

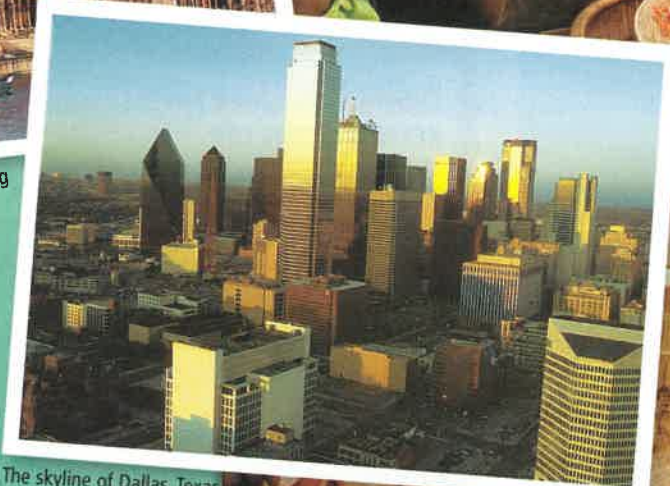
CHAPTER
6

Human Systems

People affect Earth's geography. They use resources, earn a living, build communities, and compete for control of Earth's surface. All these activities shape the world around us.



Parliament building in Budapest, Hungary



The skyline of Dallas, Texas

Dogon women selling vegetables in Mali

Section 1

Economic Geography

HOLT

Geography's Impact Video Series

Watch the video to learn the impact of economic activities.

READ TO DISCOVER

1. What are the three main types of economic systems?
2. How are developed countries and developing countries different?

Reading Strategy

DEVELOPING VOCABULARY Before you read, write the key terms on a sheet of paper. Leave space between each one. As you read the section, write down the meaning of each term. Then describe how the term relates to economics and development.

DEFINE

- market economy
- free enterprise
- capitalism
- command economy
- communism
- gross national product (GNP)
- gross domestic product (GDP)
- industrialization
- literacy rate
- developed countries
- infrastructure
- developing countries

Economic Systems

Economic geography deals with how people earn a living and use resources and with the links among economic activities. Economic geographers group money-making activities into four categories. These are primary (first order), secondary (second order), tertiary (third order), and quaternary (fourth order) activities. (See the chart.)

Primary Activities	Secondary Activities
<ul style="list-style-type: none"> • use natural resources directly • location: at the site of the natural resource being used • examples: wheat farming, iron mining 	<ul style="list-style-type: none"> • use raw materials to produce or manufacture something new • location: close to the resource or close to the market for the finished product • other factors affecting location: labor, energy, and land costs • examples: processing wheat into flour, manufacturing steel
Tertiary Activities	Quaternary Activities
<ul style="list-style-type: none"> • provide services to people and businesses • location: usually near customers • examples: bakeries, car dealerships 	<ul style="list-style-type: none"> • process and distribute information • location: anywhere • other factors affecting location: access to skilled workers, good transportation and communications systems, places with pleasant climates and a high quality of life • examples: plant-genetics research, automotive engineering

INTERPRETING THE CHART The most basic economic activities, such as farming, extract resources directly from Earth and have locations that are closely tied to environmental conditions and the distribution of resources. More complex activities, such as software

development, produce more sophisticated goods and have locations that are not as tied to environmental conditions. What factors affect the location of the different types of economic activities?

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Economic Activities Economic activities that use natural resources directly are called primary activities. They include farming, fishing, forestry, herding, and mining. Primary activities provide the basic raw materials for industry. They are located at the site of the natural resource being used.

Secondary activities use raw materials to produce or manufacture something new. Examples include steelmaking, processing wheat into flour, and making lumber into plywood. Dairies take a raw material—fresh milk—and process it into products like cheese and ice cream. Often, a raw material goes through several stages before it becomes a finished product. Secondary activities are usually located close to the resource being used or close to the market for the finished product.

Tertiary activities provide services to people and businesses. For example, doctors, teachers, and dry cleaners provide personal and professional services. Store clerks, truck drivers, and restaurant staff provide retail and wholesale services. Tertiary activities are usually located near customers to serve them better. However, the use of computers and the Internet is dramatically changing the locations of many service industries. For example, more customers now shop online and buy products from Web sites.

In advanced economies many workers process and distribute information. These jobs are called quaternary economic activities. They require workers with specialized skills and knowledge. Jobs include research scientists, computer programmers, and government administrators. Quaternary activities are not tied directly to resources, environmental conditions, or access to markets. Increasingly, workers in this category can be located almost anywhere.

Economic Systems The four types of economic activities are found in different economic systems around the world. There are three main kinds of economic systems. Each uses resources and produces goods in a distinctive way. The most basic economic system is a traditional or subsistence economy. In this economy, people make goods for themselves and their families. There is

INTERPRETING THE VISUAL RECORD

Large shopping malls, such as this one in New York City's Trump Tower, are common in countries that have market economies and a free enterprise system. Shoppers here can find a wide range of stores and goods concentrated in one area. *What types of goods would you expect to find in this shopping mall?*



little surplus or exchange of goods. As a result, there are few markets—places to buy and sell things. Traditional economies are found mostly in the world’s poorer countries, particularly in rural areas.

A **market economy** is another type of economy. In a market economy, people freely choose what to buy and sell. Market economies are guided by the system of **free enterprise**. This system lets competition among businesses determine the price of products. The businesses’ need to make profits drives their decisions. Businesses supply products and set prices to meet demand. Free enterprise is the basis of **capitalism**. In a capitalist system, businesses, industries, and resources are privately owned.

Market economies are characterized by specialization. Businesses and regions make the goods that they can sell for the highest profit. For example, the midwestern United States has ideal conditions for producing corn, hogs, and soybeans. As a result, farmers there produce these goods and export them around the world. Most of the world’s rich countries have market economies. These countries include Australia, Japan, the United States, and most European countries. Goods made in these countries are traded around the world.

The third type of economy is one in which the government makes the major economic decisions. In a **command economy**, the government decides what to produce, where to make it, and what price to charge. Prices are not based on the market forces of supply and demand. For example, it may cost \$1.00 to produce a loaf of bread. However, the government may set the price at 25 cents so that people can easily afford it. Communist countries have command economies. **Communism** is an economic and political system in which the government owns or controls almost all the means of production. Cuba and North Korea are communist countries.

✓ **READING CHECK:** **Human Systems** What are the three main kinds of economic systems?

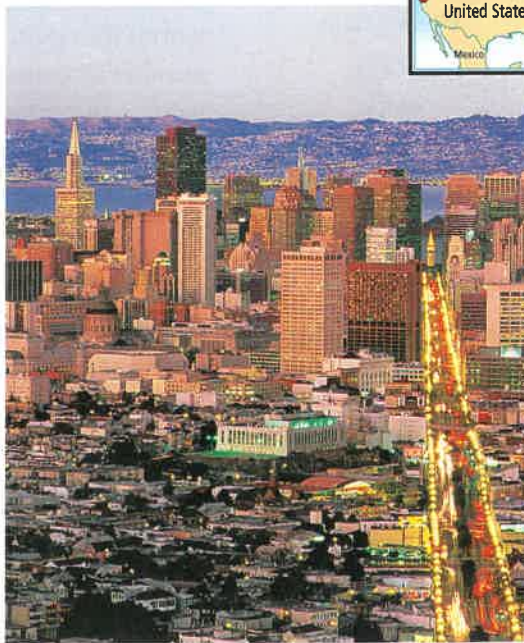
Economic Patterns, Resources, and Technology

The creation and distribution of resources affect the locations of economic activities. Resources also affect the movement of products, capital, and people. How does this happen? The need for a resource draws businesses and workers to the place where it is found. Related businesses grow nearby. Businesses must then find ways to ship their products to markets.

Consider the California Gold Rush of 1849. People from all over the world went to California to mine for gold. As a result, San Francisco grew from a small town to a city of 25,000 people in

INTERPRETING THE VISUAL RECORD

The California Gold Rush of 1849 quickly transformed the city of San Francisco from a small quiet town to a city attracting thousands of immigrants from all over the world. As people and capital flocked to the city, a wide range of businesses sprang up to serve the miners, and real estate prices soared. How did the gold rush affect the movement of people and products to San Francisco?



just one year. The city also became an important financial and banking center. Banks and other businesses provided money to invest in the new mines. Transportation connections developed between gold-mining areas and ports.

Changes in technology, transportation, and communication also affect the location and patterns of economic activities. The development of refrigerated railroad cars, ships, and trucks is an example. The use of refrigerated transportation allowed farm goods to be shipped around the world without spoiling. As a result, the global production and trade of farm goods changed. For example, in the last 150 years, Argentina has become a major meat exporter. This would not have been possible without these changes in technology. Likewise, the development of computers and the Internet has affected the locations of many service and information industries. A growing number of people are now able to work at home and send their work around the world by e-mail.

✓ **READING CHECK:** *Human Systems* How have changes in technology, transportation, and communication affected the locations and patterns of economic activities?

Level of Development

One of the most important topics for understanding world geography is understanding the level of development in countries around the world. Development refers to steady improvements in a country's economy and in people's quality of life.

Economic progress varies greatly among different countries and also within countries. Geographers use general measures of development to analyze such progress. You will find many of these measures in the tables at the beginning of Units 2 through 10.

Measures of Development One common measure of development is **gross national product (GNP)**. GNP is the total value of goods and services that a country produces in a year. GNP includes goods and services made by businesses owned by that country's citizens but located in foreign lands. **Gross domestic product (GDP)** includes only goods and services created within the country. GDP becomes more useful when it is divided by the number of people living in a country. This gives us the per capita GDP, which can be used to compare income levels in different countries.

Another measure of development is the level of **industrialization**. Industrialization is the process by which manufacturing based on machine power becomes widespread in an area. In industrialized countries, many people work in manufacturing, service, and information industries. In other countries, most people work in primary economic activities, particularly farming. There are a number of additional measures of development. They include the average amount of energy people use. In addition, some measures look at the size and quality of a country's transportation and communications systems. For example, countries with more telephones per person tend to be more developed than countries with fewer telephones.

Standard of Living A country's level of development, in turn, determines the standard of living of its people. Standard of living is



Literacy Rates

Country	Literacy Rate
China	90.9%
India	59.5%
Japan	99%
Mexico	92.2%
United States	99%

Source: CIA World Factbook

INTERPRETING THE TABLE Literacy rates reflect a country's standard of living. Along with other data, these rates can be used to compare levels of economic development in different countries. Based on the information in this table, which countries do you think have the highest standards of living? Which country do you think has the lowest level of economic development?

measured by factors like amount of personal income, levels of education, and food consumption. **Literacy rate**—the percentage of people who can read and write—also reflects standard of living. Other measures of standard of living include quality of health care, technology level, and life expectancy—the average length of people’s lives.

 **READING CHECK:** *Human Systems* How is a country’s standard of living measured?

Developed and Developing Countries Geographers organize the world’s countries into two main groups. The richest countries are called **developed countries**. They have high levels of industrialization, and their people enjoy high standards of living. The world’s developed countries include most countries in Europe, the United States, Canada, Japan, Australia, and others. Less than 25 percent of the world’s people live in developed countries.

Developed countries share many features. (See the chart.) For example, each has a high per capita GDP. These countries also have high levels of education and good health care. Literacy rates are high. More literacy leads to more educated workers, who are more productive economically. Life expectancy is also high. Both birthrates and death rates are usually low. As a result, overall population growth is low.

Most people in developed countries live in cities and work in service or manufacturing industries. Few work in agriculture. The small number of farmers use advanced technology to produce large amounts of food. Developed countries also have good **infrastructure**. An infrastructure is a system of roads, ports, and other facilities needed by a modern economy. Developed countries have global market economies.

The world’s poorer countries are called **developing countries** or less developed countries. These countries are less productive economically and have

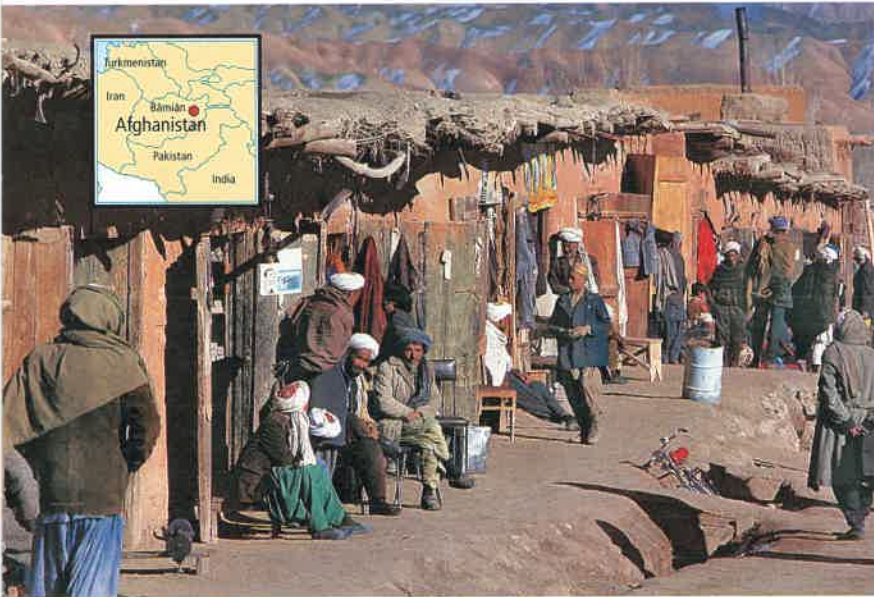


Selected Countries' Statistics								
		Per Capita GDP	Life Expectancy Male (at birth 2006)	Life Expectancy Female (at birth 2006)	Literacy Rate	Percent Urban	TV Sets (per 1,000 people)	Physicians
Developed Countries	Australia	\$32,000	77.6	83.5	99.0	88.2	716	1 per 375
	Japan	\$30,700	78.0	84.7	99.0	65.8	719	1 per 489
	United States	\$42,000	75.0	80.8	99.0	80.8	844	1 per 338
Developing Countries	Afghanistan	\$ 800	43.2	43.5	36.0	22.9	14	1 per 5,675
	Haiti	\$ 1,600	51.9	54.6	52.9	38.8	5	1 per 4,000
	Mali	\$ 1,000	47.0	51.0	46.4	30.5	13	1 per 13,214
Middle-Income Countries	Brazil	\$ 8,400	68.0	76.1	86.4	84.2	333	1 per 485
	Mexico	\$10,100	72.6	78.3	92.2	76.0	272	1 per 734
	Thailand	\$ 8,300	70.0	74.7	92.6	32.3	274	1 per 3,589

Sources: GDP: *CIA Factbook*; Literacy: *CIA Factbook*; Urban pop: UN Population Division <http://esa.un.org/unup/>; Life Expectancy: U.S. Census Bureau; Physicians: *Britannica Book of the Year/World Health Organization*

INTERPRETING THE TABLE *Demographic, economic, and social data for the world’s countries varies greatly, as this table shows. Based on the information in this table, what features do developed*

countries have in common? What features do developing countries have in common? How might literacy rates affect per capita GDP?



INTERPRETING THE VISUAL RECORD These two photos from Australia and Afghanistan show some of the differences between developed and developing countries. Based on these photos, how do you think daily life in these two places is different? What can you see in the photographs that might indicate the level of development in each place?

lower standards of living. This group includes most countries in Africa, Asia, Central and South America, and the Pacific Islands. Most of the world's people live in developing countries. These countries have low per capita GDPs. (See the chart.) In general, birthrates are high, and life expectancy is low. Grade schools are often available, but few people go to high school or college. Most people farm, and many homes do not have electricity. There are also not many computers, refrigerators, or televisions per person. There are few service businesses and manufacturing industries to provide jobs. Because rural areas offer few jobs, many people move to cities.

Between the world's richest and poorest countries are what some geographers call middle-income countries. Examples include Mexico, Brazil, Thailand, and Malaysia. They have features of both developed and developing countries. Their cities may be modern, but rural areas and small towns are often poor. Many of these countries have new industries, and many people are switching from rural life to city life. In many of these countries incomes are rising quickly. They may soon join the developed countries. However, some countries, like Argentina and South Africa, seem stuck in the middle-income category.

READING CHECK: *Places and Regions*
 What are some examples of developed and developing countries?

Section 1 Review

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 Keyword: SW3 HP6

Define market economy, free enterprise, capitalism, command economy, communism, gross national product (GNP), gross domestic product (GDP), industrialization, literacy rate, developed countries, infrastructure, developing countries

Reading for the Main Idea

1. Human Systems What are the main characteristics of traditional, market, and command economies?

2. Places and Regions What factors would you use to measure the level of economic development in a country?

Critical Thinking

3. Analyzing Information How might the discovery of valuable minerals nearby affect economic activities in your community?

4. Analyzing Information How do you think the development of new technologies such as refrigerated railroad cars, ships, and trucks can change people's perception of resources?

Organizing What You Know

5. Create a chart like the one shown below. Use it to list characteristics of developed and developing countries.

Developed countries	Developing countries

Section 2

Urban and Rural Geography

READ TO DISCOVER

1. How have people used land throughout human history?
2. How does urban geography describe human settlements?
3. What are some of the ways people use land in rural areas?

Reading Strategy

VISUALIZING INFORMATION Previewing the visuals in this section will help you understand the material you are about to read. What do the visuals on this page and the next seven pages tell you about urban and rural geography? Write your answers on a sheet of paper. As you read, write down additional information you learn that connects the visuals to the material in the section.

DEFINE

domestication
 urbanization
 world cities
 central business district (CBD)
 edge cities
 subsistence agriculture
 shifting cultivation
 pastoralism
 market-oriented agriculture
 agribusiness

Using the Land

Not all of the resources that humans need can be found in one place. Usually people must travel or trade to find everything they need. How people get resources from the land has greatly affected Earth's geography.

Origins of Domesticated Plants



INTERPRETING THE MAP This map shows the probable origins of many of the world's most important domesticated plants. It is a generalized map, as the exact origins of many domesticated plants are

unknown, though their general area of origin is. Hearth areas were particularly important centers of plant domestication. Which plants are native to Asia? To North America?



Only about 150 of the world's 80,000 or so edible plants have been domesticated. Of these, just 20 provide about 90 percent of the world's food supply.

Hunting and gathering was the main way of life for most of human history. Often hunter-gatherers moved their camps with the seasons. They searched for different plants and animals throughout the year. Today few such societies are left. They remain mostly in environments that are too difficult for farming. One example is the Inuit. They hunt and fish along the Arctic shores of North America and Siberia.

Agriculture began about 10,000 years ago. It radically changed the way people saw the land around them and how they used it. Agriculture appeared when hunter-gatherers learned how to grow plants and tame animals for their own use. This innovation is called **domestication**. Many scientists think domestication first began in Southwest Asia. It also developed independently in other regions. (See the map of origins of domesticated plants.)

Learning how to raise animals and grow crops were two of the most important developments in human history. Farmers transformed the world's environments. They cleared land to plant crops like wheat and barley. They learned how to plow and irrigate land. Farming produced more food, so the same land could support more people. As a result, populations increased, and people could settle permanently in one place.

The first cities appeared in Southwest Asia more than 5,000 years ago. City life became possible when there was enough food so that some people did not have to farm. Instead, some of them worked as potters or weavers. Others became merchants and traders. Still others carried out governmental or religious tasks. Towns and cities began to grow. The growth in the proportion of people living in towns and cities is called **urbanization**. With the development of cities, population densities increased and communication became easier. As trade connected early cities, cultural diffusion increased.

✓ **READING CHECK:** *The Uses of Geography* How did domestication change how people see their environment and use land?

INTERPRETING THE VISUAL RECORD

*This ancient Egyptian wall painting shows domesticated cattle in Egypt. The Egyptians used cattle as draft animals for farming and as a source of meat and skins. **What are some other kinds of domesticated animals that you are familiar with?***



General Areas of City Locations



1 River crossing



2 Natural harbor



3 Head of delta



4 Defensive hilltop site



5 Defensive site controlling a pass

Urban Geography

Cities are centers of culture, trade, government, and ideas. Urban geography—the geography of cities—is an important subject. It includes the study of city locations, sizes, land use, and urban problems.

City Growth A number of important factors have influenced the site and growth of cities. One is location near key resources. Other factors include location along transportation and trade routes and at easily defended sites. (See the diagram.) Many of the world's greatest cities grew up where two or three of these factors were present. Once cities are established, continued access to other cities and resources allows them to grow and prosper.

Many cities are found near freshwater, which is a key resource. For example, many cities lie along rivers, particularly in dry regions. Cities are also found where waterfalls or rapids kept large boats from going farther upstream. Other cities are located near important mineral resources. For example, Johannesburg in South Africa grew near huge gold deposits. Houston, Texas, became an important city when oil deposits were found nearby.

Because resources are not distributed evenly, trade routes have always been vital to human societies. As a result, cities rose along these routes. For example, London and Philadelphia grew as great river ports near the ocean. Chicago expanded due to its railway connections near the shore of Lake Michigan. Singapore, in Southeast Asia, grew along a major shipping route.

Easily defended sites protect cities from invasion and allow them to prosper. For example, Jerusalem began on a hilltop that was easier to defend than surrounding lowlands. The first settlers in Paris lived on islands in the middle

INTERPRETING THE DIAGRAM

*This diagram shows the types of locations that are likely to be selected as sites for villages, towns, or cities. Topography, access to resources and transportation routes, and other factors have long affected settlement locations. **How might these locations allow cities to grow and prosper? Can you think of some examples of cities that have these types of locations?***



Over the last 5,000 years, the world's population has gone from less than 1 percent urban to 45 percent urban.

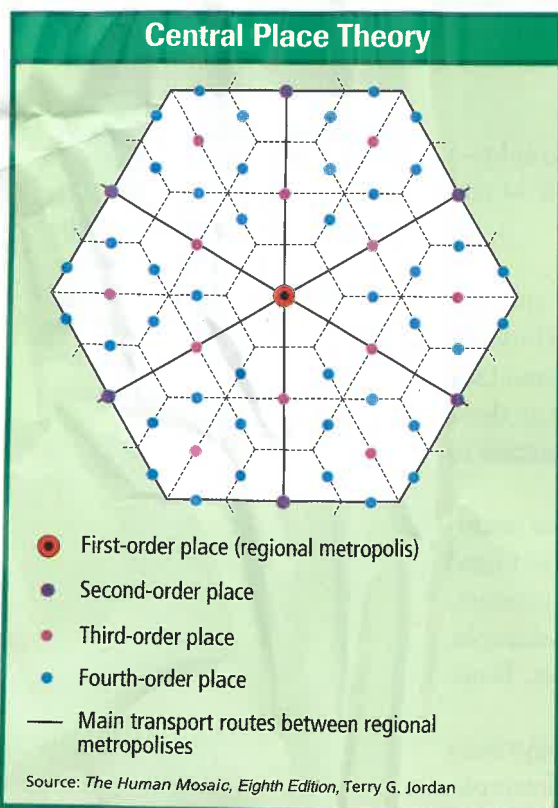
of the Seine River for protection. How do you think resources, trade routes, and defensive sites influenced the location of towns and cities near you?

✓ **READING CHECK:** *Places and Regions* What factors have influenced city location and growth?

Patterns in the Size and Distribution of Cities The world has many villages, fewer towns, still fewer cities, and a handful of giant urban areas. The larger places are, the fewer there are. Geographers call this pattern a hierarchy of urban places. Cities and settlements are different in size because they serve different functions and purposes.

Villages have only a few hundred people. Stores in villages usually sell basic goods, such as food or farm supplies. Towns are larger than villages. They may have a few thousand people. Towns have some stores that sell goods for daily life and others that sell items needed less often. These items may include books, cars, or furniture. Towns may also have local and area government buildings, like county courthouses.

Cities, with several thousand to a few million people, have more services. Cities have large shopping centers, government offices, and many businesses. They also have hospitals and perhaps museums and universities. Some cities grow into huge urban areas called **world cities**. World cities are the most important centers of economic power and wealth. Their economies are dominated by the headquarters of global banks and businesses like advertising and insurance. London, New York, and Tokyo are all world cities. Each is the financial, business, and government center for a huge area and is important to the global economy.



FOCUS ON GEOGRAPHY

Central Place Theory In the 1930s the German geographer Walter Christaller noticed that there was a regular pattern to the locations of different-sized urban places. Why, he wondered, was this so? Christaller developed a theory to explain the patterns in the size and location of cities. We call his idea central place theory.

Christaller thought that the best arrangement of different-sized cities serving different functions would take the shape of a hexagon. At the center of the hexagon would be a first-order place. Such a place would be the area's largest city and would have the most goods and services. Evenly spread around this city would be smaller towns ranked as second-order, third-order, or fourth-order, according to their size. These smaller towns would offer fewer goods and services. However, there would be more of them. According to Christaller, this pattern represented the most efficient arrangement of urban places.

However, in the real world cities and towns do not form a perfect hexagon. This is true because the most efficient arrangement is not the only factor involved. Environmental factors, such as mountains or rivers, affect settlement location. Cultural factors, such as political boundaries or trade routes, also play an important role.

INTERPRETING THE MODEL This model shows the distribution of different-sized urban places according to central place theory. How can this model be applied to present information about the locations of urban places in the real world?

Nevertheless, central place theory is useful because it does help explain certain geographic patterns. First, there are fewer large cities than small ones. Large cities are also generally farther apart. People usually find specialized goods and services in large cities but not in small towns. Finally, people in small towns often travel farther to find goods that they need less often. In short, the theory does not match the real world perfectly. However, it helps us understand how cities of different sizes are arranged and connected.

✓ **READING CHECK:** **Human Systems** How does central place theory help explain patterns in the size and distribution of cities?

Urbanization Today Both the number and proportion of people living in cities has grown dramatically over the last century. Probably in the next 15 years, more than half of the world's people will live in cities. This growth results not only from the natural increase of populations but also from people leaving rural areas for cities.

In developed countries about 75 percent of the people live in cities. However, urban growth in the world's rich countries is now slow. There are several reasons for this trend. First, the populations of most rich countries are either stable or are increasing slowly. Also, many people prefer the peace and quiet of rural areas to fast-paced cities.

Less than half of the people in developing countries live in cities. However, these areas are rapidly being urbanized. As the populations of these countries grow, more of their people come to the cities looking for jobs. In fact, many of the world's largest cities today are found in developing countries.

✓ **READING CHECK:** **Places and Regions** How do patterns of urbanization differ in developed and developing countries?

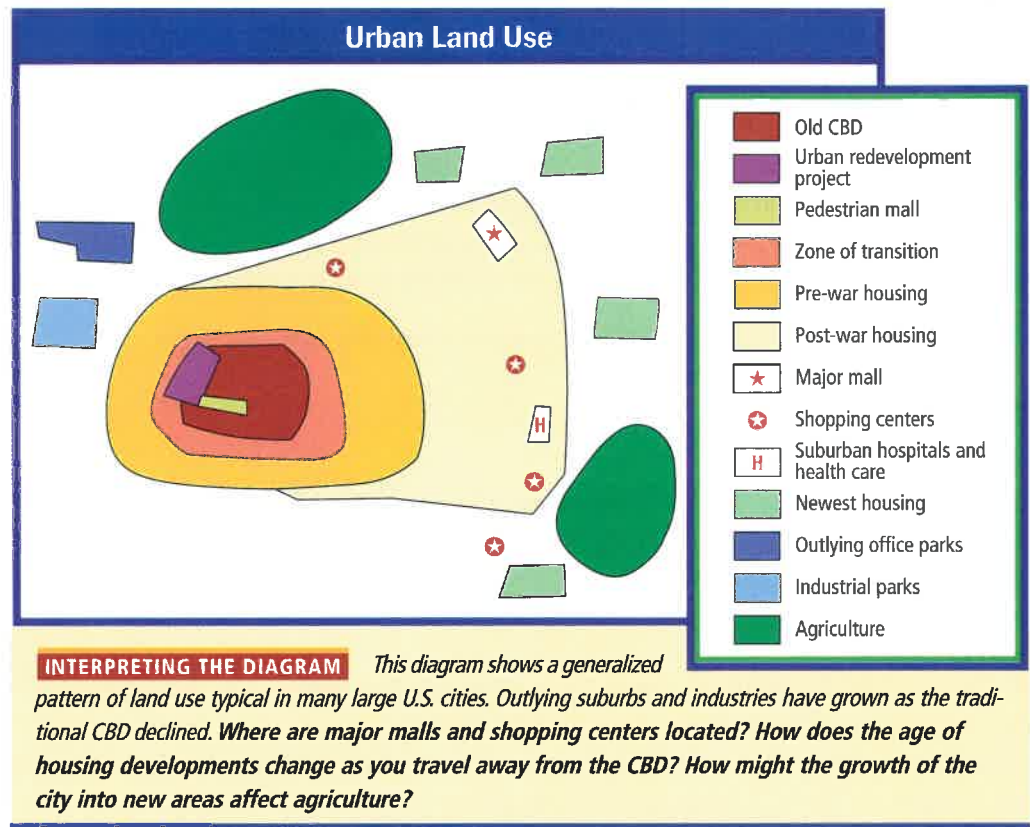
Urban Land Use Though they are all unique, cities around the world function in much the same way. They are home to businesses, government agencies, housing, industries, and religious and social groups. All these activities and groups are connected by different forms of transportation.

Most city centers are dominated by large stores, offices, and buildings. Such an area is called a **central business district (CBD)**. CBDs are transportation



INTERPRETING THE VISUAL RECORD

The city of São Paulo, Brazil, is an example of a huge, rapidly growing city in a middle-income country. Between 1975 and 2000 the city's population grew by an incredible 77 percent. Today São Paulo has more than 17 million people and is one of the five largest cities in the world. What do you think attracts immigrants from rural areas to cities like São Paulo?



Traffic problems are common in large cities. Roads are clogged during rush hours, when large numbers of people travel to or from work. Traffic problems are particularly common in U.S. cities, such as Los Angeles (below), because Americans rely so heavily on cars as the main means of transportation. Cars transport few people per vehicle and require a lot of space to park.

hubs where roads, railroads and buses come together. Outside the CBD are factories and warehouses, which need larger amounts of land. Farther away from the city center, housing takes up most of the land. Small shopping strips with convenience stores line major streets, particularly at major road junctions. Still farther out are the suburbs, which usually have the newest houses. Some suburbs were once small towns that have been engulfed by a spreading city. Other suburbs are in areas that were once farmland. (See the Urban Land Use diagram.)

Modern cities are often ringed by one or more major highways. Along these roads, many new clusters of tall office buildings and big shopping centers have appeared. These clusters of large buildings away from the CBD are called **edge cities**. Increasingly the residents of the suburbs work and shop in edge cities. As a result, many people no longer need to visit the original CBD.

Urban Problems Most cities today face serious social, housing, transportation, or environmental problems. The key social problem in cities is often poverty. This is particularly true in developing countries. In those countries many city-dwellers lack good jobs and housing.

It should not be surprising that air, water, and land pollution are also urban problems. These problems are made worse because cities concentrate people, homes, and industries in small areas. Some countries have reduced pollution by using new technologies and public education programs. However, many cities in developing countries face serious pollution problems. Some do not have adequate sewer systems. Water supplies may not be safe to drink. Also, many poorer countries are just starting to enforce laws that control industrial pollution.

✓ **READING CHECK:** **Human Systems** What are some common urban problems and their causes?



Rural Geography

Rural landscapes are found outside cities. Agriculture is the key economic activity in most rural areas. However, people who live there also work in forestry, mining, and recreation. Rural areas may have land set aside in national parks and wildlife preserves.

Subsistence Agriculture The kind of agriculture practiced most widely around the world is called **subsistence agriculture**. It is found in many parts of Africa, Asia, and Central and South America. In subsistence agriculture, food is produced by a family for its own needs. Anything extra—usually very little—may be sold for important supplies, like cooking oil, clothes, or fuel for a lamp. This kind of agriculture uses little if any machinery.

Subsistence agriculture takes different forms around the world. In many regions families farm the same fields for generations. In more difficult environments, such as tropical forests, **shifting cultivation** is common. In shifting cultivation, farmers clear trees or brush for planting. Sometimes they burn the debris. Then the fields are farmed for a few years, but fertility steadily decreases. The field is eventually abandoned, and then a new field is cleared. Crops such as maize (corn) in South America and manioc (cassava) in Africa are grown in this way.

Another type of subsistence agriculture is **pastoralism**—herding animals. Cattle, goats, horses, sheep, or other animals provide milk and meat for pastoralists. In addition, animal skins or hair are used for shelter and clothing. Pastoralists usually follow regular migration routes. In semiarid regions they migrate with their herds across open grasslands. Others move their animals up and down mountain slopes with the seasons. Pastoralists often trade animal products for grain or vegetables. A few animals may be sold in towns to buy other supplies. In pastoralist cultures, animals are more than just sources of food. Herds represent wealth and social prestige.



INTERPRETING THE VISUAL RECORD

Subsistence agriculture is characterized by low levels of technology. For example, this farmer in China is watering his crops without the help of modern farm machinery. How might the technology used in this photograph be different in a developed country with advanced farming technologies?

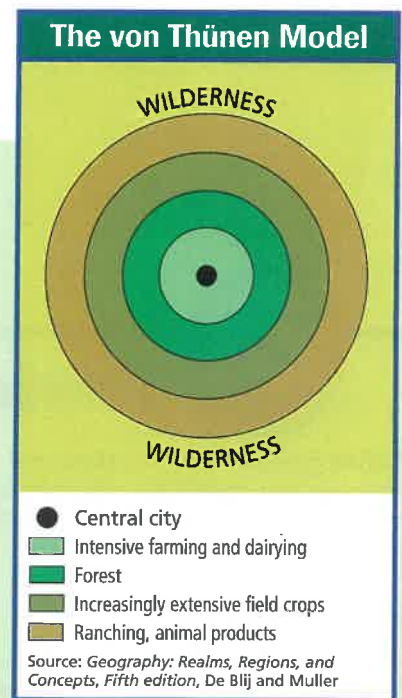
Connecting to ECONOMICS

The von Thünen Model

Johan von Thünen (1783–1850) was a German scholar and farmer. He noticed regular patterns of land use in farming areas of southern Germany. Based on these patterns, von Thünen developed one of the first spatial models in geography. Von Thünen's model is used to explain the location of different types of agriculture in a market economy.

Von Thünen noted that land closest to urban areas has the highest value. Land values decrease as one moves away from the city. Therefore, the most intensive forms of agriculture—those that generate the most profit on the smallest plots of land—are located closer to urban areas. Here, activities such as dairy farming and market gardening are common. Less intensive agricultural activities—those that require large amounts of land to be profitable—take place farther away from cities. In these areas, activities such as ranching and grain farming are found.

Analyzing Information How does von Thünen's model explain the location of different types of agriculture in a market economy?



INTERPRETING THE VISUAL RECORD

The application of advanced farming technologies to increase production is a key feature of market-oriented agriculture. Here, detailed soil fertility maps, GPS technology, and computers are used to apply the correct amount of fertilizer to each part of this farmer's fields. How might these technologies increase yields and reduce costs?



Market-Oriented Agriculture Another type of agriculture is **market-oriented agriculture**, or commercial agriculture. Under this system, farmers grow products to sell to consumers. They specialize in growing crops that other people want to buy and that they can sell at a profit. Often, crops are first sold to companies that process and package them. Then consumers buy the final products in stores. This kind of agriculture is the most common type found in developed countries.

Scientific advances have made market-oriented agriculture very productive. Those advances include new animal breeds, fertilizers, pesticides, and plant varieties. In fact, commercial farmers depend on the latest technology to be successful. Their farms and ranches are often enormous in size. Yet because of technological advances, they require fewer and fewer workers. Some commercial farms are not owned by families at all. Instead, they are parts of large corporations. Advanced commercial farming is referred to as **agribusiness**. Agribusiness is the operation of specialized commercial farms for more efficiency and profits. It is characterized by huge farms with close links to other parts of the food industry.

✓ **READING CHECK: Human Systems** What role has technology played in the development of market-oriented agriculture?



Review

Define domestication, urbanization, world cities, central business district (CBD), edge cities, subsistence agriculture, shifting cultivation, pastoralism, market-oriented agriculture, agribusiness

Reading for the Main Idea

1. **Human Systems** When do many scientists think agriculture began? Where and when did cities originate?

2. **Places and Regions** How is land use typically arranged in urban areas?

Critical Thinking

3. **Comparing** Why do you think market-oriented agriculture is more productive than subsistence agriculture?
4. **Analyzing Information** How might large-scale commercial farming be possible in

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Keyword: SW3 HP6

areas with arid or semiarid climates? What environmental consequences might such farming have in dry regions?

Organizing What You Know

5. Using the information in this section, draw a sketch map showing land use in a typical urban area.

Geography for Life

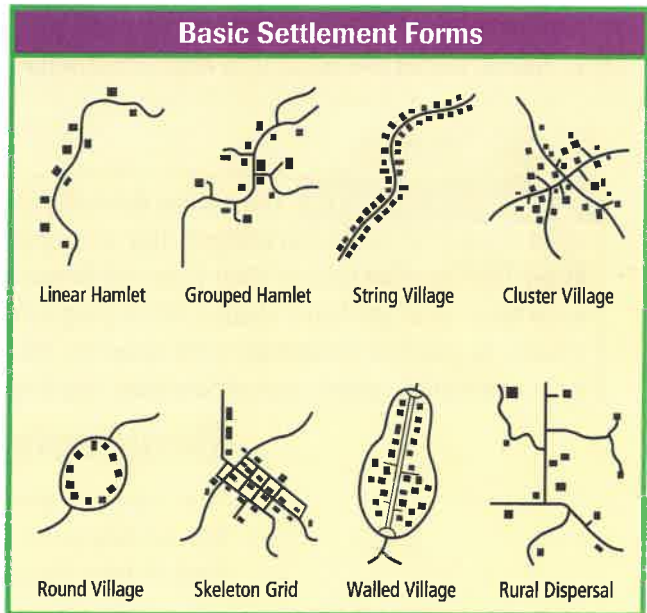
Rural Settlement Forms

Settlements are purposely grouped and organized clusters of houses and buildings. Some rural settlements have only a few buildings grouped loosely together. We call these hamlets. Other settlements may be larger, such as villages. These settlements take various forms.

Perhaps you live in or have visited a rural community. In such places, homes and other buildings may be scattered and linked by a network of roads. Wooded areas or farmlands may separate these homes and other buildings from each other. On the other hand, a rural community might grow from a cluster of farmhouses separated from agricultural fields. Hamlets like these are found in many hilly rural areas throughout Asia and Europe. Some of these hamlets have a linear form. That is, buildings are clustered along features such as roads or streams. Sometimes hamlets are groups of buildings clustered at the intersection of several roads.

Larger villages may take forms similar to hamlets. Historically, houses in villages were clustered together for defensive reasons. People could defend themselves better against outsiders by grouping together. In fact, many old villages occupy easily defended sites, such as hilltops. Round villages and walled villages are often clustered together in

A hamlet near Kathmandu, Nepal



Human Geography, William Brown Publishers

this way. Many old cities around the world began behind strong defensive walls. Also, like hamlets, some villages are grouped along rivers, roads, streams, or other linear features. These places are called string villages. For example, in many lowland areas of western Europe, villages are located along waterways. Villages grouped around road intersections are called cluster villages.

Defense is not the only reason houses in a village are clustered together. Such settlement forms may also leave the best land available for farming. By occupying hilltops or rocky areas, more good farmland is available. For example, some Japanese villages are so tightly packed together that only narrow passages remain between houses. This pattern reflects the need to farm all the useful land. In the hilly parts of Europe, many villages are clustered on hillsides. This arrangement leaves the level land for farming.

Applying What You Know

- 1. Contrasting** How do string, or linear, settlement forms differ from cluster forms?
- 2. Analyzing Information** Why do you think road intersections and rivers are common locations for hamlets and villages?

Political Geography

READ TO DISCOVER

1. How are government and geography connected?
2. What are three main types of geographic boundaries?
3. How do conflict and cooperation affect international relations?

Reading Strategy

READING ORGANIZER Draw a line down the center of a sheet of paper to create two columns. Title one column What I Know. Title the other column What I Learned. Before you read, write down what you know about political geography in the first column. As you read the section, write down the information you learn in the other column. Include key terms and their definitions.

DEFINE

natural boundaries
 cultural boundaries
 geometric boundaries
 nationalism
 totalitarian governments
 democracy
 tariffs
 quotas

Geography and Governments

The study of government and politics is an important part of geography. In this section you will learn how control of Earth's surface is divided. We will also look at how the culture of a place influences its government.

Government and Development There are about 200 countries in the world today. A country has an independent government, which has authority over territory within its borders. Governments are free to make their own laws and have their own leaders. Usually, governments negotiate and deal with each other in peace. We call this diplomacy. Governments interact with each other through trade agreements and international organizations. However, disputes between countries sometimes lead to conflict or war.

Good governments protect the lives and property of the people who live in a country. They also protect the freedoms and rights of their citizens. In doing so, they help ensure the conditions needed for economies to develop and for people to prosper. In many developing countries, governments are unstable. That is, they do not last long or have much authority. Corruption can also be a problem. Political leaders may use their power only to enrich themselves and their friends.

Officials sign the Treaty of Versailles in 1919, which ended World War I. International agreements and diplomacy through government representatives are basic features of the world's independent countries.



Cultural Beliefs and Government The cultural beliefs of different groups affect how governments are set up and operate. These beliefs influence government decisions and public policies. For example, a people's cultural beliefs might lead to laws that force businesses to close on special religious days. Cultural beliefs also affect the way citizens see their duties and responsibilities.

To see how these cultural influences can work, consider Israel, a country in Southwest Asia. After World War II, Israel was established as a homeland for Jews from anywhere in the world. Israel's role as a Jewish homeland has guided many of its government policies. For example, any Jew who wishes to become a citizen of Israel can do so. In fact, many Jews have moved there from around the world. Still, people in Israel debate the role of religion in government and society. About 20 percent of Israeli Jews strictly follow the beliefs of Judaism. These people are called Orthodox Jews. They tend to believe that religious values should play an important role in shaping government policy. Most other Israeli Jews seek to limit the role of religion in Israel. In fact, Israeli law guarantees religious freedom for all people, Jewish or not. About 20 percent of Israeli citizens are not Jews. Most of these people are Arabs who have very different cultural beliefs and practices. They have often opposed Israel's immigration, military, and foreign policies.

✓ **READING CHECK:** *Human Systems* How can cultural beliefs influence citizenship practices and public policies?

Geographic Boundaries

Three main types of boundaries separate countries from each other. Boundaries that follow a feature of the landscape are called **natural boundaries**. Mountains make good natural boundaries. They are difficult to cross and are permanent markers. Rivers, on the other hand, are often troublesome boundaries. Many rivers are important transportation routes for more than one country. In addition, river channels may move. Other natural boundaries include deserts, lakes, and oceans.

Borders that are based on culture traits, such as religion or language, are called **cultural boundaries**. For example, the border between mostly Muslim Pakistan and mostly Hindu India was established largely along religious lines. The same is true on the island of Ireland. A border divides the island between mostly Protestant Northern Ireland and the mostly Roman Catholic Republic of Ireland. Many cultural boundaries are based on language. The boundary between Portugal and Spain is an example.

Boundaries that follow regular, geometric patterns are called **geometric boundaries**. These borders are usually straight lines drawn without regard to environmental or cultural patterns. Geometric boundaries are often based on lines of latitude or longitude. For example, the border between the United States and Canada lies mostly along the 49th parallel. In colonial Africa, European countries drew many geometric boundaries that are still used today. Some of these boundaries have led to problems because they divide the territory of different ethnic groups.

✓ **READING CHECK:** *Human Systems* What are three different types of boundaries that geographers study?

The Rio Grande is a natural boundary between Mexico and the United States.



Conflict and Cooperation

The study of international relations is another important area of political geography. The field focuses on foreign policies and relations between the world's countries. Very few countries today are isolated. Instead, they are affected by events in both nearby and faraway places.

Political Conflicts Political conflicts, both within and among countries, are common. There are many reasons for this. Most people feel proud of their culture and country. Feeling pride and loyalty for one's country or culture group is called **nationalism**. These feelings are often expressed in special songs, symbols, and writings. Unfortunately, one group's pride can conflict with that of another. Competing feelings of nationalism have led to problems time and again. Conflicts can also result from other differing culture traits, such as religion. A modern example is Sri Lanka, where a Hindu minority has battled the Buddhist majority.

How a group of people should be governed has also been a source of conflict. One person or a small group of people governs some countries. They have full authority to make laws and decisions. In these **totalitarian governments** one person or a few people decide what is best for everyone. The people have little or no say in how their country is governed. Communist countries, such as North Korea and Cuba, have such governments. In other countries, all citizens have a voice in their government. These countries are based on **democracy**. This is a system in which the people decide who will govern. They choose their leaders by voting in free elections. Democratic governments value individual freedoms and human rights. The United States and many other countries have democratic governments.

Economic issues also lead to conflicts. For example, countries often establish **tariffs**—taxes on imports and exports. Countries also set **quotas**—limits to the amount of a product that can be imported. Tariffs and quotas usually help protect a country's industries from foreign competition. However, they can also cause trade disputes among countries.

Terrorism Some political conflicts involve the use of terrorism by one or more individuals or groups. Terrorism is the use of violence and fear as a political force. Terrorists act for many reasons. For example, some want independence for homelands that may be part of or under the control of another country. Others might work to further various political goals, such as different public or social policies. Terrorists do not usually act under the authority of a particular government. However, governments sometimes protect and even support the actions of terrorists who share similar political goals. Stopping terrorism is difficult, particularly in South America, Southwest Asia, and parts of Europe.

Even the United States has been directly affected by terrorism. One of the worst acts of terrorism in history happened on September 11, 2001. On that day, fundamentalist Muslim terrorists stunned the world by hijacking four commercial airliners. The terrorists crashed two of the planes into the twin towers of New York's World Trade Center, collapsing the buildings. The third plane hit the Pentagon, just outside Washington, D.C., and the fourth crashed in rural Pennsylvania. The attacks killed thousands of people. In the wake of these events, the U.S. government worked to enlist the cooperation of other

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GO TO: go.hrw.com

KEYWORD: **SS Attack**

FOR: Web sites about the events of September 11, 2001, and the aftermath



countries in a global effort to defeat terrorism. The United States was not always able to get the level of cooperation it sought from all countries in military, political, and security matters.

International Cooperation Countries often cooperate with each other. They do this for two main reasons—political and economic benefits.

Political and military cooperation are most developed in the United Nations (UN). Nearly all of the world's countries are members of the UN. As a result, it is the most important international organization. In the UN, representatives of the world's countries can discuss international issues and voice their concerns. The UN's main goals are settling disputes between countries and trying to prevent wars. Sometimes, the UN sends peace-keeping military forces to warring regions. It also tries to solve global problems such as disease, hunger, and illiteracy.

Many countries benefit from economic cooperation and free trade. This cooperation can help countries produce goods at lower costs and reach larger markets. People can then buy those goods at lower prices. Economic cooperation can also end or reduce tariffs and quotas. For example, the World Trade Organization (WTO) works to make trade between countries fairer and easier. Most countries belong to the WTO. You will read about many other important economic organizations in this textbook.

READING CHECK: *Human Systems* What are the main reasons countries cooperate with each other?



©2001 *The Record* (Bergen, NJ), Thomas E. Franklin, Staff Photographer

INTERPRETING THE VISUAL RECORD *The terrorist attacks on the World Trade Center and the Pentagon in 2001 killed thousands of people. Rescue workers and firefighters, such as these, faced the grim task of searching for victims. How might images like this one inspire people to work to defeat terrorism around the world?*

Section
3

Review

Define natural boundaries, cultural boundaries, geometric boundaries, nationalism, totalitarian governments, democracy, tariffs, quotas

Reading for the Main Idea

- Human Systems** How do good governments promote economic development?
- Places and Regions** What physical and cultural factors might influence the ways a country's boundaries are established?

- Human Systems** How do organizations like the United Nations and the World Trade Organization promote international cooperation?

Critical Thinking

- Analyzing Information** What kinds of boundaries surround your state? What kinds surround the United States?

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Keyword: SW3 HP6

Organizing What You Know

- Copy the chart below. Use it to describe the features of totalitarian and democratic forms of government. List examples of each.

Totalitarian	Democratic

Geography for Life

Technology and the Environment

People depend on their environment for clothing, food, fuel, and shelter. We also adapt to the environment and modify it to better suit our needs. Throughout history, major technological innovations have caused large-scale changes in the environment and in human societies.

Fire

One of the earliest examples of people using technology to change the environment is the use of fire. Early humans used fire to stay warm and to cook food. They also used fire to clear brush, improving grazing lands for the animals they hunted. Much later, people used fire to clear land for farming or raising livestock. By using fire, people changed the landscape over wide areas.

The Steam Engine

In the 1700s steam power became the main power source for industry. As well as powering factory machines, steam engines were used to power ships and trains. Steam-powered vehicles were very successful. They made travel faster, safer, and more reliable. As a result, people changed the way they thought about long-distance travel and trade. Soon railroad lines were built throughout Europe and North America, and then in countries around the world. Railroads helped unify huge countries like the United States, Canada, Russia, and India. Then steamships linked countries, and global trade increased.

As the use of steam engines increased, so did the demand for coal, their main fuel. As a result, steam engines indirectly led humans to modify the environment as they dug large coal mines around the world. In addition, burning coal caused air pollution, which damaged the environment. Industrial cities of the 1800s, such as London and Birmingham, had terrible smog.

Gasoline and Diesel Power

In the 1900s gasoline engines and then diesel engines began to replace coal-powered steam engines. Gasoline and diesel fuel were particularly suitable for cars and trucks. The rapid development of automobiles led people to modify the environment again with roads and highways. Webs of paved roads soon connected cities, towns,

and rural areas. Today the United States alone has more than 2.3 million miles (3.7 million km) of paved roads.

In developed countries, gasoline and diesel machinery replaced human and animal power in agriculture. Patterns of food production and distribution around the world shifted as a result. Also, fewer farmers were needed to plow, plant, and harvest. These changes allowed more and more people to move from rural areas to the cities. This trend continues today as use of machines for agriculture is becoming more widespread in developing countries.

Electricity

With electricity, power could be transmitted over long distances. In addition, factories could be built farther from their power sources. Cities and roads could be lit more easily and safely. New electric machines also made many household jobs easier and faster, giving people more free time. In agriculture, electric motors powered farm machinery, water pumps, and machines used to process crops. Even fewer farmers were needed to feed the rest of the population. For example, in 1900 it took about four

The development of gasoline as a fuel for cars has led to environmental changes such as the expansion of roads and an increase in air pollution.





INTERPRETING THE VISUAL RECORD *This image of Earth's lights at night shows how people have used electricity to transform the environment. The brightest areas are generally the most urbanized,*

but not necessarily the most densely populated. Which areas appear the brightest? Which areas are dark? What might this image indicate about the level of development in these regions?

farmers to feed 10 people. In the United States today, one farmer produces enough food to feed nearly 130 people.

The use of electric power has also caused direct environmental change. Coal and natural gas are among the

This dam on the Columbia River in Oregon shows how humans modify the environment to generate electricity.

resources used to generate electricity. Mining and drilling for these resources has altered, and even damaged, landscapes. Dams can also generate power. Building a dam affects the upstream environment by creating a lake where none had been. Downstream, flooding is reduced.

Environmental Change

As these examples show, technology allows people to alter their environment in important ways. The rate of technological developments has greatly increased over the last several hundred years. Can you think of other technological innovations that have allowed societies to change their environment?

Applying What You Know

- Evaluating** How important are major technological innovations, such as fire, steam power, diesel, and electricity, that have been used to modify the environment?
- Comparing** How does environmental change caused by the development of gasoline power and diesel power compare to change caused by the steam engine?

CHAPTER 6

Review

HOLT

Geography's Impact Video Series

Review the video to answer the closing question:
How might a country with an economy based on primary economic activities develop its economy?

Building Vocabulary

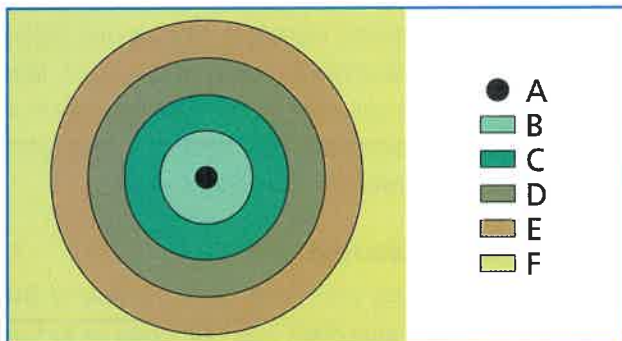
On a separate sheet of paper, explain the following terms by using them correctly in sentences.

market economy	subsistence agriculture
command economy	market-oriented agriculture
developed countries	natural boundaries
infrastructure	cultural boundaries
developing countries	geometric boundaries
domestication	nationalism
urbanization	democracy
central business district (CBD)	

Locating Key Places

On a separate sheet of paper, match the letters on the diagram with their correct labels.

intensive farming and dairying	field crops
forest	ranching, animal products
wilderness	central city



Understanding the Main Ideas

Section 1

- Human Systems** Which type of economic activity is located at the site of the resource being exploited? Which activity can be located almost anywhere?
- Human Systems** What are some measures of development?

Section 2

- The Uses of Geography** How did the development of early cities affect people's daily lives?
- Human Systems** How do people satisfy their basic needs with subsistence agriculture?

Section 3

- Human Systems** What are some of the ways countries interact with each other?

Thinking Critically

- Evaluating Information** What factors do you think are most important in determining the level of economic development and standard of living of a country? Why?
- Summarizing** How have humans modified the physical environment since the development of agriculture?
- Analyzing** How have cultural beliefs influenced public policies and citizenship practices in your community?

Using the Geographer's Tools

- Interpreting Diagrams** Study the chart of economic activities in Section 1. How might changes in transportation affect the location of different economic activities?
- Interpreting Charts** Study the chart of developed and developing countries in Section 1. How might some of the different categories of information shown in the chart be related?
- Preparing Sketch Maps** Use the student atlas at the beginning of this book and the information in Section 3 to find a country that has both a natural boundary and a geometric boundary. Draw a sketch map of the country, showing what these boundaries are based on. Why do you think these boundaries were selected?

Writing about Geography

Write a short article that summarizes how subsistence agriculture and market-oriented agriculture are different. What are the main differences between these two forms of agriculture? In general, how is technology used in each system? Where in the world is each type common? When you are finished with your article, proofread it to make sure you have used standard grammar, spelling, sentence structure, and punctuation.

S K I L L B U I L D I N G

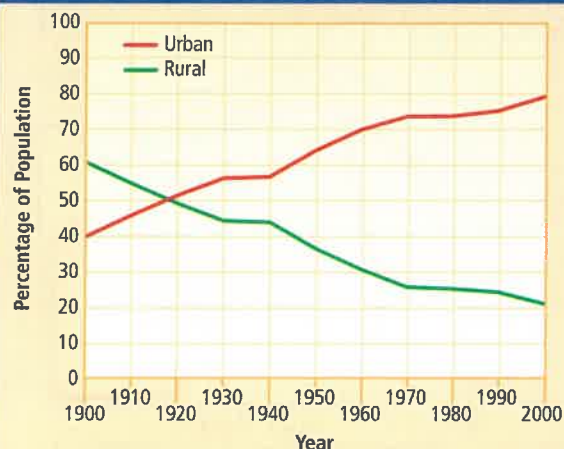
Gathering Field Data

Places and Regions Use a notepad and pencil to gather field data about urban land use in your area. Start in the downtown or CBD of your closest urban area. Take notes about what types of buildings you see, how high they are, and how they are used. Then walk in one direction away from the downtown area, taking more notes along the way. When you are done, try to answer the following questions: How is land used differently as one travels away from the downtown? Why do you think this is?

Interpreting Graphs

Study the line graph below. Then answer the questions that follow.

U.S. Rural and Urban Populations, 1900–2000



Source: U.S. Census Bureau

- In 1990, how many more Americans were living in an urban environment than were living in a rural environment?
 - 30 percent
 - 40 percent
 - 50 percent
 - cannot be determined

- During which three decades did the most dramatic increase in urban population occur?

Analyzing Secondary Sources

Read the following passage and answer the questions.

“The first cities appeared in Southwest Asia more than 5,000 years ago. City life became possible when there was enough food so that some people did not have to farm. Instead, some of them worked as potters or weavers. Others became merchants and traders. Still others carried out governmental or religious tasks. Towns and cities began to grow. The growth in the proportion of people living in towns and cities is called urbanization.”

- When did city life become possible?
 - after people became potters and weavers
 - more than 15,000 years ago
 - when there was enough food that some people did not have to farm
 - after trade connected early cities
- Explain how the development of cities affected people’s occupations.

Alternative Assessment

PORTFOLIO ACTIVITY

Learning about Your Local Geography

Group Project: Research

Plan, organize, and complete a research project on the economic activities in your community. Assign one person each to research one of four main kinds of economic activities that are found in your community. Check your local library or chamber of commerce to find information. Try to learn about the different jobs that people do and which activities employ the most people in your community. Then create a pie graph that estimates the percentages of people working in primary, secondary, tertiary, and quaternary activities. What did you learn from your research?

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Internet Activity: go.hrw.com
KEYWORD: SW3 GT6

Access the Internet through the HRW Go site to create a data profile of one country from each of the six populated continents. Your data profile should include information from the following categories: people, economy, environment, technology, and trade. Use information from the World Bank to create your data profile.



Geography

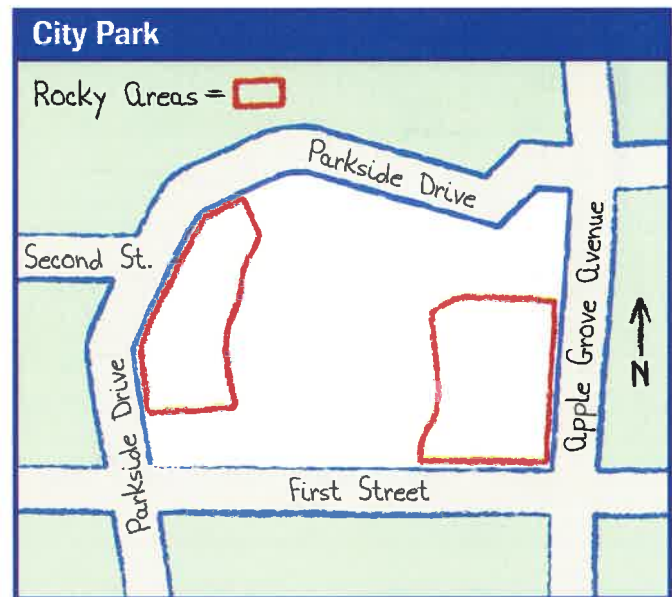
Skill-Building Workshop

WORKSHOP

Using Geographic Information Systems

As you read in Chapter 1, a geographic information system is a special computer system. A GIS stores, displays, and maps locations and their features. Geographers can use GIS software to examine relationships among our planet's physical and human features. The software helps researchers find patterns that may help solve complex problems. For example, geographers can use a GIS to identify areas that are favorable for growing crops. Map layers may show areas with ample water, rich soils, and favorable terrain for farming. Once a GIS merges those layers, good locations for farming become easier to identify. A GIS can also be helpful in urban planning. A planner might use a GIS to help plan an urban park or locate areas ideal for business, industry, or residential use. All of the information that a researcher needs to do such work can be translated into map layers. Combining those map layers gives the researcher a more complete image of the characteristics of the area under study. With the development of powerful personal computers, GIS technology has become more accessible. Insurance companies, farmers, local governments, health departments, and schools now use GIS technology to solve problems and to display spatial information.

Developing the Skill In this workshop you will practice making a simple GIS plan with graph paper and transparency overlays. However, a real GIS plan is a complex process. Such a plan requires special software and sets of data. The software is the tool that tells the computer what to do. The software must have a database program to manage the information, a spreadsheet program to process the data, and a programming language to write functions for the data. It must also have the ability to zoom in and out and to pan across the computer screen. For example, a researcher might choose to zoom in, or enlarge, a small area of a map. Doing so will let a researcher see more



detail. At other times a researcher might want to zoom out, or view a larger area in less detail. Doing so will help the researcher see how a small place fits into surrounding areas.

The geographic data is the fuel for the whole process. For example, census data might tell a researcher the average personal income in different areas of a city. Data can also be gathered from field work. Consider how a park planner might use GIS to create or redesign a park. The planner will want to observe the terrain and other physical features of areas throughout the park. For example, that planner will want to identify areas with rocky terrain. (See the illustration.) He or she will also want to identify areas with existing vegetation, easy access to neighboring streets, and broad open spaces. That and other information can be displayed in map layers. By putting those layers together, the planner can decide which areas are best suited for gardens, parking, picnics, recreation, and other uses.

The most important part of GIS technology is the geographer or researcher using it. Because there is a risk of using too much data, the wrong data, or different scales of data, the geographer must be careful. For example, when using a GIS, it is very important that all the data provided is at the same scale and projection. In other words, each map layer should show the same area at the same scale.



Practicing the Skill

Now it is your turn to practice using a GIS. Work with a group of other students to design a new park in your community or redesign an existing park.

The tools you will need include graph paper, five transparency overlays, and transparency markers of different colors and width. You will also need a map of an existing park or another map of your community that you can use to find the best spot for a new park.

Create a base map for your park, using a black marker to show only park boundaries. You can then photocopy that base map onto your transparency overlays. Each overlay will become a layer in a detailed map of your park site.

Working with your group, study the park site you have chosen. Each group member should have a different task. Each will research the park site and create a map overlay based on his or her observations. Your group should create four map overlays in all:

- The first map layer should use one color to show the location of water sources, such as creeks, ponds, rivers, or streams.
- The second map layer should use one color to show areas with rocky terrain.

- The third map layer should use colors to mark areas with thick tree growth, scattered trees, or mostly grass.
- The fourth map layer should use one color to show contour lines. In this project, the contour lines do not have to be completely accurate. Simply use lines to identify flat, gently sloping, or steeply sloping areas. You might want to review the discussion of contour lines in Chapter 1. Because you could have many contour lines, you might want to analyze this map layer separately from the others.

When the map layers are completed, use an overhead projector to place the layers on top of each other. By doing this, the group should be able to identify areas that are best suited for gardens, picnics, parking, hiking trails, and other uses. In some cases you may need to use only one or two layers to identify areas suited for certain functions.

Then work with group members to develop a final “park plan.” That plan should include a map of your park and a written summary. The summary should describe why different functions were assigned to specific areas within the park. Gather all of your materials into a formal plan folder and make a presentation to your class.



The Geography of Terrorism

On September 11, 2001, just 19 men, 15 of them from Saudi Arabia, used simple weapons—small knives and razor blades—to hijack four airplanes. These men then used the planes to kill themselves and almost 3,000 innocent people, most of whom died at the World Trade Center in New York City. This horrible act set off a chain of events that resulted in two wars, thousands of additional deaths, and the destruction of billions of dollars worth of property.

How could so few, ill-equipped men bring about so much death and destruction? What cause could have been so important that they were willing to give up their lives

Above: Rescuers respond after a terrorist bombing of the Israeli embassy in Buenos Aires, Argentina. Below: The World Trade Center, September 11, 2001



to kill people they did not know? Why did these men target the buildings they targeted? What has been the effect of their actions on the way people live their lives?

To answer these questions is to take a closer look at terrorism, which has existed throughout history and occurs today at alarming rates in many regions of the world. Because it impacts the way people live around the globe, terrorism is an obvious topic of study for geographers.

What Is Terrorism?

Terrorism is not an easy term to define. Different governments, international agencies, and political groups define it in very different ways. Even the U.S. State Department, FBI, and the Department of Defense rely on different definitions.

To complicate matters, whether or not an act is considered terrorism can depend on a person's perspective—that is, which side he or she is on. Members of rebel groups using violence to overthrow what they believe is an unjust government would probably describe themselves as revolutionaries or guerrillas. Those opposed to their cause, however, would call them terrorists.

For example, in the mid-1980s an armed group called the Contras killed thousands of civilians in its attempts to overthrow the government of Nicaragua. Government officials in Nicaragua referred to the Contras as terrorists. U.S. President Ronald Reagan, who supported the Contras, called them “freedom fighters.”

While definitions and perspectives may differ, most people today would agree that terrorism is criminal activity involving the use of violence, or the threat of violence, to promote a particular cause. Terrorists' targets are usually innocent civilians, and the terrorists' motives are usually political, although some experts

The terrorist group Hamas claimed responsibility for the suicide bombing of this bus in Jerusalem.



believe that more and more terrorist acts are religiously motivated. In many cases the political and religious motives overlap.

Acts of terrorism are usually, but not always, carried out by individuals or groups not affiliated with a government. In fact, throughout history, terrorism has been the weapon of the weak—those who lack political and military power. As we know, however, these “weak” terrorists have the power to cause enormous suffering.

Terrorist Weapons and Tactics

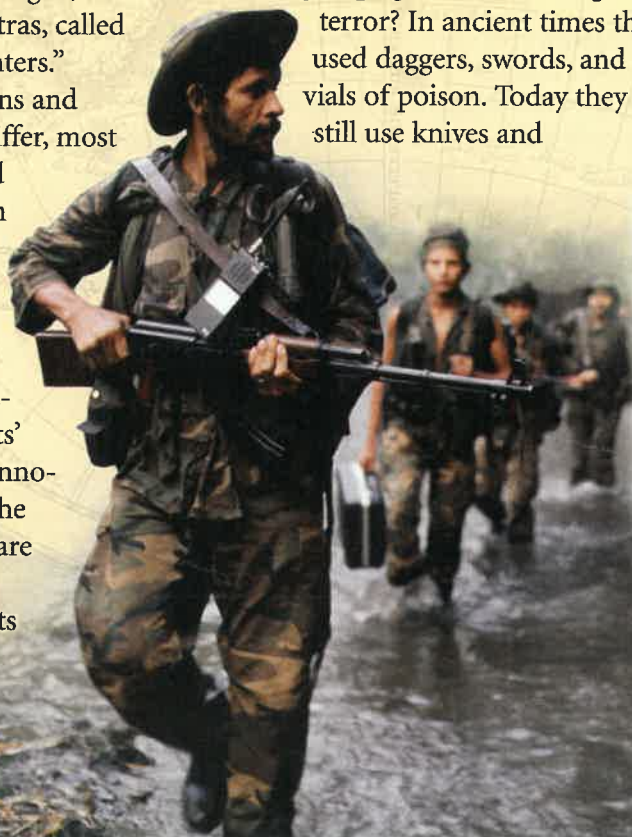
How do individuals or small groups go about creating terror? In ancient times they used daggers, swords, and vials of poison. Today they still use knives and

poisons, but they also use powerful bombs, automatic weapons, and grenade launchers.

Among the most used terrorist methods are bombings, hijackings, the taking of hostages, and assassinations. Commitment and resourcefulness are also important. In creating so much damage with such simple weapons the 9/11 terrorists demonstrated the effectiveness of dedication to a cause and careful planning.

Bombings Unfortunately terrorists have found that the materials and know-how needed to make a bomb are easy to acquire. Once

U.S. President Ronald Reagan supported the Contras in Nicaragua (at left), whom he considered to be “freedom fighters.” The government of Nicaragua saw the Contras as terrorists.



the bombs have been assembled, they can be strapped to a suicide bomber's body, loaded into cars or trucks and driven to the target site, or simply hidden along the side of a road.

Terrorists have been able to make powerful bombs. For example, an October 2002 nightclub bombing killed over 200 people on the Indonesian island of Bali. In 1983, Islamic Jihad terrorists detonated a bomb inside a U.S. Marine compound in Lebanon, killing almost 300 people.

Hostages and Hijackings

Taking hostages and hijacking airplanes are ways in which just a few terrorists can impact thousands, or even millions, of lives. At times, terrorists attempt to trade hostages for the release of other terrorists who have been captured and imprisoned. At other times, they attempt to trade hostages for safe passage to a desired location or for a ransom payment.

Cells A tactic that has helped terrorists avoid capture is their ability to maintain secrecy by working in cells. A cell is a very small group of terrorists who do not know the names or locations of other terrorists in the same organization. A network of such cells, in which only certain leaders know how to communicate with other cells, makes it difficult for counterterrorism personnel to identify and track down terrorists.

Media Coverage In today's world, terrorists plan and execute their acts to create maximum fear and to ensure widespread media exposure. Sometimes they target government or military installations, but often they attack civilians engaged in common, everyday activities, such as riding a bus or eating in a restaurant.

Terrorists often target symbols of the government, culture, or religion that they oppose. The 9/11 terrorists chose the World Trade



In the 1950s and 1960s, the National Liberation Front waged a violent campaign against the French for Algerian independence. The group is credited with developing the use of cells within terrorist organizations to protect the identity of members.

Center as a target because it symbolized the powerful U.S. economy that, in the terrorists' view, was damaging their religion and culture. The 9/11 terrorists also knew that the attack would generate massive fear and publicity.

The Beginning of Modern Terrorism

Experts debate the beginning of modern terrorism. Forced to pick a date, many would pick July 22, 1968, when three terrorists belonging to a sub-group of the

At the 1972 summer Olympics in Munich, Germany, a Palestinian terrorist group took 11 Israeli athletes hostage and killed them. As a worldwide TV audience watched the crisis unfold, the terrorists achieved their primary goal: publicity for their cause.

Two nightclubs on the beach in Bali, Indonesia, were bombed in October 2002. Rescuers helped search for survivors, but more than 200 people were killed in the blasts.



Palestine Liberation Organization (PLO) hijacked an Israeli commercial jet.

Although this was not the first hijacking of an airplane, it was the first that had a purpose beyond the terrorists' rerouting the plane to take them to a chosen destination. These hijackers had several political reasons for the hijacking, including trading their hostages for fellow terrorists who were in Israeli jails. Publicity was also a goal.



PLO terrorist marches in funeral for suicide bomber.

Through such terrorist acts, and others involving bombings and assassinations, the PLO became the model and the trainer for many of today's international terrorists. The PLO trained terrorists for other organizations at its training camps in Jordan and Lebanon. It also made the raising of money to fund its activities a priority, another first for modern terrorist organizations. From the late 1960s to the 1980s, the PLO laid the foundation for much of today's terrorism.

International and Domestic Terrorism

The development of highly sophisticated communication and other technology has led to an increase in international terrorism, which differs from domestic terrorism.

Newspaper readers in India learn of the capture of Saddam Hussein, who practiced state terrorism in Iraq for nearly 25 years before being toppled from power. Although terrorists usually crave publicity, these are not the type of headlines they have in mind.

International terror occurs across national boundaries or involves people from multiple countries. Al Qaeda, the terrorist group that committed the 9/11 atrocities, commits violent acts all over the world, and therefore is an international terrorist group.

Terrorists who operate wholly within the boundaries of a particular country and target only citizens of that country are domestic terrorists. The Ku Klux Klan, for example, is a domestic terrorist group that promotes racism in the United States.

State or State-Sponsored Terrorism

A variation of the types of terrorism described up to this point is a particular kind known as state or state-sponsored terrorism.

We use the term *state terrorism* when discussing governments that rule through the use of fear. Leading up to and following World War II, Adolph Hitler in Germany and Joseph Stalin in the Soviet Union created terrorist states to obtain and hold onto political power.

Other, more recent, examples include the governments of Argentina (1976–1983), Cambodia (1976–1979), and Iraq (1979–2003), which used torture, assassination, and mass killings to terrorize their citizens.

Other countries stop short of actually committing acts of terror, but they do sponsor terrorism. This means that they provide sanctuary and protection for terrorists. They also may supply money and other resources to help the terrorists commit their violent acts.

Countries such as Afghanistan, Iran, Sudan, and Syria have supported terrorist groups in recent years. Doing so enabled these weaker countries to secretly attack their much stronger enemies with less risk of retaliation than would be the case in an open declaration of war.

Think About It

1. How would you define terrorism? Do you believe that civil wars should be classified as examples of terrorism?
2. Should the media give the amount of coverage they do to terrorist groups? Or does such coverage encourage groups to commit further acts of terror?



Global Terrorism Today

Economics, religion, and nationalism motivate terrorism today. Here are some examples.

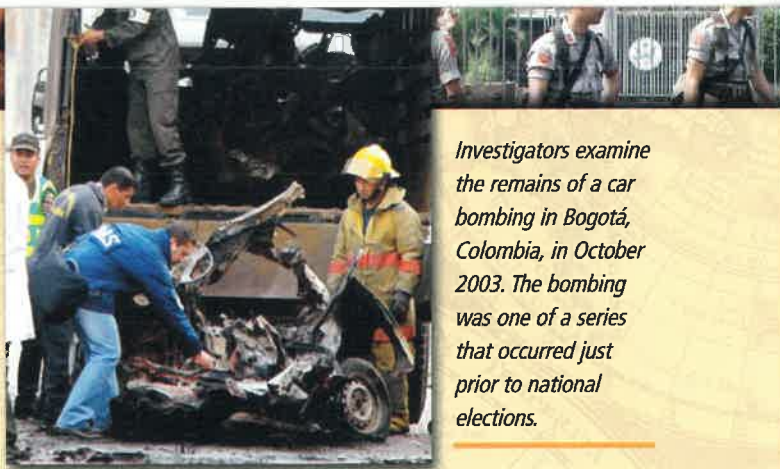
United States Prior to the events of September 11, 2001, Americans were more concerned with domestic terrorism than international terrorism. The most devastating single act of domestic terrorism was the bombing of a federal office building in Oklahoma City in 1995, which resulted in the deaths of 168 people. The key terrorist involved in the bombing, Timothy McVeigh, was apparently motivated by anti-government, anti-gun-control beliefs that he shared with others in militia and white supremacist groups.

Middle and South America Most of the terrorist activity in Latin America has been economically motivated. Terrorists have tried to portray their activity as a

In April 1995, Timothy McVeigh blew up the Alfred P. Murrah Federal Building in Oklahoma City, Oklahoma, killing 168 people. Following the bombing, a police car in Oklahoma reflected the feelings of many Americans.

justified means of fighting against poverty and what they believe has been an unfair distribution of wealth. Another motive for terrorism is the economic and political frustration of South American Indians. Today, they are among the poorest inhabitants of the region and often lack any real political power.

In recent years Colombia has experienced extreme violence, as members of the Revolutionary Armed Forces of Colombia and the National Liberation Army of Colombia have assassinated government and military leaders and destroyed symbols of what they see as their exploitation by the upper class and foreign businesses. The use of drug trafficking to provide funding for their activities has made matters worse. In next-door Peru, the Sendero Luminoso, or Shining Path, has also been waging a long, violent campaign against the government.



Investigators examine the remains of a car bombing in Bogotá, Colombia, in October 2003. The bombing was one of a series that occurred just prior to national elections.

Europe A variety of causes have motivated terrorists in modern-day Europe. Perceived discrimination against ethnic and religious minorities is foremost among them. Such concerns had been cited for decades by the Irish Republican Army (IRA) as justification for their violent fight for Northern Ireland's independence from Britain. Another terrorist group, ETA, has used violent attacks in its campaign to force Spain to allow the Basque region of the country to secede.

Islamists have also carried out terrorist attacks. In Madrid in 2004 they attacked a commuter train, killing 190 people. In London in 2005 suicide bombers struck subway trains and a bus, killing 56.

Russia One of the most unusual terrorist groups is known as the Black Widows. It is made up of female suicide bombers who have lost husbands, brothers, or fathers in the efforts of largely Muslim Chechnya to gain independence from Russia. In October 2002, the



LA GUERRA ES
TERRORISMO ESTADO

Black Widows were among a group of 41 terrorists who took over the Dubrovka Theater in Moscow. All of the terrorists and 129 of their hostages died when Russian troops and police retook the theater.

Then in 2004 Chechen rebels and a few Arab fighters took parents and children hostage at a school in southern Russia. After a long standoff, a bomb exploded and shooting between rebels and Russian troops erupted. Over 350 people died.

Southwest Asia The countries in Southwest Asia are home to more terrorist groups than the countries of any other region. At the heart of terrorist activity in the region is the conflict between the state of Israel and the Palestinians, who feel they have been unfairly expelled from their homeland.

Terrorist groups based in the region include Hamas, Al-Aqsa Martyrs Brigades, the Palestinian Islamic Jihad, and Hezbollah. While these groups fight for

territory and Palestinian statehood, their conflict with Israel is also based on radical religious beliefs and the importance of controlling what they consider Muslim land, including the State of Israel.

South, East, and Southeast Asia Many different terrorist groups operate in these regions. The Liberation Tigers of Tamil Eelam (LTTE) seeks independence from Sri Lanka for the Tamil people. LTTE members have used extensive suicide bombings to further their cause.

The Aum Shinrikyo is a religious cult based in Japan whose goal is to take control of Japan and then the world. Members of the group released deadly sarin gas in the Tokyo subway in 1995, killing 12 and injuring over 5,000.

The largest terrorist group in the Philippines is the Moro Islamic Liberation Front (MILF). It is an Islamic fundamentalist group with reported ties to Osama bin Laden. Its aim is to establish a separate Islamic state in the Philippines.



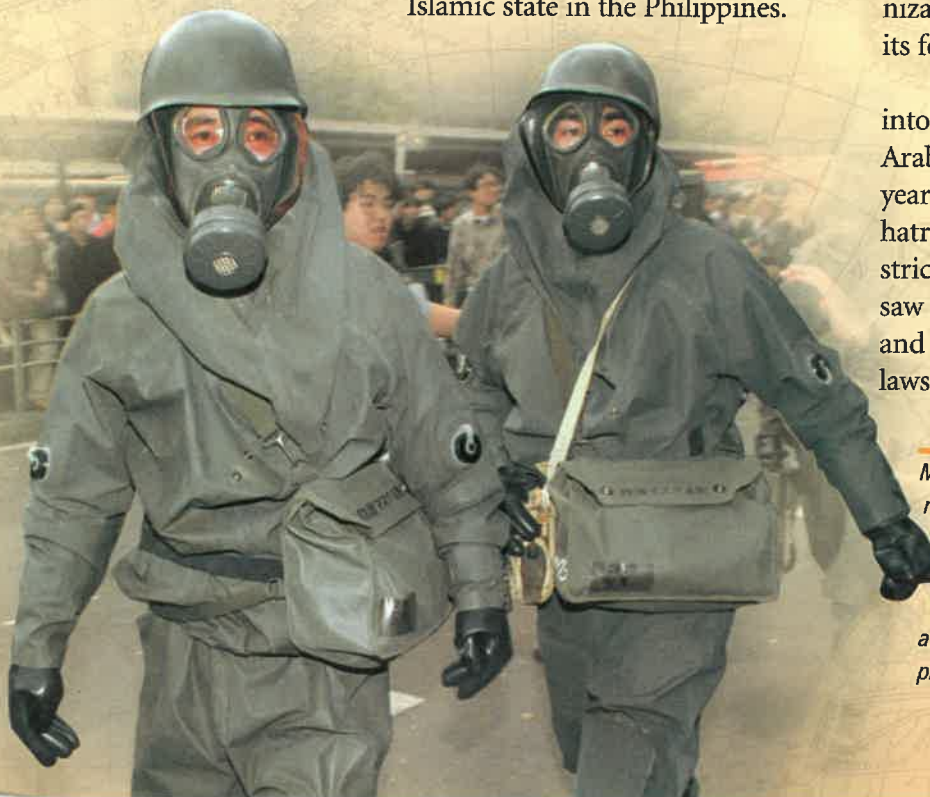
Al Qaeda leader Osama bin Laden

Al Qaeda and the War on Terrorism

The international terrorist organization al Qaeda and its leader, Osama bin Laden, became household words after the attacks of September 11, 2001. No prior terrorist act had ever been as destructive or as widely publicized. How did al Qaeda become in just a few years the most dangerous terrorist group in the world? Many factors contributed to the rise of the organization, but most significant was its founder, Osama bin Laden.

Osama bin Laden was born into a wealthy family in Saudi Arabia around 1957. Over the years he had developed a fanatical hatred of the United States. As a strict Muslim fundamentalist, he saw America as morally corrupt and in violation of many Islamic laws. He was outraged that U.S.

Members of Japan's Self-Defense Forces respond to reports of a suspicious odor at a subway station near Tokyo in April 1995. Security personnel were on high alert following the subway gas attack carried out by Aum Shinrikyo the previous month.





U.S. soldiers escort a terrorist suspect to his prison cell at Guantánamo Bay, Cuba.

The Future of International Terrorism

In the early years of the twenty-first century, terrorism affects the lives of millions of people around the globe. Some are affected much more than others. Citizens in Israel and Colombia, for example, live with the real and constant fear that they, or their loved ones, could be in the wrong place at the wrong time, becoming innocent victims of a suicide bomber or an assassin's stray bullet.

People in other parts of the world are safer, but still experience various degrees of inconvenience, restricted lifestyles, or a loss of certain civil liberties as a result of terrorism. Government buildings are barricaded and closely guarded, limiting access to government resources. Flights are cancelled if government agents obtain evidence of possible attacks. Delays

troops operated military bases in Saudi Arabia, home of the sacred shrine of Mecca. He was also infuriated by American support for Israel. His answer to what he saw as these intolerable U.S. actions was to declare a holy war, or jihad, against the United States and its supporters.

After September 11, 2001, U.S. President George W. Bush declared a war on terrorism. The United

States assembled an international coalition of forces and attacked Afghanistan, the location of bin Laden's terrorist training camps. Many members of al Qaeda were captured and sent to a prison at the American naval base at Guantánamo Bay, Cuba.

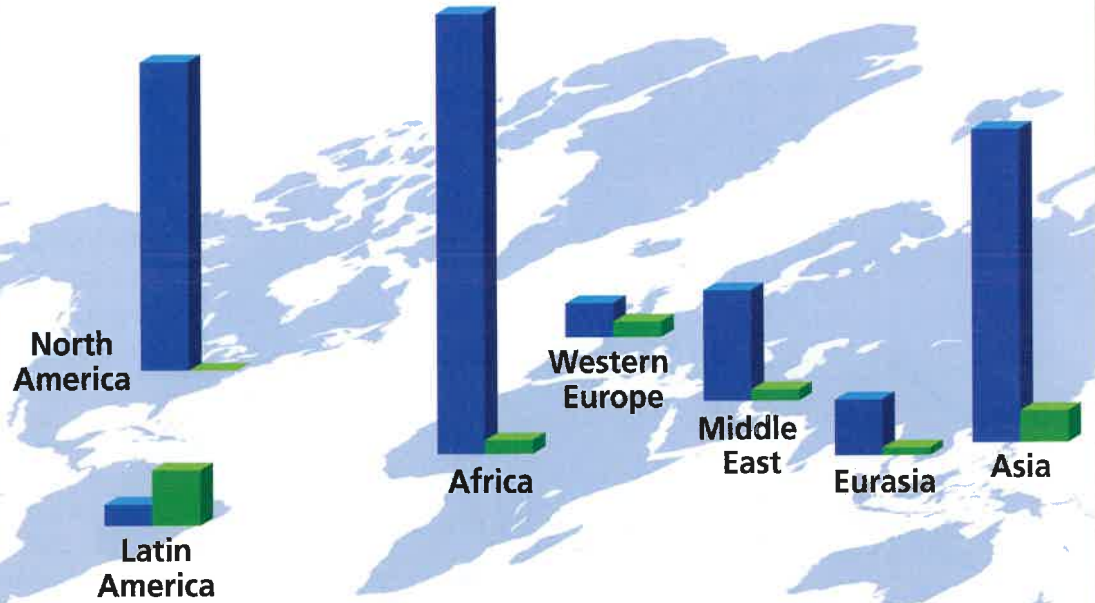
As of mid-2006, however, Osama bin Laden was still directing terrorist actions from a hideout, probably in the mountains of Afghanistan along the border with Pakistan. Al Qaeda remained a potent force with cells in more than 30 countries.

Think About It

If the governments of Middle and South America were able to resolve the economic problems that affect their nations, would the terrorist groups operating in those nations disband? Explain your answer.

International Terrorist Attacks and Casualties, 1998–2002

Attacks	
Africa	167
Asia	387
Eurasia	90
Latin America	676
Middle East	135
North America	6
Western Europe	189
Casualties	
Africa	5,828
Asia	4,161
Eurasia	738
Latin America	283
Middle East	1,462
North America	4,091
Western Europe	451



U.S. Department of State