The Impact of Science and Technology

MAIN IDEA	WHY IT MATTERS NOW	TERMS & NAMES
SCIENCE AND TECHNOLOGY Advances in technology after World War II led to increased global interaction and improved quality of life.	Advances in science and technology affect the lives of people around the world.	• International Space Station • Internet • genetic engineering • cloning • green revolution

SETTING THE STAGE Beginning in the late 1950s, the United States and the Soviet Union competed in the exploration of space. The Soviets launched Earth's first artificial satellite and put the first human in orbit around the planet. By the late 1960s, however, the United States had surpassed the Soviets. U.S. astronauts landed on the moon in 1969. The heavy emphasis on science and technology that the space race required led to the development of products that changed life for people across the globe.

Exploring the Solar System and Beyond

In its early years, competition between the United States and the Soviet Union in the space race was intense. Eventually, however, space exploration became one of the world's first and most successful arenas for cooperation between U.S. and Soviet scientists.

Cooperation in Space In 1972, years before the end of the Cold War, the United States and Soviet space programs began work on a cooperative project—the docking of U.S. and Soviet spacecraft in orbit. This goal was achieved on July 17, 1975, when spacecraft from the two countries docked some 140 miles above Earth. Television viewers across the globe watched as the hatch between the space vehicles opened and crews from Earth's fiercest rival countries greeted each other.

This first cooperative venture in space between the United States and the Soviet Union was an isolated event. People from different countries, however, continued to work together to explore space. The Soviets were the first to send an international crew into space. The crew of *Soyuz 28,* which orbited Earth in 1978, included a Czech cosmonaut. Since the mid-1980s, crews on United States space shuttle flights have included astronauts from Saudi Arabia, France, Germany, Canada, Italy, Japan, Israel, and Mexico. (Space shuttles are larger than other spacecraft and are reusable.) Shuttle missions put crews in orbit around Earth to accomplish a variety of scientific and technological tasks.

The space shuttle is being used in the most ambitious cooperative space venture. The project, sponsored by the United States, Russia, and 14 other nations, involves the building of the **International Space Station** (ISS). Since 1998, U.S. shuttles and Russian spacecraft have transported sections of the ISS to be assembled in space. By the time it is completed, the ISS will cover an area the size

▲ This view of the ISS was taken from the space shuttle *Endeavor.*

of a football field and house a crew of six. Since October 2000, smaller crews have been working aboard the ISS. By early 2003, they had conducted more than 100 experiments. However, the suspension of the shuttle program after the crash of the shuttle *Columbia* in February 2003 put the future of the ISS in question.

Exploring the Universe Unmanned space probes have been used to study the farther reaches of the solar system. The Soviet *Venera* spacecraft in the 1970s and the U.S. probe *Magellan* in 1990 provided in-depth information about Venus. On a 12-year journey that began in 1977, the U.S. *Voyager 2* sent dazzling pictures of Jupiter, Saturn, Uranus, and Neptune back to Earth. Both the United States and the Soviet Union have shown particular interest in the planet Mars. The United States probe *Pathfinder,* which landed on Mars in 1997, provided spectacular results.

In 1990, the U.S. space agency, NASA, and the European space agency, ESA, worked together to develop and launch the Hubble Space Telescope. This orbiting telescope continues to observe and send back images of objects in the most remote regions of the universe. **A**

MAIN IDEA

Hypothesizing
A Why might rival nations cooperate in space activities but not on Earth?

Expanding Global Communications

Since the 1960s, artificial satellites launched into orbit around Earth have aided worldwide communications. With satellite communication, the world has been gradually transformed into a global village. Today, political and cultural events occurring in one part of the world often are witnessed live by people thousands of miles away. This linking of the globe through worldwide communications is made possible by the miniaturization of the computer.

Smaller, More Powerful Computers In the 1940s, when computers first came into use, they took up a huge room. The computer required fans or an elaborate air-conditioning system to cool the vacuum tubes that powered its operations. In the years since then, however, the circuitry that runs the computer has been miniaturized and made more powerful. This change is due, in part, to the space program, for which equipment had to be downsized to fit into tiny space capsules. Silicon chips replaced the bulky vacuum tubes used earlier. Smaller than contact lenses, silicon chips hold millions of microscopic circuits.

Following this development, industries began to use computers and silicon chips to run assembly lines. Today a variety of consumer products such as microwave ovens, telephones, keyboard instruments, and cars use computers and chips. Computers have become essential in most offices, and millions of people around the globe have computers in their homes.

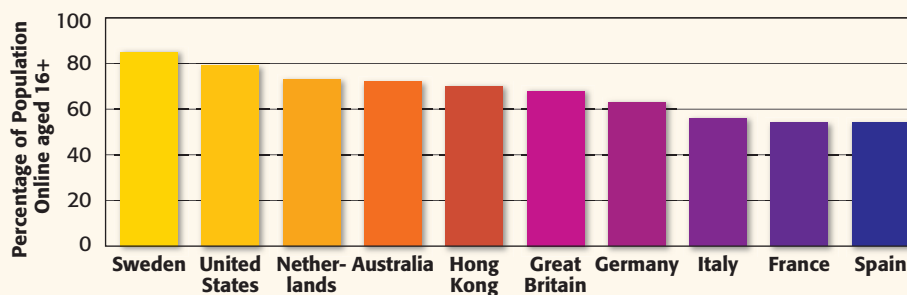▼ Some computers are so small that they can be held in the hand.

Access to the Internet, 2002

Internet Users Worldwide

Africa	6.31 million
Asia and the Pacific	187.24 million
Europe	190.91 million
Middle East	5.12 million
Canada and U.S.	182.67 million
Latin America	33.35 million
Worldwide	**605.60 million**

Source: Nua Internet Surveys

Some Major Internet Nations (By Percentage of Population Online)

Percentage of Population Online aged 16+

Sweden, United States, Netherlands, Australia, Hong Kong, Great Britain, Germany, Italy, France, Spain

Source: Nielsen/NetRatings

SKILLBUILDER: Interpreting Charts and Graphs
1. **Comparing** *In which world region do most Internet users live?*
2. **Drawing Conclusions** *How would you describe most of the nations with large percentages of their populations online?*

Communications Networks Starting in the 1990s, businesses and individuals began using the **Internet**. The Internet is the voluntary linkage of computer networks around the world. It began in the late 1960s as a method of linking scientists so they could exchange information about research. Through telephone-line links, business and personal computers can be hooked up with computer networks. These networks allow users to communicate with people across the nation and around the world. Between 1995 and late 2002, the number of worldwide Internet users soared from 26 million to more than 600 million.

Conducting business on the Internet has become a way of life for many. The Internet, along with fax machines, transmits information electronically to remote locations. Both paved the way for home offices and telecommuting—working at home using a computer connected to a business network. Once again, as it has many times in the past, technology has changed how and where people work. **B**

Transforming Human Life

Advances with computers and communications networks have transformed not only the ways people work but lifestyles as well. Technological progress in the sciences, medicine, and agriculture has improved the quality of the lives of millions of people.

Health and Medicine Before World War II, surgeons seldom performed operations on sensitive areas such as the eye or the brain. However, in the 1960s and 1970s, new technologies, such as more powerful microscopes, the laser, and ultrasound, were developed. Many of these technologies advanced surgical techniques.

Advances in medical imaging also helped to improve health care. Using data provided by CAT scans and MRI techniques, doctors can build three-dimensional images of different organs or regions of the body. Doctors use these images to diagnose injuries, detect tumors, or collect other medical information.

In the 1980s, genetics, the study of heredity through research on genes, became a fast-growing field of science. Found in the cells of all organisms, genes are hereditary units that cause specific traits, such as eye color, in every living organism. Technology allowed scientists to isolate and examine individual genes that are responsible for different traits. Through **genetic engineering**, scientists were able to introduce new genes into an organism to give that organism new traits.

Another aspect of genetic engineering is **cloning**. This is the creation of identical copies of DNA, the chemical chains of genes that determine heredity. Cloning actually allows scientists to reproduce both plants and animals that are identical to

Global Interdependence **1073**

Social History

Molecular Medicine

In 2003, scientists employed on the Human Genome Project completed work on a map of the thousands of genes contained in DNA—human genetic material. The information provided by this map has helped in the development of a new field of medicine. Called "molecular medicine," it focuses on how genetic diseases develop and progress.

Researchers in molecular medicine are working to identify the genes that cause various diseases. This will help in detecting diseases in their early stages of development. Another area of interest to researchers is gene therapy. This involves replacing a patient's diseased genes with normal ones. The ultimate aim of workers in this field is to create "designer drugs" based on a person's genetic makeup.

existing plants and animals. The application of genetics research to everyday life has led to many breakthroughs, especially in agriculture.

The Green Revolution In the 1960s, agricultural scientists around the world started a campaign known as the **green revolution**. It was an attempt to increase food production worldwide. Scientists promoted the use of fertilizers, pesticides, and high-yield, disease-resistant strains of a variety of crops. The green revolution helped avert famine and increase crop yields in many parts of the world.

However, the green revolution had its negative side. Fertilizers and pesticides often contain dangerous chemicals that may cause cancer and pollute the environment. Also, the cost of the chemicals and the equipment to harvest more crops was far too expensive for an average peasant farmer. Consequently, owners of small farms received little benefit from the advances in agriculture. In some cases, farmers were forced off the land by larger agricultural businesses.

Advances in genetics research seem to be helping to fulfill some of the goals of the green revolution. In this new "gene revolution," resistance to pests is bred into plant strains, reducing the need for pesticides. Plants being bred to tolerate poor soil conditions also reduce the need for fertilizers. The gene revolution involves some risks, including the accidental creation of disease-causing organisms. However, the revolution holds great promise for increasing food production in a world with an expanding population. **C**

Science and technology have changed the lives of millions of people. What people produce and even their jobs have changed. These changes have altered the economies of nations. Not only have nations become linked through communications networks but they are also linked in a global economic network, as you will see in Section 2.

MAIN IDEA

Recognizing Effects

C What are some of the positive and negative effects of genetic engineering?

SECTION 1 ASSESSMENT

TERMS & NAMES 1. For each term or name, write a sentence explaining its significance.
• International Space Station   • Internet   • genetic engineering   • cloning   • green revolution

USING YOUR NOTES

2. Which of the three developments do you think has had the greatest global effect? Why?

Developments	Effects
Communications	
Health and Medicine	
Green Revolution	

MAIN IDEAS

3. How does the development of the International Space Station show that space exploration has become a cooperative endeavor?

4. How has the development of the computer and the Internet changed the way people work?

5. What areas of medicine have benefited from scientific and technological developments?

CRITICAL THINKING & WRITING

6. **MAKING INFERENCES** Why do you think that space exploration became an arena for cooperation between the Soviet Union and the United States?

7. **HYPOTHESIZING** How do you think the Internet will affect the world of work in the future?

8. **FORMING AND SUPPORTING OPINIONS** Is there a limit to how far cloning should go? Why or why not?

9. **WRITING ACTIVITY** SCIENCE AND TECHNOLOGY Use encyclopedia yearbooks and science magazines to identify a technological advance made in the last year. Write a brief **report** on the impact this advance has had on daily life.

CONNECT TO TODAY CREATING A GRAPH

Conduct research into how people use the Internet. Use your findings to construct a **graph** showing the most common Internet activities.

2

Global Economic Development

SETTING THE STAGE At the end of World War II, much of Europe and Asia lay in ruins, with many of the major cities leveled by bombing. The devastation of the war was immense. However, with aid from the United States, the economies of Western European nations and Japan began expanding rapidly within a decade. Their growth continued for half a century, long after the United States ceased supplying aid. Advances in science and technology contributed significantly to this ongoing economic growth.
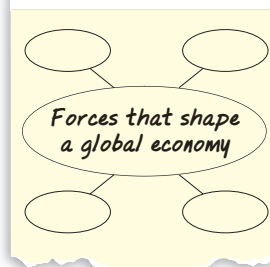
Technology Revolutionizes the World's Economy

In both Asia and the Western world, an explosion in scientific knowledge prompted great progress that quickly led to new industries. A prime example was plastics. In the 1950s, a process to develop plastics from petroleum at low pressures and low temperatures was perfected. Within a few years, industries made a host of products easily and cheaply out of plastics. Other technological advances have also changed industrial processes, lowered costs, and increased the quality or the speed of production. For example, robotic arms on automobile assembly lines made possible the fast and safe manufacture of high-quality cars.

Information Industries Change Economies Technological advances in manufacturing reduced the need for factory workers. But in other areas of the economy, new demands were emerging. Computerization and communications advances changed the processing of information. By the 1980s, people could transmit information quickly and cheaply. Information industries such as financial services, insurance, market research, and communications services boomed. Those industries depended on "knowledge workers," or people whose jobs focus on working with information.

The Effects of New Economies In the postwar era, the expansion of the world's economies led to an increase in the production of goods and services so that many nations benefited. The economic base of some nations shifted. Manufacturing jobs began to move out of **developed nations**, those nations with the industrialization, transportation, and business facilities for advanced production of manufactured goods. The jobs moved to **emerging nations**, those in the process of becoming industrialized. Emerging nations became prime locations for new manufacturing operations. Some economists believe these areas were chosen because

TAKING NOTES

Categorizing Use a web diagram to identify the forces that have shaped the global economy.

Forces that shape a global economy

they had many eager workers whose skills fit manufacturing-type jobs. Also, these workers would work for less money than those in developed nations. On the other hand, information industries that required better-educated workers multiplied in the economies of developed nations. Thus the changes brought by technology then changed the workplace of both developed and emerging nations.
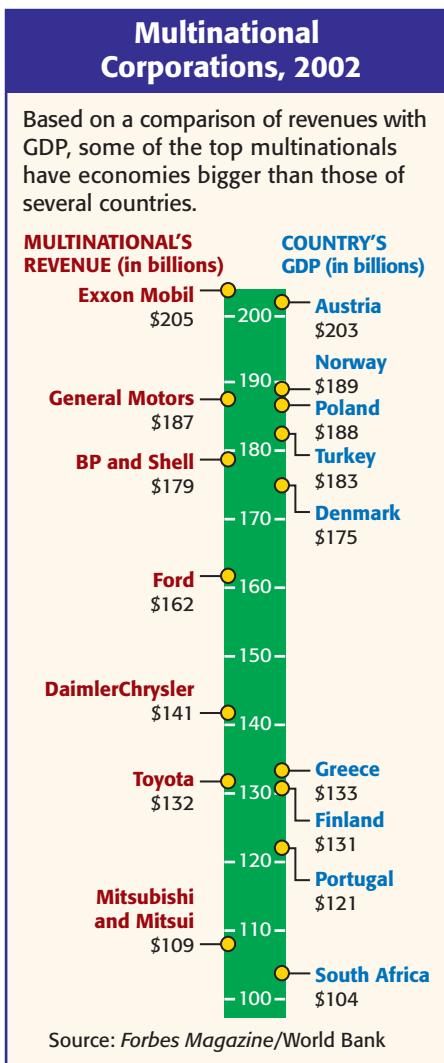
Economic Globalization

Economies in different parts of the world have been linked for centuries through trade and through national policies, such as colonialism. However, a true global economy did not begin to take shape until well into the second half of the 1800s. The **global economy** includes all the financial interactions—among people, businesses, and governments—that cross international borders. In recent decades, several factors hastened the process of globalization. Huge cargo ships could inexpensively carry enormous supplies of fuels and other goods from one part of the world to another. Telephone and computer linkages made global financial transactions quick and easy. In addition, multinational corporations developed around the world. **A**

Multinational Corporations Companies that operate in a number of different countries are called multinational or transnational corporations. U.S. companies such as Exxon Mobil, General Motors, and Ford; European companies such as BP, DaimlerChrysler, and Royal Dutch/Shell; and Japanese companies such as Toyota, Mitsubishi, and Mitsui all became multinational giants.

All of these companies have established manufacturing plants, offices, or stores in many countries. For their manufacturing plants, they select spots where the raw materials or labor are cheapest. This enables them to produce components of their products on different continents. They ship the various components to another location to be assembled. This level of economic integration allows such companies to view the whole world as the market for their goods. Goods or services are distributed throughout the world as if there were no national boundaries.

Expanding Free Trade Opening up the world's markets to trade is a key aspect of globalization. In fact, a major goal of globalization is **free trade**, or the elimination of trade barriers, such as tariffs, among nations. This movement toward free trade is not new. As early as 1947, nations began discussing ways to open trade. The result of these discussions was the General Agreement on Tariffs and Trade (GATT). Over the years, several meetings among the nations that signed the GATT have brought about a general lowering of protective tariffs and considerable expansion of free trade. Since 1995, the World Trade Organization (WTO) has overseen the GATT to ensure that trade among nations flows as smoothly and freely as possible.

Regional Trade Blocs A European organization set up in 1951 promoted tariff-free trade among member countries. This experiment in economic cooperation was so successful that six years later, a new organization, the European Economic Community (EEC), was formed. Over time,

Multinational Corporations, 2002

Based on a comparison of revenues with GDP, some of the top multinationals have economies bigger than those of several countries.

MULTINATIONAL'S REVENUE (in billions)	COUNTRY'S GDP (in billions)
Exxon Mobil $205	—200— Austria $203
	—190— Norway $189 / Poland $188
General Motors $187	
BP and Shell $179	—180— Turkey $183
	—170— Denmark $175
Ford $162	—160—
	—150—
DaimlerChrysler $141	—140—
Toyota $132	—130— Greece $133 / Finland $131
	—120— Portugal $121
Mitsubishi and Mitsui $109	—110—
	—100— South Africa $104

Source: *Forbes Magazine*/World Bank

SKILLBUILDER: Interpreting Graphs
1. **Comparing** Which has the larger economy, Poland or Ford?
2. **Clarifying** Which multinationals have an economy greater than that of South Africa but smaller than that of Portugal?

Map labels (selected): Arctic Circle · CANADA [G8] · 40°N · UNITED STATES [G8] · ATLANTIC OCEAN · Tropic of Cancer · MEXICO · PACIFIC OCEAN · 0° Equator · JAMAICA · HONDURAS · GUATEMALA · EL SALVADOR · NICARAGUA · COSTA RICA · PANAMA · VENEZUELA · GUYANA · SURINAME · COLOMBIA · ECUADOR · PERU · BRAZIL · BOLIVIA · PARAGUAY · CHILE · URUGUAY · ARGENTINA · UNITED KINGDOM · IRELAND [G8] · GERMANY · FRANCE [G8] · SPAIN · ITALY [G8] · UKRAINE · SYRIA · IRAQ · IRAN · KUWAIT · ALGERIA · LIBYA · EGYPT · QATAR · SAUDI ARABIA · UNITED ARAB EMIRATES · YEMEN · MAURITANIA · CHAD · SUDAN · NIGERIA · CAMEROON · GABON · DEM. REP. OF THE CONGO · SOMALIA · TANZANIA · SEYCHELLES · ANGOLA · MALAWI · ZAMBIA · MOZAMBIQUE · MAURITIUS · BOTSWANA · ZIMBABWE · NAMIBIA · SWAZILAND · SOUTH AFRICA · LESOTHO · RUSSIA [G8] · KAZAKHSTAN · MONGOLIA · CHINA · SOUTH KOREA · JAPAN [G8] · INDIA · TAIWAN · THAILAND · VIETNAM · MALAYSIA · PHILIPPINES · BRUNEI · SINGAPORE · INDONESIA · PAPUA NEW GUINEA · AUSTRALIA · NEW ZEALAND · INDIAN OCEAN · PACIFIC OCEAN

Scale: 0 — 3,000 Miles · 0 — 5,000 Kilometers

Legend:
- Andean Community (CAN)
- Asia-Pacific Economic Cooperation (APEC)
- Association of Southeast Asian Nations (ASEAN)
- Central American Common Market (CACM)
- Caribbean Community and Common Market (CARICOM)
- Commonwealth of Independent States (CIS)
- Council of Arab Economic Unity (CAEU)
- European Free Trade Association (EFTA)
- European Union (EU)
- Group of Eight (G8)
- Monetary and Economic Community of Central Africa (CEMAC)
- North American Free Trade Agreement (NAFTA)
- Organization of the Petroleum Exporting Countries (OPEC)
- Southern Common Market (MERCOSUR)
- Southern African Development Community (SADC)

GEOGRAPHY SKILLBUILDER: Interpreting Maps
1. **Location** Which countries in OPEC are located outside of Southwest Asia?
2. **Location** To which world trade organizations does the United States belong?

most of the other Western European countries joined the organization, which has been known as the European Union (EU) since 1992. Several of the former Communist nations of Eastern Europe also have applied to become EU members.

Through this economic unification, Europe began to exert a major force in the world economy. The economic success of the EU inspired countries in other regions to make trade agreements with each other. The North American Free Trade Agreement (NAFTA), put into effect in 1994, called for the gradual elimination of tariffs and trade restrictions among Canada, the United States, and Mexico. Organizations in Asia, Africa, Latin America, and the South Pacific have also created regional trade policies.
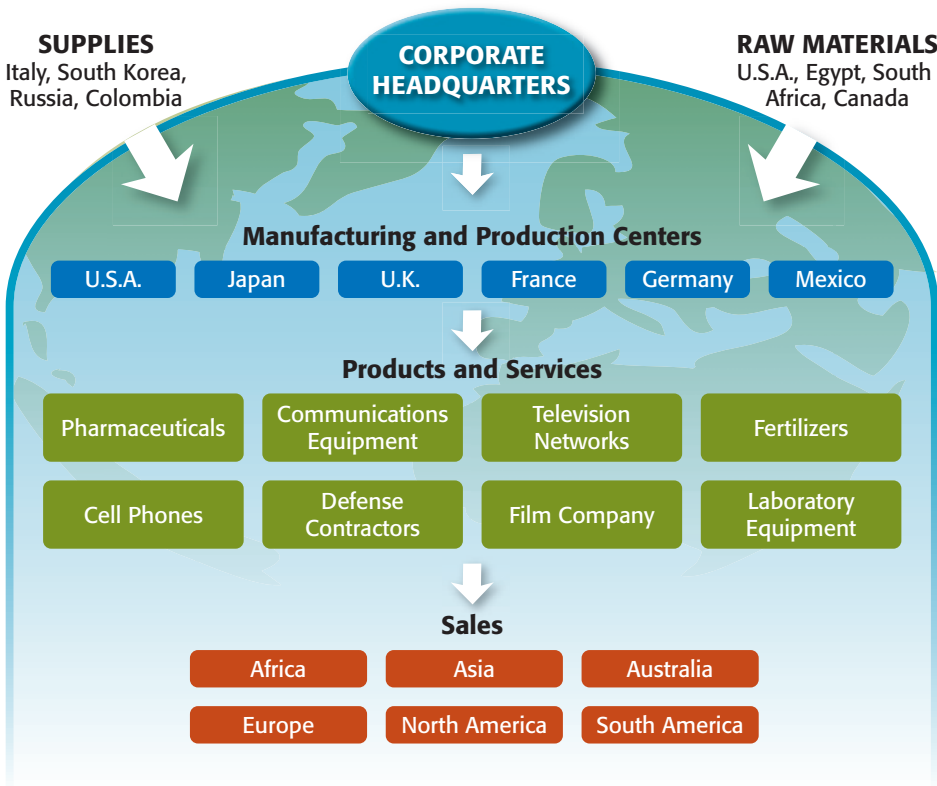
Globalization—For and Against In recent years, there has been considerable debate on the impact of globalization. Supporters suggest that open, competitive markets and the free flow of goods, services, technology, and investments benefit all nations. Globalization, they argue, has resulted in a dramatic increase in the standard of living across the world. Even some opponents agree that practically all nations have seen some benefit from globalization. However, they note that the developed nations have benefited the most. Other opponents charge that globalization has been a disaster for the poorest countries. They suggest that many poor countries are worse off today than they were in the past. They argue that investment practices, trade agreements, and aid packages must be designed to protect the interests of the poorest nations.

Globalization

Globalization can be described in broad terms as a process that makes something worldwide in its reach or operation. Currently, globalization is most often used in reference to the spread and diffusion of economic or cultural influences. The graphics below focus on economic globalization. The first shows a global corporation. The second lists some arguments for and against economic globalization.

Global Corporation

SUPPLIES
Italy, South Korea, Russia, Colombia

CORPORATE HEADQUARTERS

RAW MATERIALS
U.S.A., Egypt, South Africa, Canada

Manufacturing and Production Centers

| U.S.A. | Japan | U.K. | France | Germany | Mexico |

Products and Services

| Pharmaceuticals | Communications Equipment | Television Networks | Fertilizers |
| Cell Phones | Defense Contractors | Film Company | Laboratory Equipment |

Sales

| Africa | Asia | Australia |
| Europe | North America | South America |

Arguments for and Against Economic Globalization

For	Against
• promotes peace through trade	• creates conflict because of an inherently unfair system
• raises the standard of living around the world	• benefits developed nations disproportionately
• creates jobs in emerging countries	• takes jobs from high-paid laborers in developed countries
• promotes investment in less developed countries	• benefits those who already have money
• creates a sense of world community	• erodes local cultures

INTEGRATED TECHNOLOGY

RESEARCH LINKS For more on globalization, go to **classzone.com**

> **DATA FILE**

INTERNATIONAL REGULATION
Many countries have joined international organizations to help regulate and stimulate the global economy. Such groups face the same criticisms against globalization in general.

World Trade Organization (WTO)
- Stated goal: "Help trade flow smoothly, freely, fairly, and predictably"
- 146 member nations; around 30 nations negotiating for admission (193 countries in the world)
- WTO members account for over 97 percent of world trade.

International Monetary Fund (IMF)
- Stated goal: "Promote international monetary cooperation; to foster economic growth and high levels of employment; and to provide temporary financial assistance to countries"
- 184 member countries
- In March 2003, IMF total resources were around $300 billion.

The World Bank Group
- Stated goal: "A world free of poverty"
- 184 member countries
- In 2002, this group provided $19.5 billion to emerging countries

Connect to Today

1. **Making Inferences** How are money and culture related to each other when discussing globalization?
   See Skillbuilder Handbook, page R11.

2. **Making Predictions** Will globalization continue or will another process replace it? Why or why not?

Impact of Global Development

The development of the global economy has had a notable impact on the use of energy and other resources. Worldwide demand for these resources has led to both political and environmental problems.

Political Impacts Manufacturing requires the processing of raw materials. Trade requires the transport of finished goods. These activities, essential for development, require the use of much energy. For the past 50 years, one of the main sources of energy used by developed and emerging nations has been oil. For nations with little of this resource available in their own land, disruption of the distribution of oil causes economic and political problems.

On the other hand, nations possessing oil reserves have the power to affect economic and political situations in countries all over the world. For example, in the 1970s the Organization of Petroleum Exporting Countries (OPEC) declared an oil embargo—a restriction of trade. This contributed to a significant economic decline in many developed nations during that decade.

In 1990, Iraq invaded Kuwait and seized the Kuwaiti oil fields. Fears began to mount that Iraq would also invade Saudi Arabia, another major source of oil. This would have put most of the world's petroleum supplies under Iraqi control. Economic sanctions imposed by the UN failed to persuade Iraq to withdraw from Kuwait. Then, in early 1991, a coalition of some 39 nations declared war on Iraq. After several weeks of fighting, the Iraqis left Kuwait and accepted a cease-fire. This Persian Gulf War showed the extent to which the economies of nations are globally linked.

Environmental Impacts Economic development has had a major impact on the environment. The burning of coal and oil as an energy source releases carbon dioxide into the atmosphere, causing health-damaging air pollution and acid rain. Some scientists believe that the buildup of carbon dioxide in the atmosphere also has contributed to global warming.
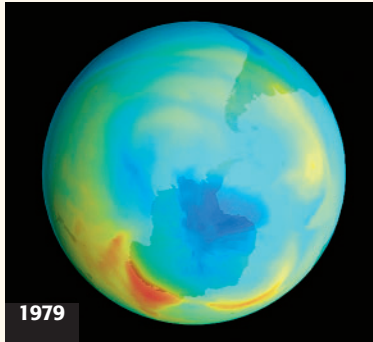
The release of chemicals called chlorofluorocarbons (CFCs), used in refrigerators, air conditioners, and manufacturing processes, has destroyed ozone in Earth's upper atmosphere. The **ozone layer** is our main protection against the Sun's damaging ultraviolet rays. With the increase in ultraviolet radiation reaching Earth's surface, the incidence of skin cancer continues to rise in many parts of the world. Increased ultraviolet radiation also may result in damage to populations of plants and plankton at the bases of the food chains, which sustain all life on Earth.

▼ During the 1991 Persian Gulf War, the Iraqis set hundreds of Kuwaiti oil wells ablaze. Smoke from these fires clouded the skies more than 250 miles away.
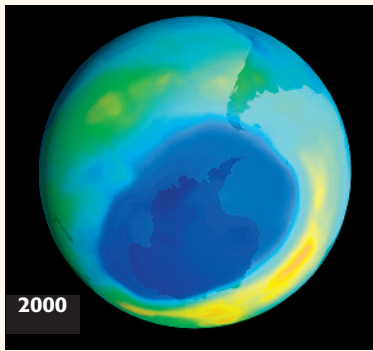
Ozone Levels

A large area of the ozone layer has become much thinner in recent years.

1979

2000

less ozone   more ozone

Economic development has also led to problems with the land. Large-scale soil erosion is a worldwide problem due to damaging farming techniques. The habitat destruction that comes from land development has also led to shrinking numbers of wildlife around the world. At present, the extinction rate of plants and animals is about a thousand times greater than it would naturally be, and appears to be increasing. This high extinction rate means that certain species can no longer serve as an economic resource. The resulting loss of wildlife could endanger complex and life-sustaining processes that keep Earth in balance.

"Sustainable Growth" Working together, economists and scientists are looking for ways to reduce the negative effect that development has on the environment. Their goal is to manage development so that growth can occur, but without destroying air, water, and land resources. The concept is sometimes called "green growth." Many people feel that the negative impact of economic growth on the environment will not be completely removed.

But "greener growth," also known as **sustainable growth**, is possible. This involves two goals: meeting current economic needs, while ensuring the preservation of the environment and the conservation of resources for future generations. Making such plans and putting them into practice have proved to be difficult. But many scientists believe that meeting both goals is essential for the health of the planet in the future. Because the economies of nations are tied to their political climates, such development plans will depend on the efforts of nations in both economic and political areas. **B**

MAIN IDEA

Clarifying
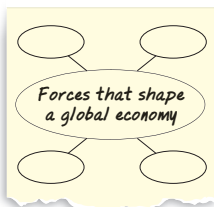**B** What is meant by the term *sustainable growth*?

SECTION (2) ASSESSMENT

TERMS & NAMES **1.** For each term or name, write a sentence explaining its significance.

• developed nation   • emerging nation   • global economy   • free trade   • ozone layer   • sustainable growth

USING YOUR NOTES

2. Which of these forces do you think has had the greatest impact on the development of a global economy?

Forces that shape a global economy

MAIN IDEAS

3. Why are "knowledge workers" becoming more important in the developed nations?

4. What impact did the economic success of the EU have on other regions of the world?

5. How has global economic development affected the environment?

CRITICAL THINKING & WRITING

6. RECOGNIZING EFFECTS In what ways has technology changed the workplace of people across the world?

7. ANALYZING MOTIVES Why might some nations favor imposing tariffs on the imports of certain products?

8. SUPPORTING OPINIONS Do you think that sustainable growth is possible? Why or why not?

9. WRITING ACTIVITY ECONOMICS Make a survey of the labels on class members' clothing and shoes. List the countries in which these items were produced. Write a short **explanation** of how the list illustrates the global economy.

CONNECT TO TODAY **CREATING A POSTER**

Recycling is an important aspect of sustainable growth. Create a **poster** encouraging local businesses to recycle cans, paper products, and plastics.

Global Security Issues

MAIN IDEA	**WHY IT MATTERS NOW**	**TERMS & NAMES**
POWER AND AUTHORITY Since 1945, nations have used collective security efforts to solve problems.	Personal security of the people of the world is tied to security within and between nations.	• proliferation • Universal Declaration of Human Rights • political dissent	• gender inequality • AIDS • refugee

SETTING THE STAGE World War II was one of history's most devastating conflicts. More than 55 million people died as a result of bombings, the Holocaust, combat, starvation, and disease. Near the end of the war, one of humankind's most destructive weapons, the atomic bomb, killed more than 100,000 people in Hiroshima and Nagasaki in a matter of minutes. Perhaps because of these horrors, world leaders look for ways to make the earth a safer, more secure place to live.

Issues of War and Peace

TAKING NOTES

Categorizing Use a chart to list collective methods employed by the world's nations to increase global security.

Method	Examples
Form military alliances	NATO, SEATO, Warsaw Pact

In the years after the end of World War II, the Cold War created new divisions and tensions among the world's nations. This uneasy situation potentially threatened the economic, environmental, and personal security of people across the world. So, nations began to work together to pursue collective security.

Nations Unite and Take Action Many nations consider that having a strong military is important to their security. After World War II, nations banded together to create military alliances. They formed the North Atlantic Treaty Organization (NATO), the Southeast Asian Treaty Organization (SEATO), the Warsaw Pact, and others. The member nations of each of these alliances generally pledged military aid for their common defense.

In addition to military alliances to increase their security, world leaders also took steps to reduce the threat of war. The United Nations (UN) works in a variety of ways toward increasing collective global security.

Peacekeeping Activities One of the major aims of the UN is to promote world peace. The UN provides a public forum, private meeting places, and skilled mediators to help nations try to resolve conflicts at any stage of their development. At the invitation of the warring parties, the UN also provides peacekeeping forces. These forces are made up of soldiers from different nations. They work to carry out peace agreements, monitor cease-fires, or put an end to fighting to allow peace negotiations to go forward.

As of the end of 2002, the UN had close to 40,000 soldiers and police in 13 peacekeeping forces around the world. Some forces, such as those in India and Pakistan, have been in place for decades. Others, such as those in East Timor, achieved their goals in only a few months.

Weapons of Mass Destruction Nations have not only worked to prevent and contain conflicts, they also have forged treaties to limit the manufacturing, testing, and trade of weapons. The weapons of most concern are those that cause mass destruction. These include nuclear, chemical, and biological weapons that can kill thousands, even millions of people.

In 1968, many nations signed a Nuclear Non-Proliferation Treaty to help prevent the **proliferation**, or spread, of nuclear weapons to other nations. In the 1970s, the United States and the Soviet Union signed the Strategic Arms Limitation Treaties. In the 1980s, both countries talked about deactivating some of their nuclear weapons. Many nations also signed treaties promising not to produce biological or chemical weapons.

▲ In central Baghdad, a U.S. Marine watches as a statue of Saddam Hussein is pulled down.

Disarming Iraq Other nations, however, have tried to develop weapons of mass destruction. Iraq, for example, used chemical weapons in conflicts during the 1980s. Many people suspected that the Iraqi leader, Saddam Hussein, had plans to develop biological and nuclear weapons too. As part of the cease-fire arrangements in the Persian Gulf War, Iraq agreed to destroy its weapons of mass destruction. UN inspectors were sent to monitor this disarmament process. However, in 1998, the Iraqis ordered the inspectors to leave.

In 2002, Saddam Hussein once again came under suspicion of developing weapons of mass destruction. The UN Security Council issued a resolution threatening Iraq with "severe consequences" unless the weapons inspectors were allowed to return. Iraq complied, but some UN members suspected that the Iraqis were not fully cooperating with the inspectors. So, in March 2003, a coalition led by the United States and Great Britain sent troops to disarm Iraq by force. After four weeks of fighting, Saddam Hussein's government fell.

Ethnic and Religious Conflicts Conflicts among people of different racial, national, religious, linguistic, or cultural groups are not new. Some struggles have roots that reach back for decades and, in some cases, for centuries. Such conflicts include those between Protestants and Catholics in Ireland, between Palestinians and Israelis in the Middle East, and among Serbs, Bosnians, and Croats in the former Yugoslavia.

Ethnic and religious conflicts have often led to terrible violence. People caught in these conflicts sometimes suffered torture, or massacres of their whole towns or villages. The Kurds of southwest Asia have been the victims of such violence. For decades, Kurds have wanted their own separate country. But their traditional lands cross the borders of three nations—Turkey, Iran, and Iraq. In the past, the Turks responded to Kurdish nationalism by forbidding Kurds to speak their native language. The Iranians also persecuted the Kurds, attacking them over religious issues. In the late 1980s, the Iraqis dropped poison gas on the Kurds, killing 5,000. Several international organizations, including the UN, are working to end the human rights abuses inflicted upon the Kurds.

Human Rights Issues

In 1948, the UN issued the **Universal Declaration of Human Rights**, which set human rights standards for all nations. It stated that "All human beings are born free and equal in dignity and rights. . . . Everyone has the right to life, liberty, and security of person." The declaration further listed specific rights that all human beings should have. Later, in the Helsinki Accords of 1975, the UN addressed the issues of freedom of movement and freedom to publish and exchange information.

Both the declaration and the accords are nonbinding. However, the sentiments in these documents inspired many people around the world. They made a commitment to ensuring that basic human rights are respected. The UN and other international agencies, such as Amnesty International, identify and publicize human rights violations. They also encourage people to work toward a world in which liberty and justice are guaranteed for all.

Continuing Rights Violations Despite the best efforts of various human rights organizations, protecting human rights remains an uphill battle. Serious violations of fundamental rights continue to occur around the world.

One type of violation occurs when governments try to stamp out **political dissent**, or the difference of opinion over political issues. In many countries around the world, from Cuba to Iran to Myanmar, individuals and groups have been persecuted for holding political views that differ from those of the people in power. In some countries, ethnic or racial hatreds lead to human rights abuses. In Rwanda, for example, fighting between Hutus and Tutsis—the two main ethnic groups—led to horrendous rights violations. In 1994, Hutus massacred about 500,000 Tutsis in one of the worst cases of genocide. **Ⓐ**

Women's Status Improves In the past, when women in Western nations entered the work force, they often faced discrimination in employment and salary. In non-Western countries, many women not only faced discrimination in jobs, they were denied access to education. In regions torn by war or ethnic conflict, they were often victims of violence and abuse. As women suffered, so too did their family members, especially children.

However, in the 1970s, a heightened awareness of human rights encouraged women in many countries to work to improve their lives. They pushed for new laws and government policies that gave them greater equality. In 1975, the UN held the first of several international conferences on women's status in the world. The fourth conference was held in Beijing, China, in 1995. It addressed such issues as preventing violence against women and empowering women to take leadership roles in politics and in business.

In 2000, the UN reviewed the status of women. Its report, titled *Progress of the World's Women 2000,* found that women had made notable gains during the 1990s, especially in the areas of education and work. Even so, the report concluded that **gender inequality**—the difference between men and women in terms of wealth and status—still very much existed.

MAIN IDEA

Analyzing Issues
Ⓐ What responsibilities do nations have for protecting human rights in other countries?
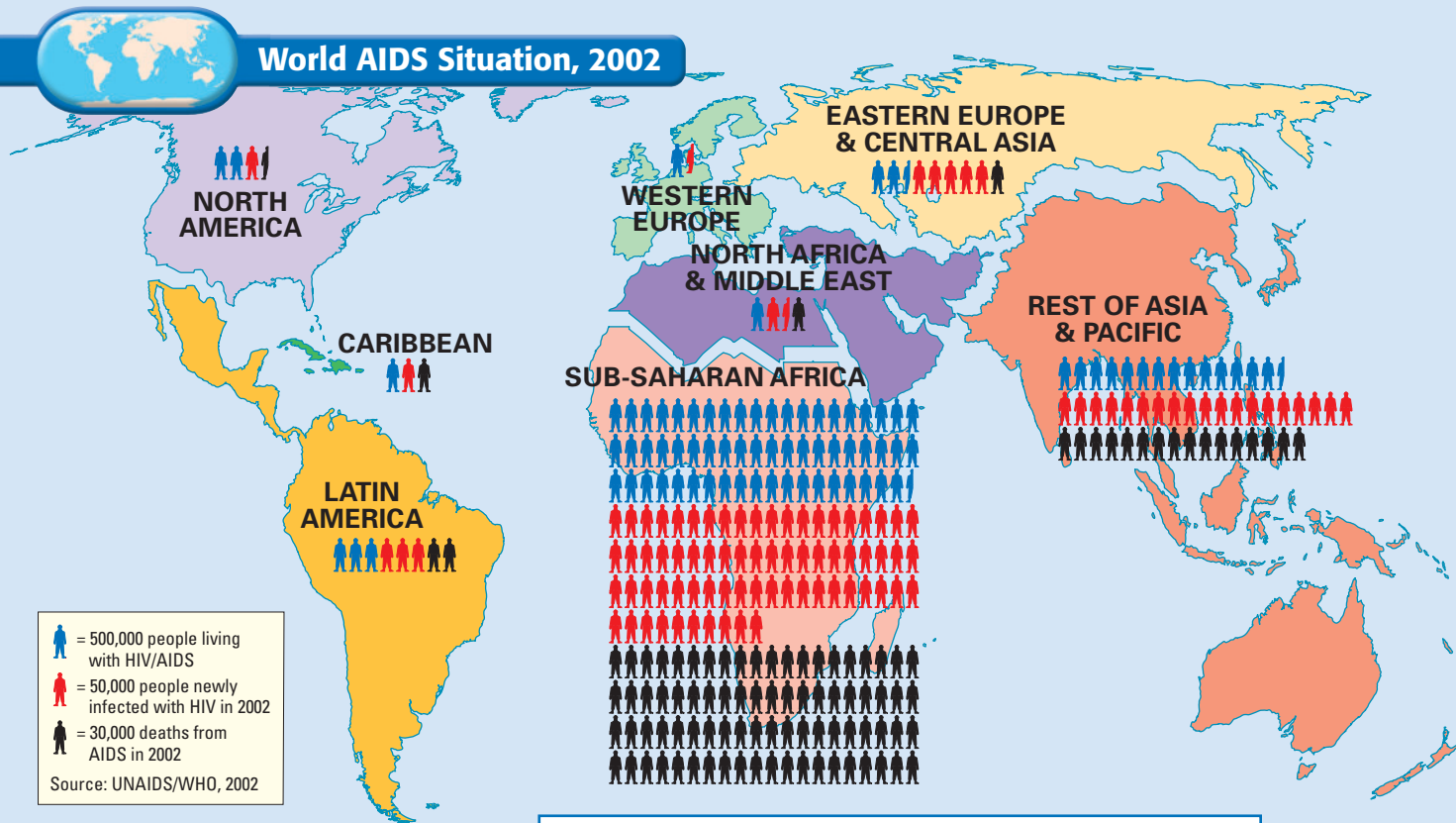
History Makers

Mother Teresa 1910–1997

Mother Teresa was one of the great champions of human rights for all people. Born Agnes Gonxha Bojaxhiu in what today is Macedonia, Mother Teresa joined a convent in Ireland at the age of 18. A short time later, she headed to India to teach at a girls' school. Over time, she noticed many sick and homeless people in the streets. She soon vowed to devote her life to helping India's poor.

In 1948, she established the Order of the Missionaries of Charity in Calcutta, which committed itself to serving the sick, needy, and unfortunate. In recognition of her commitment to the downtrodden, Mother Teresa received the Nobel Peace Prize in 1979.

INTEGRATED TECHNOLOGY

RESEARCH LINKS For more on Mother Teresa, go to **classzone.com**

World AIDS Situation, 2002

EASTERN EUROPE & CENTRAL ASIA

NORTH AMERICA

WESTERN EUROPE

NORTH AFRICA & MIDDLE EAST

REST OF ASIA & PACIFIC

CARIBBEAN

SUB-SAHARAN AFRICA

LATIN AMERICA

= 500,000 people living with HIV/AIDS
= 50,000 people newly infected with HIV in 2002
= 30,000 deaths from AIDS in 2002
Source: UNAIDS/WHO, 2002

GEOGRAPHY SKILLBUILDER: Interpreting Maps
1. **Region** Which region is confronted by the greatest challenge from the AIDS epidemic?
2. **Region** Which region had the greatest number of new HIV infections in 2002, Latin America or Eastern Europe and Central Asia?

Health Issues

In recent decades, the enjoyment of a decent standard of health has become recognized as a basic human right. However, for many people across the world, poor health is still the norm. World health faced a major threat in 2003, with the outbreak of severe acute respiratory syndrome (SARS). This pneumonia-like disease emerged in China and rapidly spread to other Asian countries, Europe, and North America. Afraid of infection, many people canceled travel to Asia. The resulting loss of business hurt the economies of several Asian countries.

The AIDS Epidemic Perhaps the greatest global health issue is a disease known as **AIDS**, or acquired immune deficiency syndrome. It attacks the immune system, leaving sufferers open to deadly infections. The disease was first detected in the early 1980s. Since that time, AIDS has claimed the lives of nearly 25 million people worldwide. By the end of 2002, there were 42 million people across the world living with HIV (the virus that causes AIDS) or AIDS. And in 2002, 5 million people were newly infected with HIV.

While AIDS is a worldwide problem, Sub-Saharan Africa has suffered most from the epidemic. About 70 percent of the world's HIV and AIDS sufferers live in this region. And in 2002, on average more than 6,500 people died of AIDS each day. Most of the people dying are between the ages of 15 and 49—the years when people are at their most productive economically. AIDS, therefore, is reducing the number of people available as workers, managers, and entrepreneurs. As a result, economic growth is slowing in many countries in the region.

In response to the devastating impact of the disease, the UN issued the Declaration of Commitment on HIV/AIDS in 2001. This document set targets for halting the spread of AIDS and provided guidelines on how countries could pool their efforts.

▲ Two Afghan girls quietly wait for food at a refugee camp on the Afghanistan-Iran border.

Population Movement

The global movement of people has increased dramatically in recent years. This migration has taken place for both negative and positive reasons.

Push-Pull Factors People often move because they feel pushed out of their homelands. Lack of food due to drought, natural disasters, and political oppression are examples of push factors of migration. In 2001 alone, the number of **refugees**—people who leave their country to move to another to find safety—stood at 12 million.

Not only negative events push people to migrate. Most people have strong connections to their home countries and do not leave unless strong positive attractions pull them away. They hope for a better life for themselves and for their children, and thus migrate to developed nations. For example, hundreds of thousands of people migrate from Africa to Europe and from Latin America to the United States every year. **B**

Effects of Migration Everyone has the right to leave his or her country. However, the country to which a migrant wants to move may not accept that person. The receiving country might have one policy about accepting refugees from political situations, and another about migrants coming for economic reasons. Because of the huge volume of people migrating from war-torn, famine-stricken, and politically unstable regions, millions of immigrants have no place to go. Crowded into refugee camps, often under squalid conditions, these migrants face a very uncertain future.

On the positive side, immigrants often are a valuable addition to their new country. They help offset labor shortages in a variety of industries. They bring experiences and knowledge that can spur the economy. In addition, they contribute to the sharing, shaping, and blending of a newly enriched culture.

MAIN IDEA

Analyzing Causes
B What push and pull factors cause people to migrate?

SECTION 3 ASSESSMENT

TERMS & NAMES **1.** For each term or name, write a sentence explaining its significance.
• proliferation   • Universal Declaration of Human Rights   • political dissent   • gender inequality   • AIDS   • refugee

USING YOUR NOTES
2. What methods have resulted in the greatest contribution to global security? Why?

Method	Examples
Form military alliances	NATO, SEATO, Warsaw Pact

MAIN IDEAS
3. What steps have nations taken to control the proliferation of weapons of mass destruction?

4. How has AIDS affected the economy of Sub-Saharan Africa?

5. What positive effects does immigration have?

CRITICAL THINKING & WRITING
6. MAKING INFERENCES Why might nations want to retain or develop an arsenal of nuclear, biological, and chemical weapons?

7. IDENTIFYING PROBLEMS How are ethnic and religious conflicts related to problems of global security?

8. RECOGNIZING EFFECTS How can individuals affect social conditions around the world? Consider the example of Mother Teresa when writing your answer.

9. WRITING ACTIVITY SCIENCE AND TECHNOLOGY Write a **paragraph** explaining how advances in science and technology have increased threats to global security.

CONNECT TO TODAY CREATING A DATABASE

Locate recent information on refugees around the world. Use your findings to create a **database** of charts and graphs titled "The Global Refugee Situation."

4

Terrorism

CASE STUDY: September 11, 2001

SETTING THE STAGE Wars are not the only threat to international peace and security. **Terrorism**, the use of violence against people or property to force changes in societies or governments, strikes fear in the hearts of people everywhere. Recently, terrorist incidents have increased dramatically around the world. Because terrorists often cross national borders to commit their acts or to escape to countries friendly to their cause, most people consider terrorism an international problem.

What Is Terrorism?

Terrorism is not new. Throughout history, individuals, small groups, and governments have used terror tactics to try to achieve political or social goals, whether to bring down a government, eliminate opponents, or promote a cause. In recent times, however, terrorism has changed.

Modern Terrorism Since the late 1960s, more than 14,000 terrorist attacks have occurred worldwide. International terrorist groups have carried out increasingly destructive, high-profile attacks to call attention to their goals and to gain major media coverage. Many countries also face domestic terrorists who oppose their governments' policies or have special interests to promote.

The reasons for modern terrorism are many. The traditional motives, such as gaining independence, expelling foreigners, or changing society, still drive various terrorist groups. These groups use violence to force concessions from their enemies, usually the governments in power. But other kinds of terrorists, driven by radical religious and cultural motives, began to emerge in the late 20th century.

The goal of these terrorists is the destruction of what they consider the forces of evil. This evil might be located in their own countries or in other parts of the world. These terrorists are ready to use any kind of weapon to kill their enemies. They are even willing to die to ensure the success of their attacks.

Terrorist Methods Terrorist acts involve violence. The weapons most frequently used by terrorists are the bomb and the bullet. The targets of terrorist attacks often are crowded places where people normally feel safe—subway stations, bus stops, restaurants, or shopping malls, for example. Or terrorists might target something that symbolizes what they are against, such as a government building

▲ The sarin gas attack in the Tokyo subway in 1995 is the most notorious act of biochemical terrorism.

or a religious site. Such targets are carefully chosen in order to gain the most attention and to achieve the highest level of intimidation. **A**

Recently, some terrorist groups have used biological and chemical agents in their attacks. These actions involved the release of bacteria or poisonous gases into the atmosphere. While both biological and chemical attacks can inflict terrible casualties, they are equally powerful in generating great fear among the public. This development in terrorism is particularly worrisome, because biochemical agents are relatively easy to acquire. Laboratories all over the world use bacteria and viruses in the development of new drugs. And the raw materials needed to make some deadly chemical agents can be purchased in many stores.

Cyberterrorism is another recent development. This involves politically motivated attacks on information systems, such as hacking into computer networks or spreading computer viruses. Experts suggest that as more governments and businesses switch to computers to store data and run operations, the threat of cyberterrorism will increase.

Responding to Terrorism Governments take various steps to stamp out terrorism. Most adopt a very aggressive approach in tracking down and punishing terrorist groups. This approach includes infiltrating the groups to gather information on membership and future plans. It also includes striking back harshly after a terrorist attack, even to the point of assassinating known terrorist leaders.

Another approach governments use is to make it more difficult for terrorists to act. This involves eliminating extremists' sources of funds and persuading governments not to protect or support terrorist groups. It also involves tightening security measures so as to reduce the targets vulnerable to attack.

Terrorism Around the World

The problem of modern international terrorism first came to world attention in a shocking way during the 1972 Summer Olympic Games in Munich, Germany (then West Germany). Members of a Palestinian terrorist group killed two Israeli athletes and took nine others hostage. Five of the terrorists, all the hostages, and a police officer were later killed in a bloody gun battle. Since then, few regions of the world have been spared from terrorist attacks.

The Middle East Many terrorist organizations have roots in the Israeli-Palestinian conflict over land in the Middle East. Groups such as the Palestine Islamic Jihad, Hamas, and Hizballah have sought to prevent a peace settlement between Israel and the Palestinians. They want a homeland for the Palestinians on their own terms, with the most extreme among them denying Israel's right to exist. In a continual cycle of violence, the Israelis retaliate after most terrorist attacks, and the terrorists strike again. Moderates in the region believe that the only long-term solution is a compromise between Israel and the Palestinians over the issue of land. However, the violence has continued with only an occasional break.

Europe Many countries in Europe have been targets of domestic terrorists who oppose government policies. For example, for decades the mostly Catholic Irish Republican Army (IRA) engaged in terrorist attacks against Britain because it opposed British control of Northern Ireland. Since 1998, however, the British, the IRA, and representatives of Northern Ireland's Protestants have been negotiating a peaceful solution to the situation.

Asia Afghanistan, in Southwest Asia, became a haven for international terrorists after the Taliban came to power in 1996. (See Chapter 34.) In that year, Osama bin Laden, a Saudi Arabian millionaire involved in terrorist activities, moved to Afghanistan. There he began using mountain hideouts as a base of operations for his global network of Muslim terrorists known as al-Qaeda.

Terrorist groups have arisen in East Asia, as well. One, known as Aum Shinrikyo ("Supreme Truth"), is a religious cult that wants to control Japan. In 1995, cult members released sarin, a deadly nerve gas, in subway stations in Tokyo. Twelve people were killed and more than 5,700 injured. This attack brought global attention to the threat of biological and chemical agents as terrorist weapons.

Africa Civil unrest and regional wars were the root causes of most terrorist activity in Africa at the end of the 20th century. But al-Qaeda cells operated in many African countries, and several major attacks against U.S. personnel and facilities in Africa were linked to al-Qaeda. In 1998, for example, bombings at the U.S. embassies in Kenya and Tanzania left over 200 dead and more than 5,000 people injured. The United States responded to these attacks with missile strikes on suspected terrorist facilities in Afghanistan and in Sudan, where bin Laden was based from 1991 to 1996.

Latin America Narcoterrorism, or terrorism linked to drug trafficking, is a major problem in Latin America, particularly in Colombia. The powerful groups that control that country's narcotics trade have frequently turned to violence. The Revolutionary Armed Forces of Colombia (FARC) is a left-wing guerrilla group that has links with these drug traffickers. The FARC has attacked Colombian political, military, and economic targets, as well as those with American ties. **B**
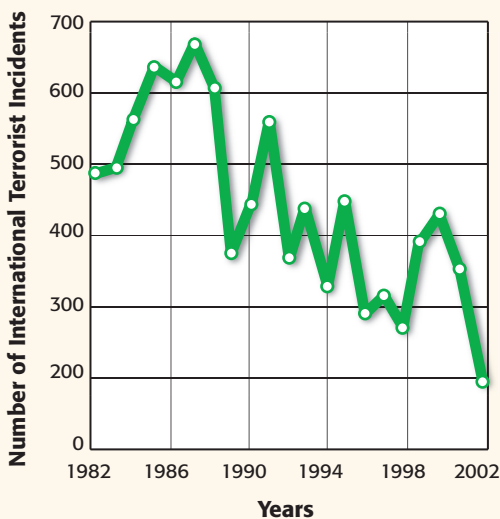
MAIN IDEA

Analyzing Causes
B What are some reasons for terrorism in various regions of the world?

International Terrorist Attacks

Total Attacks, 1982–2002

International Casualties of Terrorism, 1997–2002

	Africa	Asia	Eurasia	Latin America	Middle East	North America	Western Europe
1997	28	344	27	11	480	7	17
1998	5,379	635	12	195	68	0	405
1999	185	690	8	10	31	0	16
2000	102	904	103	20	78	0	4
2001	150	651	0	6	513	4,091	20
2002	12	1281	615	52	772	0	6
Total	5,856	4,505	765	294	1,942	4,098	468

Source: U.S. Department of State

SKILLBUILDER: Interpreting Charts and Graphs
1. **Comparing** *Which three areas suffered the greatest numbers of casualties of terrorism?*
2. **Drawing Conclusions** *How would you describe the overall trend in worldwide terrorist attacks since the mid-1980s?*

Attack on the United States

On the morning of September 11, 2001, 19 Arab terrorists hijacked four airliners heading from East Coast airports to California. In a series of coordinated strikes, the hijackers crashed two of the jets into the twin towers of the World Trade Center in New York City and a third into the Pentagon outside Washington, D.C. The fourth plane crashed in an empty field in Pennsylvania. **C**

The Destruction The planes, loaded with fuel, became destructive missiles when they crashed into the World Trade Center and the Pentagon. The explosions and fires so weakened the damaged skyscrapers that they crumbled to the ground less than two hours after impact. The fire and raining debris caused nearby buildings to collapse as well. The damage at the Pentagon, though extensive, was confined to one section of the building.

The toll in human lives was great. About 3,000 people died in the attacks. All passengers on the four planes were killed, as well as workers and visitors in the World Trade Center and the Pentagon. The dead included more than 340 New York City firefighters and 60 police officers who rushed to the scene to help and were buried in the rubble when the skyscrapers collapsed.

The Impact of the Attack September 11 had a devastating impact on the way Americans looked at life. Many reported feeling that everything had changed—that life would never be the same. Before, Americans had viewed terrorism as something that happened in other countries. Now they felt vulnerable and afraid.

This sense of vulnerability was underscored just a few days after September 11, when terrorism struck the United States again. Letters containing spores of a bacterium that causes the disease anthrax were sent to people in the news media and to members of Congress in Washington, D.C. Anthrax bacteria, when inhaled, can

MAIN IDEA

Making Inferences

C Why were the specific targets of the September 11 attacks selected by the terrorists?

Destruction in New York City and the Pentagon

▲ The strike on the Pentagon left a charred, gaping hole in the southwest side of the building.

◀ Stunned bystanders look on as smoke billows from the twin towers of the World Trade Center.

damage the lungs and cause death. Five people who came in contact with spores from the tainted letters died of inhalation anthrax. Two were postal workers.

Investigators did not find a link between the September 11 attacks and the anthrax letters. Some of them believed that the letters might be the work of a lone terrorist rather than an organized group. Regardless of who was responsible for the anthrax scare, it caused incredible psychological damage. Many Americans were now fearful of an everyday part of life—the mail.

▲ A hazardous materials team prepares to enter a congressional building during the anthrax scare.

The United States Responds

Immediately after September 11, the United States called for an international effort to combat terrorist groups. President George W. Bush declared, "This battle will take time and resolve. But make no mistake about it: we will win."

As a first step in this battle, the U.S. government organized a massive effort to identify those responsible for the attacks. Officials concluded that Osama bin Laden directed the terrorists. The effort to bring him to justice led the United States to begin military action against Afghanistan in October, as you read in Chapter 34.

Antiterrorism Measures The federal government warned Americans that additional terrorist attacks were likely. It then took action to prevent such attacks. The **Department of Homeland Security** was created in 2002 to coordinate national efforts against terrorism. Antiterrorism measures included a search for terrorists in the United States and the passage of antiterrorism laws.

The al-Qaeda network was able to carry out its terrorist attacks partly through the use of "sleepers." These are agents who move to a country, blend into a community, and then, when directed, secretly prepare for and carry out terrorist acts. A search to find any al-Qaeda terrorists who remained in the United States was begun. Officials began detaining and questioning Arabs and other Muslims whose behavior was considered suspicious or who had violated immigration regulations.

Some critics charged that detaining these men was unfair to the innocent and violated their civil rights. However, the government held that the actions were justified because the hijackers had been Arabs. The government further argued that it was not unusual to curtail civil liberties during wartime in order to protect national security. This argument was also used to justify a proposal to try some terrorist suspects in military tribunals rather than in criminal courts. On October 26, 2001,

▲ Passengers wait to go through a security check at La Guardia Airport in New York.

President Bush signed an antiterrorism bill into law. The law, known as the **USA Patriot Act**, allowed the government to

- detain foreigners suspected of terrorism for seven days without charging them with a crime
- tap all phones used by suspects and monitor their e-mail and Internet use
- make search warrants valid across states
- order U.S. banks to investigate sources of large foreign accounts
- prosecute terrorist crimes without any time restrictions or limitations.

Again, critics warned that these measures allowed the government to infringe on people's civil rights.

Aviation Security The federal government also increased its involvement in aviation security. The Federal Aviation Administration (FAA) ordered airlines to install bars on cockpit doors to prevent passengers from gaining control of planes, as the hijackers had done. Sky marshals—trained security officers—were assigned to fly on planes, and National Guard troops began patrolling airports.

The Aviation and Transportation Security Act, which became law in November 2001, made airport security the responsibility of the federal government. Previously, individual airports had been responsible. The law provided for a federal security force that would inspect passengers and carry-on bags. It also required the screening of checked baggage.

Airline and government officials debated these and other measures for making air travel more secure. Major concerns were long delays at airports and respect for passengers' privacy. It has also become clear that public debate over security measures will continue as long as the United States fights terrorism and tries to balance national security with civil rights.

SECTION 4 ASSESSMENT

TERMS & NAMES 1. For each term or name, write a sentence explaining its significance.
- terrorism
- cyberterrorism
- Department of Homeland Security
- USA Patriot Act

USING YOUR NOTES

2. How were the September 11 terrorist attacks unique? How were they similar to other terrorist incidents?

| World Terrorist Incidents |
| September II Attacks |

MAIN IDEAS

3. How has terrorism changed in recent years?

4. What methods do terrorists use?

5. What steps did the United States take in response to the terrorist attacks of September 11, 2001?

CRITICAL THINKING & WRITING

6. **ANALYZING MOTIVES** What might cause individuals to use terror tactics to bring about change?

7. **FORMING AND SUPPORTING OPINIONS** Is it important for the U.S. government to respect peoples' civil rights as it wages a war against terrorism? Why or why not?

8. **DRAWING CONCLUSIONS** What do you think has been the greatest impact of terrorism on American life?

9. **WRITING ACTIVITY** SCIENCE AND TECHNOLOGY Conduct research to find information on how science and technology are used to combat terrorism. Then write an **illustrated report** titled "Science and Counterterrorism."

INTEGRATED TECHNOLOGY INTERNET ACTIVITY

Use the Internet to research terrorist incidents since the end of 2001. Use your findings to create a **time line** titled "Recent Major Terrorist Attacks."

INTERNET KEYWORD
terrorism

Cultures Blend in a Global Age

MAIN IDEA	WHY IT MATTERS NOW	TERMS & NAMES
CULTURAL INTERACTION Technology has increased contact among the world's people, changing their cultures.	Globalization of culture has changed the ways people live, their perceptions, and their interactions.	• popular culture • materialism

SETTING THE STAGE Since the beginnings of civilization, people have blended ideas and ways of doing things from other cultures into their own culture. The same kind of cultural sharing and blending continues today. But, because of advances in technology, it occurs at a much more rapid pace and over much greater distances. Twenty-first-century technologies allow people from all over the world to have increasing interaction with one another. Such contacts promote widespread sharing of cultures.

Cultural Exchange Accelerates

Cultural elements that reflect a group's common background and changing interests are called **popular culture**. Popular culture involves music, sports, movies, clothing fashions, foods, and hobbies or leisure activities. Popular culture around the world incorporates features from many different lands. Of all the technologies that contribute to such cultural sharing, television, movies, and other mass media have been the most powerful.

Mass Media More people in the United States have televisions than telephones. In fact, 98 percent of American households have at least one television set. Eighty-six percent of the homes have videocassette recorders (VCRs). In Western Europe, too, most households have one or more televisions. Access to television is not so widespread in the emerging nations, but it is growing. Recent estimates suggest that about half the population of the emerging world—some 2.5 billion people—have regular access to a television set.

Television provides a window to the world through daily newscasts and documentaries. The speed at which television can present information helps create an up-to-the-minute shared experience of global events. For example, in 2003, millions of television viewers across the world watched the war in Iraq. Wars, natural disasters, and political drama in faraway places have become a part of everyday life.

Television and other mass media, including radio and movies, are among the world's most popular forms of entertainment. Popular programs not only entertain but also show how people in other parts of the world live and what they value. Mass media is the major way popular culture spreads to all parts of the globe.

International Elements of Popular Culture The entertainment field, especially television, has a massive influence on popular culture. People from around

International Baseball

The sport of baseball is an example of global popular culture. When American missionaries and teachers arrived in Japan in the 1870s, they introduced the game of baseball. Over the years the game gained popularity there. Today, some Major League teams have Japanese players and several American players play in the Japanese league.

Baseball spread to Mexico, Cuba, Puerto Rico, Panama, and the Dominican Republic in the late 19th and early 20th centuries. Today baseball is a popular game in these and other Latin American countries. And more than 25 percent of the players in Major League Baseball come from Latin America.

INTEGRATED / TECHNOLOGY

INTERNET ACTIVITY Create a scrapbook of foreign players in Major League Baseball. Go to **classzone.com** for your research.

the world are avid viewers of American TV programs. For example, in Bhutan, a tiny country high in the Himalaya, ESPN, HBO, Cartoon Network, and CNN are among the most-watched channels. CNN truly is a global channel, since it reaches more than 200 million households in over 200 countries.

Television broadcasts of sporting events provide a front-row seat for sports fans all over the globe. Basketball and soccer are among the most popular televised sports. National Basketball Association (NBA) games are televised in over 200 countries. In China, for example, broadcasts of NBA games of the week regularly attract an audience in the millions. One of the most-watched international sporting events is the soccer World Cup. Nearly 63 million viewers worldwide watched the 2002 World Cup Final.

Music is another aspect of popular culture that has become international. As the equipment for listening to music has become more portable, there are only a few places in the world that do not have access to music from other cultures. People from around the world dance to reggae bands from the Caribbean, chant rap lyrics from the United States, play air guitar to rowdy European bands, and enjoy the fast drumming of Afropop tunes. And the performers who create this music often gain international fame. **A**

MAIN IDEA

Recognizing Effects
A What effects have television and mass media had on popular culture?

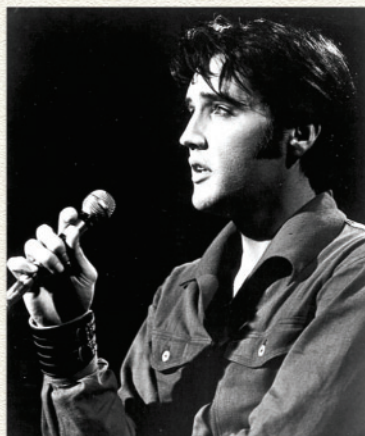## Global Impact: Cultural Crossroads

Rock 'n' Roll

In the middle of the 1950s, a new style of music emerged on the American scene. It was called rock 'n' roll. The music explored social and political themes. Rock music, which seemed to adults to reflect a youth rebellion, soon became the dominant popular music for young people across the world. As the influence of rock music spread, international artists added their own traditions, instruments, and musical styles to the mix called rock.

"The King" ▶

"Rock and roll music, if you like it and you feel it, you just can't help but move to it. That's what happens to me, I can't help it."—Elvis Presley, called the "King of rock 'n' roll" by many.

U2 ▶

U2, led by singer Bono (right), is one of the world's most popular and influential rock bands. Over a career spanning more than 20 years, this Irish band has kept its music vibrant and fresh by absorbing and rework-ing all manner of musical styles. The band has drawn on the blues, gospel, 1950s rock 'n' roll, 1960s protest songs, and hip-hop to create a very distinctive kind of music.

World Culture Blends Many Influences

Greater access to the ideas and customs of different cultures often results in cultural blending. As cultural ideas move with people among cultures, some beliefs and habits seem to have a greater effect than others. In the 20th century, ideas from the West have been very dominant in shaping cultures in many parts of the globe.

Westernizing Influences on Different Cultures Western domination of the worldwide mass media helps explain the huge influence the West has on many different cultures today. However, heavy Western influence on the rest of the world's cultures is actually rooted in the 19th century. Western domination of areas all over the globe left behind a legacy of Western customs and ideas. Western languages are spoken throughout the world, mainly because of Europe's history of colonization in the Americas, Asia, and Africa.

Over the past 50 years, English has emerged as the premier international language. English is spoken by about 500 million people as their first or second language. Although more people speak Mandarin Chinese than English, English speakers are more widely distributed. English is the most common language used on the Internet and at international conferences. The language is used by scientists, diplomats, doctors, and businesspeople around the world. The widespread use of English is responsible, in part, for the emergence of a dynamic global culture.

Western influence can be seen in other aspects of popular culture. For example, blue jeans are the clothes of choice of most of the world's youth. Western business suits are standard uniforms among many people. American-style hamburgers and soft drinks can be purchased in many countries of the world. Mickey Mouse and other Disney characters are almost universally recognized. Western influence also has an effect on ways of thinking in other parts of the world. For example, people

▲ **"World Pop"**
Youssou N'Dour, a singer from the West African country of Senegal, blends traditional African styles with American rock to create a new form that has been called "world-pop fusion."

Patterns of Interaction

VIDEO *Cultural Crossroads: The United States and the World*

The spread of American culture, including sports, fashion, and fast food, has created an international culture recognizable in all corners of the globe. In some cases American culture is simply a powerful influence, as other societies blend American culture with local customs. Cultural blending is evident even in America's past. Symbols of American culture like baseball and hot dogs are themselves the result of cross-cultural influences.

Connect *to* Today

1. **Making Inferences** How have improvements in technology and global communications aided in the blending of musical styles?

   See Skillbuilder Handbook, page R11.

2. **Creating Oral Presentations** Find out the global origins of such aspects of American culture as rock 'n' roll and baseball. Report your findings to the class in an oral presentation.

▲ Kenzaburo Oe of Japan was awarded the Nobel literature prize in 1994. Oe studied Western literature in college, and he has used Western literary styles to tell stories about his personal life and the myths and history of his country.

▲ South African writer Nadine Gordimer won the Nobel Prize for Literature in 1991. Many of her novels and stories published prior to 1991 focused on the evils of the apartheid system. As a result, much of her work was censored or banned by the South African government.

from many different cultures have adopted **materialism**, the Western mindset of placing a high value on acquiring material possessions.

Non-Western Influences Cultural ideas are not confined to moving only from the West to other lands. Non-Western cultures also influence people in Europe and the United States. From music and clothing styles to ideas about art and architecture, to religious and ethical systems, non-Western ideas are incorporated into Western life. And cultural blending of Western and non-Western elements opens communications channels for the further exchange of ideas throughout the globe.

The Arts Become International Modern art, like popular culture, has become increasingly international. Advances in transportation and technology have facilitated the sharing of ideas about art and the sharing of actual works of art. Shows and museums throughout the world exhibit art of different styles and from different places. It became possible to see art from other cultures that had not previously been available to the public.

Literature, too, has become internationally appreciated. Well-known writers routinely have their works translated into dozens of languages, resulting in truly international audiences. The list of Nobel Prize winners in literature over the last 20 years reflects a broad variety of nationalities, including Nigerian, Egyptian, Mexican, South African, West Indian, Japanese, Polish, Chinese, and Hungarian. **B**

MAIN IDEA

Summarizing
B Name three advances that allow a greater sharing of the arts.

Future Challenges and Hopes

Many people view with alarm the development of a global popular culture heavily influenced by Western, and particularly American, ways of life. They fear that this will result in the loss of their unique identity as a people or nation. As a result, many countries have adopted policies that reserve television broadcast time for national programming. For example, France requires that 40 percent of broadcast time be set aside for French-produced programs. And in South Korea, the government limits foreign programming to just 20 percent of broadcast time.

Some countries take a different approach to protecting cultural diversity in the media. Television programmers take American shows and rework them according to their own culture and traditions. As an Indian media researcher noted, "We really want to see things our own way." Other countries take more drastic steps to protect their cultural identity. They strictly censor the mass media to keep unwanted ideas from entering the land.

Sometimes people respond to perceived threats to their culture by trying to return to traditional ways. Cultural practices and rites of passage may receive even more emphasis as a group tries to preserve its identity. In some countries, native groups take an active role in preserving the traditional ways of life. For example, the Maori in New Zealand have revived ancestral customs rather than face cultural extinction. Many Maori cultural activities are conducted in a way that preserves Maori ways of thinking and behaving. In 1987, the New Zealand government recognized the importance of this trend by making the Maori language one of the country's official languages. **C**

MAIN IDEA

Recognizing Effects

C How do people react against greater global interdependence?

Global Interdependence Despite the fear and uncertainty accompanying global interdependence, economic, political, and environmental issues do bring all nations closer together. Nations have begun to recognize that they are dependent on other nations and deeply affected by the actions of others far away. As elements of everyday life and expressions of culture become more international in scope, people across the world gain a sense of connectedness with people in other areas of the world. For example, the response to the events of September 11, 2001, was international in scope. People from around the world expressed their concern and support for the United States. It was as if this act of terrorism had struck their own countries.

Throughout history, human beings have faced challenges to survive and to live better. In the 21st century, these challenges will be faced by people who are in increasing contact with one another. They have a greater stake in learning to live in harmony together and with the physical planet. As Dr. Martin Luther King, Jr., stated, "Our loyalties must transcend our race, our tribe, our class, and our nation; and this means we must develop a world perspective."
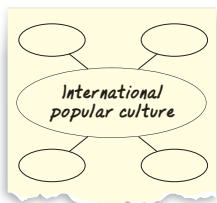
SECTION 5 ASSESSMENT

TERMS & NAMES 1. For each term or name, write a sentence explaining its significance.
• popular culture   • materialism

USING YOUR NOTES

2. Which of the international popular culture aspects has the greatest effect on your life? Why?

International popular culture

MAIN IDEAS

3. How do the mass media spread popular culture across the world?

4. Why do Western cultures tend to dominate other cultures?

5. What steps have governments and people taken to protect cultural diversity?

CRITICAL THINKING & WRITING

6. **CLARIFYING** Why are the mass media such an effective means of transmitting culture?

7. **RECOGNIZING EFFECTS** Do you think that limiting the amount of foreign television programming is an effective way to protect cultural diversity? Why or why not?

8. **FORMING AND SUPPORTING OPINIONS** "Ethnocentrism— the belief in the superiority of one's own ethnic group—has taken hold in the world." Do you agree or disagree? Explain.

9. **WRITING ACTIVITY** CULTURAL INTERACTION Write a **letter** to a friend in another country describing the elements of American popular culture they might appreciate.

CONNECT TO TODAY CREATING A SCRAPBOOK

Study current newspapers and magazines to find pictures that show cultural blending. Create a **scrapbook** of these pictures. Write captions explaining how each picture illustrates cultural blending.