

CHAPTER 36 Section 1 (pages 1071–1074)

The Impact of Science and Technology

BEFORE YOU READ

In the last section, you read about struggles for democracy in China.

In this section, you will learn about recent changes in science and technology.

AS YOU READ

Use the chart below to take notes on recent developments and discoveries and their effects.

TERMS AND NAMES

International Space Station Project, involving 16 nations, to build a huge laboratory in space

Internet Worldwide computer network

genetic engineering Use of genes to develop new products and cures

cloning Process of creating identical copies of DNA for research and other purposes

green revolution Attempt to increase food resources worldwide in the 20th century

DEVELOPMENT/DISCOVERY	EFFECT
Satellites	Improved television broadcasts.

Exploring the Solar System and Beyond (pages 1071–1072)

How did competition give way to cooperation in space?

From the 1950s to the 1970s, the United States and Soviet Union took their Cold War rivalry to space. Each nation tried to be the first to reach the moon and beyond.

In the 1970s, the two nations began to cooperate in space exploration. In 1975, United States and Soviet spacecraft *docked*, or joined together, in space. Later, American and Soviet space missions included scientists from other countries. In the late 1990s, the United States, Russia, and 14 other nations began working together to build the **International Space Station**.

Some space missions did not include human crew members. Unmanned flights sent back pictures and information about other planets.

In 1990, the United States and European countries sent the Hubble Space Telescope into orbit around the earth. This satellite sent back *unprecedented* images of objects in space.

1. Give three examples of international cooperation in space.

Expanding Global Communications (pages 1072–1073)

How has technology changed communications?

Every day satellites are used to track the weather around the world. They are also used to search for minerals on the planet. Satellites allow television broadcasts to carry events live around the world.

Another advance in technology has been the computer. Computers have become more powerful since they were first invented. At the same time, they have gotten smaller in size. Consumer goods such as microwave ovens, telephones, and cars often include computer chips to keep them running.

Millions of people around the world use personal computers at work or at home. Many of these people are connected through the **Internet**, a worldwide computer network. The Internet allows people to get a great deal of information more quickly and easily than ever before. The Internet also allows people to communicate with one another.

2. How have computers changed everyday living?

Transforming Human Life

(pages 1073–1074)

How has new technology changed medicine?

New technology has changed medicine. *Lasers* allow doctors to perform surgery to fix problems in delicate areas, such as in the eye or the brain. New methods for making images of the body help doctors locate problems.

Research into genes has helped unlock the secrets of some diseases. **Genetic engineering** enables scientists to use genes in new ways. For example, scientists can develop plants with special traits. **Cloning** is part of genetic engineering. It is the creation of identical copies of *DNA*. Cloning can be used to produce plants and animals that are identical to the existing plants and animals. The application of this new understanding of genes has led to many developments in agriculture.

Scientists have made other advances in farming. In the **green revolution**, scientists have developed new strains of food crops to help farmers grow more food.

3. Why is genetic engineering an important development?

CHAPTER 36 Section 2 (pages 1075–1081)

Global Economic Development

BEFORE YOU READ

In the last section, you read about changes in science and technology.

In this section, you will read about the new global economy.

AS YOU READ

Use the chart below to show the causes and effects of global economic development.

TERMS AND NAMES

developed nation Industrialized nation

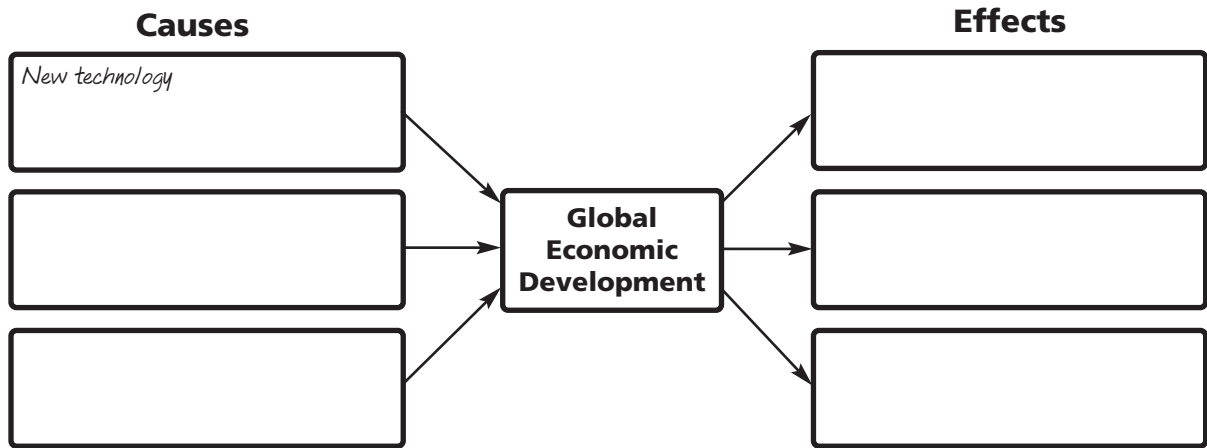
emerging nation Nation that is still developing industry

global economy Economy linking the economies of many nations

free trade Absence of barriers that can block trade between countries

ozone layer Layer of atmosphere that blocks dangerous rays from the sun

sustainable growth Economic growth that meets current needs but conserves resources for the future



Technology Revolutionizes the World's Economy (pages 1075–1076)

How have the economies of the developed nations changed?

Technology has changed the world's economies. In the 1950s, scientists found new ways to make plastics, which came to be widely used. In recent years, industries have begun using robots to make products. These changes have required workers to have more and different skills than before.

In industrialized nations, or **developed nations**, there are more jobs in service and information industries. Manufacturing jobs began to grow more quickly in the **emerging nations** where wages are lower.

1. What types of jobs are on the increase in developed nations?

Economic Globalization (pages 1076–1077)

Why is free trade important in a global economy?

A **global economy** continued to develop in the 1980s. Telephone and computer links connect banks and other financial companies around the world. *Multinational corporations* operate in many countries.

After World War II, many leaders believed that world economies would grow best if there were **free trade**. This means there would be no barriers to block goods from one country from entering another country. Many steps have been taken to put free trade in practice. In 1951, some nations in Europe joined together to create free trade. That group, now called the *European Union* (EU), has grown to become a powerful trading bloc.

The United States, Canada, and Mexico agreed to the North American Free Trade Agreement (NAFTA) in 1994. Another free trade zone was set up in Latin America. Similar groups are being put together in Africa and Asia.

In recent years, there has been considerable disagreement on the impact of the globalization of the economy. Supporters suggest that open, competitive markets and the free flow of goods, services, technology, and investments benefit all nations. Opponents charge that globalization has been a disaster for the poorest countries. Many, they suggest, are worse off today than they were in the past.

2. Name three steps that have been taken in the direction of free trade.

Impact of Global Development

(pages 1079–1080)

How has the development of the global economy affected the use of energy and other resources?

Economic growth needs many resources. Manufacturing and trade both use huge amounts of energy. Oil has been a major source of this energy. Whenever the flow of oil has been threatened, the world's economies have suffered shocks.

In 1990, Iraq invaded Kuwait. This threatened the flow of Kuwaiti oil. Soon, the countries of the United Nations went to war against Iraq. This was known as the Gulf War.

Economic growth has also caused environmental problems. Burning coal and oil has polluted the air. It has also caused *acid rain* and contributed to global warming. The release of some chemicals into the air has weakened Earth's **ozone layer**. This layer of atmosphere blocks dangerous rays from the sun.

One new idea about growth involves sustainable development. **Sustainable growth** requires meeting current needs while *conserving* future resources.

3. What environmental problems have resulted from economic growth?

CHAPTER 36 Section 3 (pages 1082–1086)

Global Security Issues

BEFORE YOU READ

In the last section, you read about the growth of the global economy.

In this section, you will read about challenges to global security.

AS YOU READ

Use the web below to take notes on threats to global security.

TERMS AND NAMES

proliferation spread

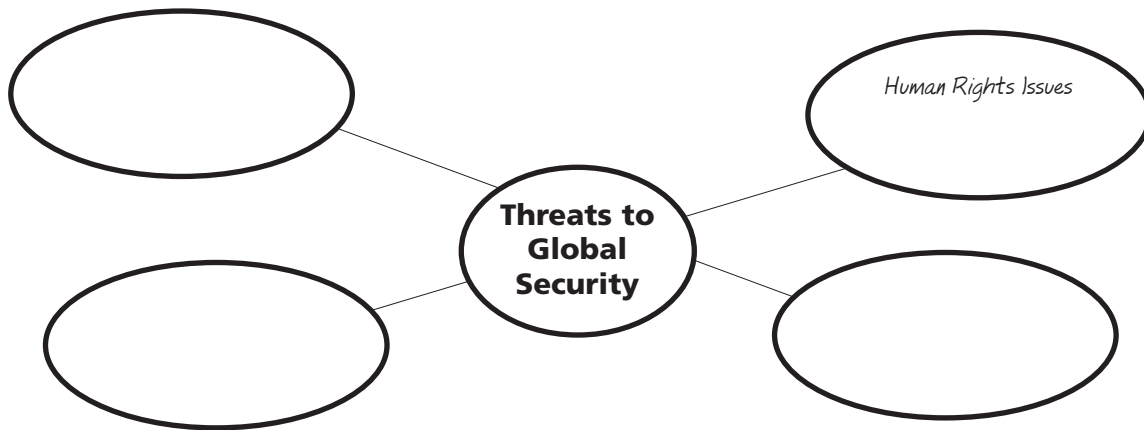
Universal Declaration of Human Rights 1948 United Nations statement of specific rights that all people should have

political dissent Difference of opinion over political issues

gender inequality Difference between men and women in terms of wealth and status

AIDS Acquired immune deficiency syndrome, a disease that attacks the immune system, leaving sufferers open to deadly infections

refugees People who leave their country to move to another to find safety



Issues of War and Peace

(pages 1082–1083)

How have nations worked together for global security?

After World War II, nations joined together to pursue global security. The United Nations (UN) was formed at the end of World War II to promote world peace. It now has more than 180 member nations. The UN provides a place for countries—or groups within countries—to share their views.

The UN can also send troops as a *peacekeeping force*. These soldiers—who come from member

nations—try to stop violence from breaking out. UN peacekeepers have served in regions such as Asia and Africa.

Another approach to world peace has been to limit weapons of mass destruction. These include *nuclear weapons*, *chemical weapons*, and *biological weapons*. In 1968, many nations signed a Nuclear Non-Proliferation Treaty. The nations that signed the treaty agreed to prevent the **proliferation**, or spread, of nuclear weapons. In the 1990s, the United States and Russia agreed to destroy many of their nuclear weapons. In another treaty, many nations promised not to develop chemical or biological weapons.

Ethnic and religious differences are the sources of many world conflicts. Some of these conflicts have roots that reach back decades or, in a few cases, centuries. Governments and many international organizations, including the UN, are trying to find peaceful solutions to these conflicts.

1. Name two specific approaches toward collective security.

Human Rights Issues (page 1084)

What efforts have been made to ensure human rights?

In 1948, the UN approved the **Universal Declaration of Human Rights**. This declaration gives a list of rights that all people should have. In 1975, many nations signed the Helsinki Accords that also support human rights. Many groups around the world watch to see how well nations do in protecting these rights for their people.

Despite the efforts of human rights organizations, violations of fundamental rights continue to occur around the world. One type of violation occurs when governments try to stamp out **political dissent**. In many countries, individuals and groups have been persecuted for holding political views that differ from those of the government.

In the past, women suffered considerable discrimination. However, a heightened awareness of human rights encouraged women to work to improve their lives. They pushed for new laws that gave them greater equality. Since the 1970s, women have made notable gains, especially in the areas of education and work. Even so, **gender inequality** still is an issue.

2. Name two events that have been important in the worldwide struggle for human rights.

Health Issues (page 1085)

What is the greatest challenge to global health?

Recently, 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. Perhaps the greatest global challenge to the attainment of good health is **AIDS**, or acquired immune deficiency syndrome. AIDS is a worldwide problem. However, Sub-Saharan Africa has suffered most from the epidemic. The disease has had devastating impact on the populations and economies of many countries in this region.

3. Which area of the world has been hardest hit by the AIDS epidemic?

Population Movement (page 1086)

What are some of the causes of the global movement of people?

In recent years, millions of people have moved from one country to another. Some people are **refugees**, who leave to escape natural disasters or harsh treatment at home. Others leave for more positive reasons—the chance of a better life for themselves and their children, for example.

While people have a right to leave, every country does not have to accept them. Sometimes these people have to live in crowded refugee camps. They suffer hunger and disease. They can also cause political problems for the country where they are held. However, immigrants also can bring many benefits to their new home.

4. What problems can result from the global movement of people?

CHAPTER 36 Section 4 (pages 1087–1092)

TERMS AND NAMES

terrorism Use of violence against people or property to force changes in societies or governments

cyberterrorism Attacks on information systems for political reasons

Department of Homeland Security Department of the U.S. government that organizes the fight against terrorism in the United States.

USA Patriot Act Antiterrorism law that allowed the government certain rights to help chase and capture terrorists

Terrorism

Case Study: September 11, 2001

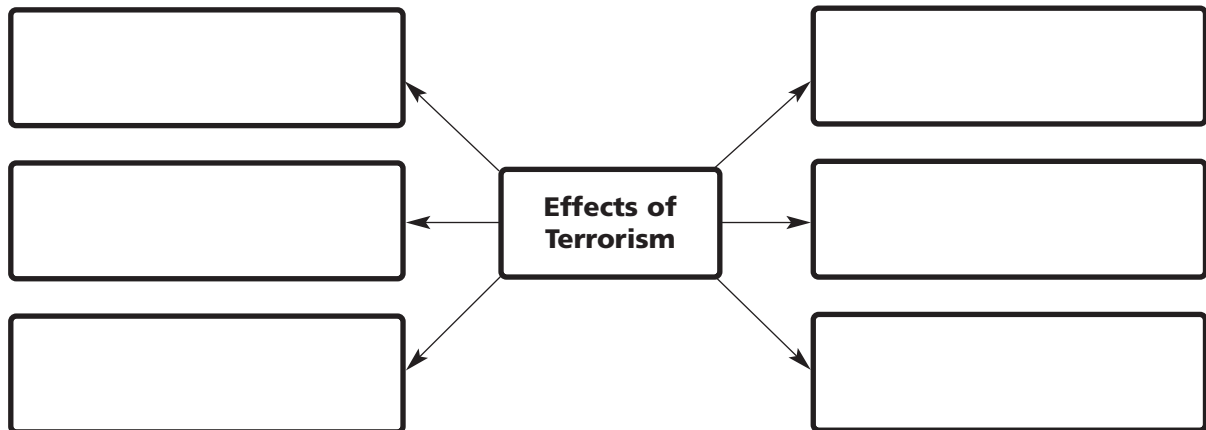
BEFORE YOU READ

In the last section, you read about global security issues.

In this section, you will learn about terrorism and its effect on today's world.

AS YOU READ

Use a chart like the one below to take notes on the effects of terrorism.



What Is Terrorism? (pages 1087–1088)

What motivates terrorists and what methods do they use?

Terrorism is the use of violence against people or property to force changes in societies or governments. The reasons for modern terrorism are many. Reasons include gaining independence, getting rid of foreigners, and changing society. In the late 20th century, another type of terrorist appeared. These terrorists wanted to destroy what they believed were the forces of evil.

Terrorists use violence to try to achieve their goals. Terrorists often use bombs and bullets. The targets of terrorist attacks usually are crowded places. Some terrorist groups have used biological and chemical

weapons. Attacks on information systems such as computer networks are called **cyberterrorism**. These attacks are done for political reasons.

1. What types of weapons do terrorists use?

Terrorism Around the World

(pages 1088–1089)

How has terrorism affected the world?

In the Middle East, Palestinians and Israelis have argued for decades about land ownership. This argu-

ment has resulted in many terrorist acts. Often a Palestinian group does an act of terrorism. In response, the Israelis strike back. In Northern Ireland, the Irish Republican Army (IRA) has carried out terrorist acts for many years. The IRA want the British to give up control over Northern Ireland.

Many terrorist groups are found in East Asia. For example, a religious cult named Aum Shinrikyo wants to control Japan. In Africa, civil unrest and regional wars cause most terrorist acts. Narcoterrorism often happens in Latin America. Narcoterrorism is terrorism connected with the trade of illegal drugs.

2. What has caused most of the terrorist activity in Africa?

Attack on the United States

(pages 1090–1091)

How has terrorism affected the United States?

On the morning of September 11, 2001, 19 Arab terrorists *hijacked* four airliners. The hijackers crashed two of the jets into the twin towers of the World Trade Center in New York City. The third jet destroyed part of the Pentagon in Washington, D.C. The fourth plane crashed in an empty field in Pennsylvania.

As a result of the attacks, the twin towers fell to the ground within two hours. About 3,000 people died in all the attacks. The dead included more than 340 New York City firefighters and 60 police officers. They had rushed to the World Trade Center to help people in the buildings.

Before September 11, many Americans thought that terrorism was something that happened in other countries. After September 11, many Americans became afraid that terrorist attacks could happen to them.

A few days after September 11, letters containing the disease anthrax were mailed. The letters were sent to people in the news media and to members of Congress. Five people died from inhaling the anthrax in these letters. Officials did

not find a link between the anthrax letters and the September 11 attacks.

3. How did the September 11 attacks affect the way Americans looked at life?

The United States Responds

(pages 1091–1092)

How has the United States fought back against terrorism?

After September 11, the United States asked for an international effort to fight terrorism. U.S. officials suspected that Osama bin Laden directed the September 11 attacks. Bin Laden was the leader of a terrorist group called al-Qaeda.

The U.S. government created the **Department of Homeland Security** in 2002. Its job was to organize the fight against terrorism in the United States.

U.S. officials began to search for al-Qaeda terrorists in the United States. In addition, U.S. officials arrested and questioned many Arabs and other Muslims. Critics said that arresting people because of nationality or religion was unfair. They said that some of the arrested people probably did not commit a crime.

The **USA Patriot Act** became law. This law allowed the government several powers to help chase and capture terrorists.

The Federal Aviation Administration (FAA) ordered airlines to put bars on cockpit doors. These bars would help stop hijackers from getting control of planes. National Guard troops began to guard airports. Trained security officers called sky marshals were put on planes. The Aviation and Transportation Security Act was passed. It put the federal government in charge of airport security.

4. How was aviation security increased?

CHAPTER 36 Section 5 (pages 1093–1097)**TERMS AND NAMES**

popular culture Cultural elements—such as sports, music, movies, and clothing—that reflect a group’s common background

materialism Placing high value on owning things

Cultures Blend in a Global Age

BEFORE YOU READ

In the last section, you read about terrorism.

In this section, you will learn about the global blending of cultures.

AS YOU READ

Use the chart below to take notes on the blending of cultures around the world.

MAIN IDEA	SUPPORT
<i>Sharing of cultures has speeded up</i>	<i>Television and other mass media have sped up cultural sharing</i>

Cultural Exchange Accelerates

(pages 1093–1094)

What has speeded up the sharing of cultures?

Changes in technology have made it possible for people to share their cultures with one another. Television is one of the main forces in this trend. It allows people to see things that happen around the world. Movies and radio also have had an impact in bringing the world’s people together.

As a result of these *mass media*, the world’s popular culture now includes elements from many different cultures. **Popular culture** includes music, sports, clothing styles, food, and hobbies. American television shows have become popular around the

world. Broadcasts of some sporting events can reach millions of people in all corners of the globe. Music has also become international.

- 1. Name three aspects of culture that have become international.**

World Culture Blends Many Influences

(pages 1095–1096)

What countries have most influenced cultural blending?

Cultural blending occurs when parts of different cultures are combined. In recent times, the United

States and Europe have been a major force in this blending. One reason is that Western nations dominate the mass media.

The political power of the West has also spread Western culture to other regions. For example, English is now a major world language. About 500 million people speak English as their first or second language. More people speak Mandarin Chinese. But English speakers are more widely spread throughout the world. Western clothes can be seen throughout the world.

Western ideas have also influenced world thought. The Western idea of **materialism**—placing high value on owning things—has also spread. Some ideas have also traveled from East to West. The worlds of art and literature have become more international in recent years.

2. What Western aspects of culture have spread throughout the world?

Future Challenges and Hopes (pages 1096–1097)

How has the world responded to cultural blending?

Some people think the spread of international culture is a problem. They worry that their own culture will be swallowed up by other cultures. Some countries have adopted policies that reserve television broadcast time for national programming. In other countries, television programmers take Western programs and rework them according to their own culture. In some areas, people have returned to old traditions in order to keep them alive.

The people of the world are becoming more and more dependent on each another. All through human history, people have faced challenges to their survival. In the 21st century, those challenges will be faced by people who are in increasing contact with one another. They have a great stake in living together in harmony.

3. What problems or challenges can cultural blending bring?
