or slopes that separate plateaus in Africa are called \_\_\_\_\_.
2. The Great Rift Valley developed when volcanic activity created \_\_\_\_\_ in the earth's crust.
3. Because of Africa's plateaus, most rivers tumble off waterfalls or \_\_\_\_\_.

**SECTION 2**

4. \_\_\_\_\_ relates to the rain forests of Africa.
5. An area of grasslands with scattered trees is called a \_\_\_\_\_.

**Reviewing the Facts**

**SECTION 1**

6. Why do some geographers refer to Africa as a "continent of plateaus"?
7. What forces helped create the Great Rift Valley?
8. Why has it been historically difficult to travel into the interior of Africa by river?

**SECTION 2**

9. Why is Africa south of the Sahara said to be the most tropical region on the earth?
10. Why do the Kenya highlands have a milder climate than northern Democratic Republic of the Congo?
11. What vegetation exists in the tropical savannas?
12. How was a delta able to form on the sands of the Kalahari Desert?
13. What forces threaten the rain forests of Africa?

**Critical Thinking**

14. **Analyzing Information** Many myths surround African mountains. What geographic data help explain the awe in which many mountains are held?
15. **Making Comparisons** Choose two climate regions in Africa south of the Sahara. How are they different? How are they alike?



**Geographic Themes**

16. **Movement** What geographic factors discouraged the exchange of ideas between Europe and Africa south of the Sahara until recent times?
17. **Location** How does location set Africa apart as a continent?

**Using the Unit Atlas**

Refer to the physical geography section of the Unit Atlas on pages 412–413.

18. What river drains most of west central Africa?
19. About what percentage of Africa has a tropical climate?



**Practicing Skills**

**Using E-Mail**

Connect to your Internet service provider and start your E-mail software. Then compose and send an E-mail message to one of your United States senators or representatives, requesting information about improving technology in America's classrooms. The front pages of your phone book may have listings for government officials that include E-mail addresses. Print a copy of your E-mail message and share it with your class.



**Projects**

**Individual Activity**

Because of its great elevation, Kilimanjaro includes many climates. Research Kilimanjaro and write a short description of what climbers might see on their way to the summit.

**Cooperative Learning Activity**

With a group of three or four classmates, design a three-month tour that takes students from Khartoum, Sudan, to Cape Town, South Africa. Prepare an information packet on each area crossed. The packets should include travel tips and maps.

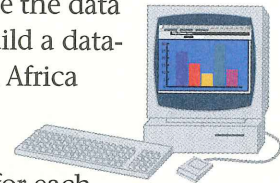
**Writing About Geography**

**Cause and Effect** Imagine you are a geographer from Kenya invited to write and deliver a paper on the Great Rift Valley to the

National Council for Geographic Education. Write a descriptive paper about the valley's major characteristics. Explain the links between present-day physical features and ancient volcanic activity.

**Technology Activity**

**Using a Database** Use the data on pages 414-417 to build a database about countries in Africa south of the Sahara.



Your database should have a separate record for each country. Each record should have a separate field for the following: capital, languages, population, landmass, principal export, principal import. Using your computer's software, sort the records by language category and principal exports.



**Locating Places**

**AFRICA SOUTH OF THE SAHARA: PHYSICAL GEOGRAPHY**

Match the letters on the map with the physical features of Africa south of the Sahara. Write your answers on a separate sheet of paper.

1. Lake Chad
2. Okavango Delta
3. Congo River
4. Great Rift Valley
5. Lake Tanganyika
6. Zambezi River
7. Kilimanjaro
8. Lake Victoria
9. Kalahari Desert
10. Lake Malawi

