

Revolution and Enlightenment

1550–1800

Key Events

As you read this chapter, look for the key events in the history of the Scientific Revolution and the Enlightenment.

- The ideas of the Scientific Revolution and the Enlightenment laid the foundation for a modern worldview based on rationalism and secularism.
- Enlightenment thought led some rulers to advocate such natural rights as equality before the law and freedom of religion.
- The American colonies formed a new nation and ratified the Constitution of the United States.

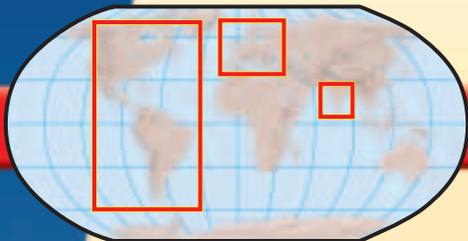
The Impact Today

The events that occurred during this time period still impact our lives today.

- Scientists use research techniques that are based on the scientific method.
- The intellectuals of the Enlightenment advocated the rights of the individual, paving the way for the rise of democracy.
- Montesquieu’s idea of separation of powers strongly influenced the writing of the Constitution of the United States.



World History—Modern Times Video The Chapter 10 video, “New Scientific Thinking,” chronicles the origins of the Scientific Revolution in Europe and its impact on scientific thinking worldwide.



Francis Bacon

1620
Francis Bacon publishes the *Novum Organum*

1633
The Church condemns Galileo’s teachings

1687
Isaac Newton publishes the *Principia*

1550

1575

1600

1625

1650

1675

1543
Nicholas Copernicus presents a new view of the universe



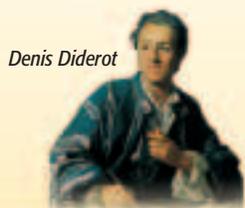
1666
Royal Academy of Science founded in France

Engraving of Copernican system, 1661





Louis XIV at the French Royal Academy of Sciences



Denis Diderot

1751
Diderot becomes editor of the *Encyclopedia*

1763
The Seven Years' War ends

1788
The Constitution of the United States is ratified by nine states

1700

1725

1750

1775

1800

1825



British general, James Wolfe

1759
James Wolfe dies in battle outside Quebec, Canada

1776
American colonies declare independence from Britain

1792
Mary Wollstonecraft publishes *A Vindication of the Rights of Women*

HISTORY Online

Chapter Overview

Visit the *Glencoe World History—Modern Times* Web site at wh.mt.glencoe.com and click on **Chapter 10—Chapter Overview** to preview chapter information.

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A Story That Matters



Galileo sits before the Inquisition in Rome.

Galileo on Trial

The Italian scientist Galileo found himself in trouble with the authorities of the Catholic Church. Galileo believed in a new worldview. He explained to a friend, “I hold the Sun to be situated motionless in the center of the revolution of the celestial bodies, while . . . Earth rotates on its axis and revolves about the Sun.” Moreover, “nothing physical that sense-experience puts before our eyes . . . ought to be called in question (much less condemned) upon the testimony of passages from the Bible.”

The Catholic Church had a different view. In 1632, Galileo, 68 years old and in ill health, was called before the dreaded Inquisition in Rome. He was kept waiting for two months before he was tried and found guilty of heresy and disobedience. The report of the Inquisition said: “The view that the Sun stands motionless at the center of the universe is foolish, philosophically false, and utterly heretical, because contrary to Holy Scripture.”

Completely shattered by the experience, Galileo recanted in 1633: “With a sincere heart I curse and detest the said errors contrary to the Holy Church, and I swear that I will nevermore in future say or assert anything that may give rise to a similar suspicion of me.” Legend holds that when he left the trial room, Galileo muttered to himself, “And yet it [Earth] does move!”

Why It Matters

Galileo was one of the scientists of the seventeenth century who set the Western world on a new path. That path, known as the Scientific Revolution, developed a new way of viewing the universe.

In the eighteenth century, a group of intellectuals used the ideas of the Scientific Revolution to reexamine all aspects of life and began what came to be called the Age of Enlightenment. The ideas of the Enlightenment helped foster the American and French Revolutions.

History and You The philosopher Adam Smith used Enlightenment ideas to identify economic laws. Read the front page, business section, and classifieds of a newspaper. Create a poster with articles and advertisements reflecting Smith’s economic principles.

SECTION 1

The Scientific Revolution

Guide to Reading

Main Idea

- The Scientific Revolution gave Europeans a new way to view humankind's place in the universe.

Key Terms

geocentric, Ptolemaic system, heliocentric, universal law of gravitation, rationalism, scientific method, inductive reasoning

People to Identify

Ptolemy, Nicholas Copernicus, Galileo Galilei, Isaac Newton, Robert Boyle, Margaret Cavendish, Maria Winkelmann, René Descartes, Francis Bacon

Places to Locate

Poland, Padua



Preview Questions

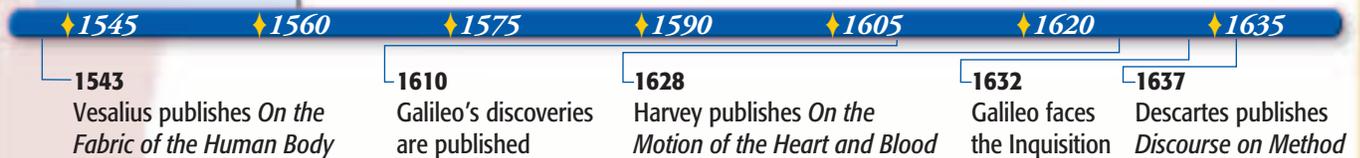
- How did the Scientific Revolution begin?
- What is the scientific method?

Reading Strategy

Summarizing Information Use a table like the one below to identify the contributions of Copernicus, Kepler, Galileo, and Newton to the development of a new concept of the universe.

Copernicus	
Kepler	
Galileo	
Newton	

Preview of Events



Galileo Galilei

Voices from the Past

In 1610, Galileo described what he had observed with his newly devised telescope:

“Now let us review the observations made during the past two months. . . . Let us speak first of that surface of the Moon which faces us. For greater clarity I distinguish two parts of this surface, a lighter and a darker. . . . [T]he darker part makes the Moon appear covered with spots. . . . From observation of these spots. . . . I have been led to the opinion and conviction that the surface of the Moon is not smooth, uniform, and precisely spherical as a great number of philosophers believe it and the other heavenly bodies to be, but is uneven, rough, and full of cavities, not unlike the face of . . . Earth, relieved by chains of mountains and deep valleys.”

—*Discoveries and Opinions of Galileo*, Stillman Drake, ed., 1957

Galileo's observations helped to create a new view of the universe in the seventeenth century.

Background to the Revolution

In the Middle Ages, many educated Europeans took an intense interest in the world around them. However, these “natural philosophers,” as medieval scientists were known, did not make observations of the natural world. These scientists relied on a few ancient authorities—especially Aristotle—for their scientific knowledge. A number of changes in the fifteenth and sixteenth centuries caused



the natural philosophers to abandon their old views and develop new ones.

Renaissance humanists had mastered Greek as well as Latin and thus had access to newly discovered works by **Ptolemy** (TAH•luh•mee), Archimedes, and Plato. These writings made it obvious that some ancient thinkers had disagreed with Aristotle and other accepted authorities of the Middle Ages.

Other developments also encouraged new ways of thinking. Technical problems that required careful observation and accurate measurements, such as calculating the amount of weight that ships could hold, served to stimulate scientific activity. Then, too, the invention of new instruments, such as the telescope and microscope, made fresh scientific discoveries possible. Above all, the printing press helped spread new ideas quickly and easily.

Mathematics played a very important role in this revolution in science. The study of mathematics was promoted in the Renaissance by the rediscovery of the works of ancient mathematicians. Nicholas Copernicus, Johannes Kepler, Galileo Galilei, and Isaac Newton were all great mathematicians who

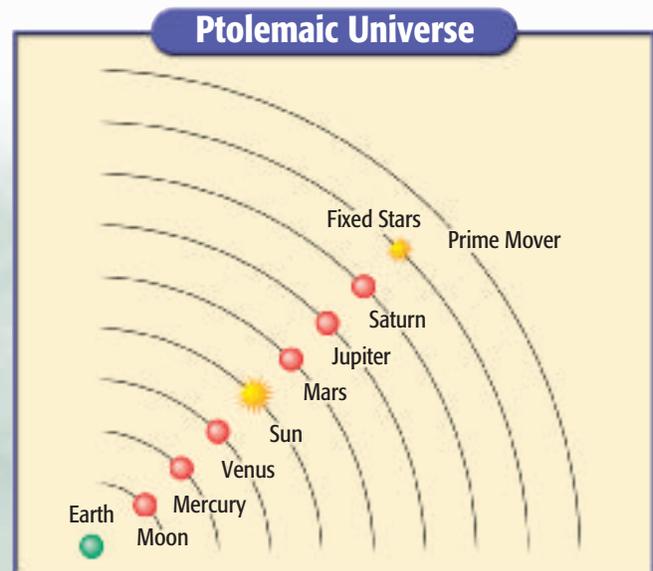
believed that the secrets of nature were written in the language of mathematics. After studying and, sometimes, discarding the ideas of the ancient mathematicians, these intellectuals developed new theories that became the foundation of the Scientific Revolution. Sometimes historians refer to this period as the Age of Reason.

✓ Reading Check Evaluating What changes in the fifteenth and sixteenth centuries helped the natural philosophers develop new views?

A Revolution in Astronomy

Especially significant in the Scientific Revolution were discoveries in astronomy. These discoveries would overturn the conception of the universe held by Westerners in the Middle Ages.

The Ptolemaic System Ptolemy, who lived in the second century A.D., was the greatest astronomer of antiquity. Using his ideas, as well as those of Aristotle and of Christianity, the philosophers of the Middle



Picturing History

These astronomers, Ptolemy (left) and Copernicus (shown on page 295), were separated in time by approximately 1,400 years. Both men had a major impact on the way people viewed their place in the universe. **What elements do you see in the two illustrations that help to convey to the viewer the importance of the two men and their scientific discoveries?**

Ages had constructed a model of the universe known later as the Ptolemaic (TAH•luh•MAY•ik) system. This system is called **geocentric** because it places Earth at the center of the universe.

In the **Ptolemaic system**, the universe is a series of concentric spheres—spheres one inside the other. Earth is fixed, or motionless, at the center of these spheres. The spheres are made of a crystal-like, transparent substance, in which the heavenly bodies—pure orbs of light—are embedded. For example, the Moon is embedded in the first sphere, Mercury in the second, Venus in the third, and the Sun in the fourth. The rotation of the spheres makes these heavenly bodies rotate about the earth and move in relation to one another.

The tenth sphere in the Ptolemaic system was the “prime mover,” which moved itself and gave motion to the other spheres. Beyond the tenth sphere was Heaven, where God and all the saved souls resided. God was at one end of the universe, then, and humans were at the center. Humans had been given power over the earth, but their real purpose was to achieve salvation.

Copernicus and Kepler In May 1543, **Nicholas Copernicus**, a native of **Poland**, published his famous book, *On the Revolutions of the Heavenly Spheres*. Copernicus, a mathematician, felt that the geocentric system was too complicated. He believed that his **heliocentric**, or sun-centered, conception of the universe offered a more accurate explanation than did the Ptolemaic system.

Copernicus argued that the Sun, not Earth, was at the center of the universe. The planets revolved around the Sun. The Moon, however, revolved around Earth. Moreover, according to Copernicus, the apparent movement of the Sun around Earth was really caused by the daily rotation of Earth on its axis and the journey of Earth around the Sun each year.

The next step in destroying the Ptolemaic system was taken by the German mathematician Johannes Kepler. Kepler used detailed astronomical data to arrive at his laws of planetary motion. His observations confirmed that the Sun was at the center of the universe and also added new information. In his first law, Kepler showed that the orbits of the planets around the Sun were not circular, as Copernicus

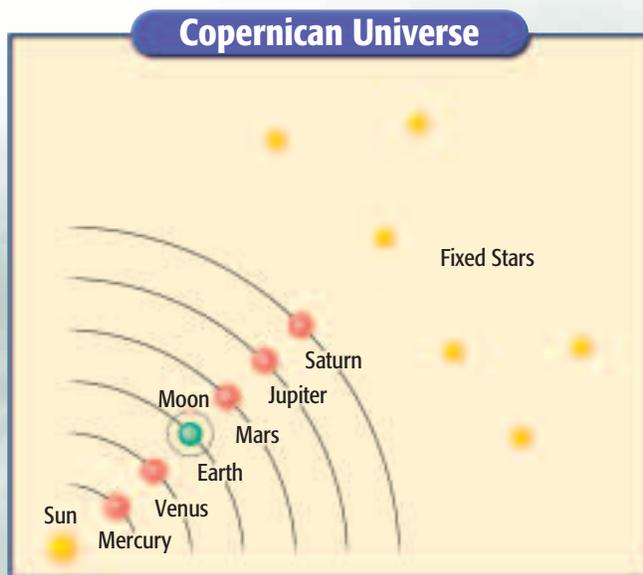
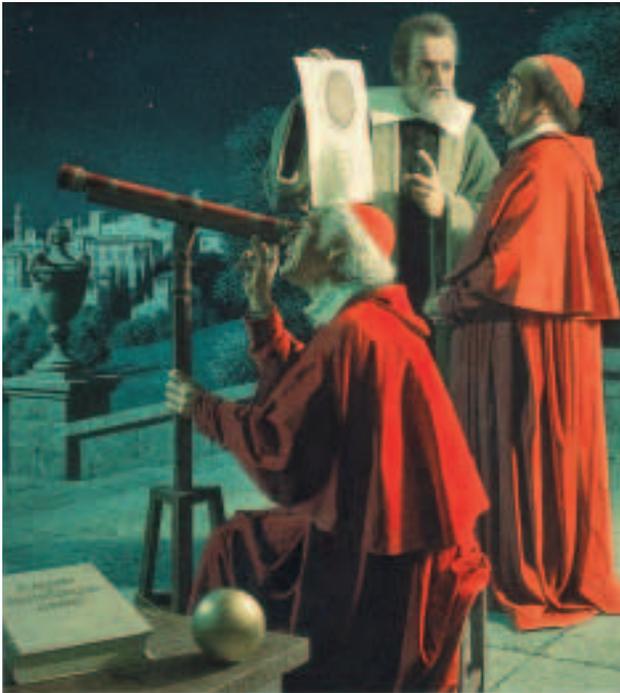


Chart Skills

Compare the illustrations of two different models of the universe on the previous page and this page, then answer the questions below.

- 1. Compare and Contrast** Identify as many specific similarities and differences as you can find in the two models.
- 2. Explaining** Explain the changes in the way people viewed the universe that resulted from the mathematical and scientific discoveries of Copernicus.





Galileo displays his drawings to the clergy.

had thought. Rather, the orbits were elliptical (egg-shaped), with the Sun toward the end of the ellipse instead of at the center. This finding, known as Kepler's First Law, contradicted the circular orbits and crystal-like spheres that were central to the Ptolemaic system.

Galileo Scientists could now think in terms of planets revolving around the Sun in elliptical orbits. Important questions remained unanswered, however. What are the planets made of? How does one explain motion in the universe? An Italian scientist answered the first question.

Galileo Galilei taught mathematics. He was the first European to make regular observations of the heavens using a telescope. With this tool, Galileo made a remarkable series of discoveries: mountains on the Moon, four moons revolving around Jupiter, and sunspots.

Galileo's observations seemed to destroy yet another aspect of the Ptolemaic conception. Heavenly bodies had been seen as pure orbs of light. Instead, it appeared that they were composed of material substance, just as Earth was.

Galileo's discoveries, published in *The Starry Messenger* in 1610, did more to make Europeans aware of the new view of the universe than did the works of Copernicus and Kepler. In the midst of his newfound fame, however, Galileo found himself under suspicion by the authorities of the Catholic Church.

The Church ordered Galileo to abandon the Copernican idea. The Copernican system threatened the Church's entire conception of the universe and seemed to contradict the Bible. In the Copernican view, the heavens were no longer a spiritual world but a world of matter. Humans were no longer at the center of the universe, and God was no longer in a specific place.

In spite of the Church's position, by the 1630s and 1640s, most astronomers had come to accept the heliocentric conception of the universe. However, the problem of explaining motion in the universe had not been solved, and the ideas of Copernicus, Kepler, and Galileo had yet to be tied together. This would be done by an Englishman who has long been considered the greatest genius of the Scientific Revolution.

Newton Born in 1642, **Isaac Newton** showed few signs of brilliance until he attended **Cambridge University**. Later, he became a professor of mathematics at the university and wrote his major work, *Mathematical Principles of Natural Philosophy*. This work is known simply as the *Principia*, by the first word of its Latin title.

In the first book of the *Principia*, Newton defined the three laws of motion that govern the planetary bodies, as well as objects on Earth. Crucial to his whole argument was the **universal law of gravitation**. This law explains why the planetary bodies do not go off in straight lines but instead continue in elliptical orbits about the Sun. The law states, in mathematical terms, that every object in the universe is attracted to every other object by a force called gravity.



Isaac Newton analyzing light rays

Newton had shown that one universal law, mathematically proved, could explain all motion in the universe. At the same time, Newton's ideas created a new picture of the universe. It was now seen as one huge, regulated, uniform machine that worked according to natural laws. Newton's world-machine concept dominated the modern worldview until the twentieth century, when Albert Einstein's concept of relativity created a new picture of the universe.

✓ Reading Check Identifying Name the four great mathematicians who had a profound impact on astronomy.

Breakthroughs in Medicine and Chemistry

A revolution in medicine also began in the sixteenth century. Medicine in the Late Middle Ages was dominated by the teachings of the Greek physician Galen, who had lived in the second century A.D. Galen had relied on animal, rather than human, dissection to arrive at a picture of human anatomy, and he was wrong in many instances.

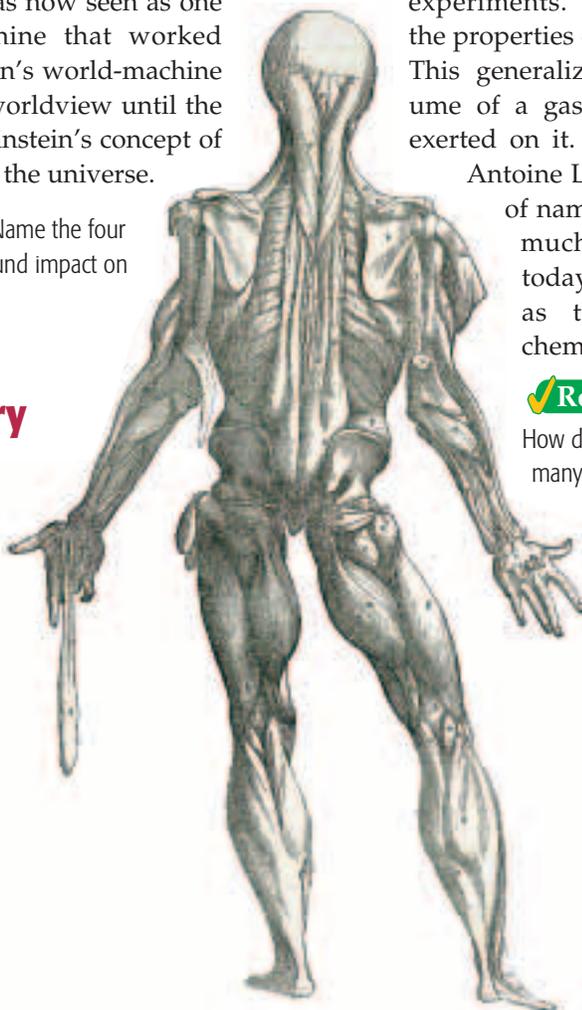
The new anatomy of the sixteenth century was based on the work of Andreas Vesalius. In his 1543 book, *On the Fabric of the Human Body*, Vesalius discussed what he had found when dissecting human bodies while he was a professor of surgery at the University of **Padua**.

Vesalius presented a careful and accurate examination of the individual organs and general structure of the human body. His "hands-on" approach enabled him to overthrow some of Galen's theories. Nevertheless, Vesalius still clung to Galen's erroneous idea that two kinds of blood flowed in the veins and arteries.

William Harvey's reputation rests on his book *On the Motion of the Heart and Blood*, published in 1628. Harvey's work was based on close observations and experiments. Harvey showed that the heart—not the liver, as Galen had thought—was the beginning point for the circulation of blood in the body. He also proved that the same blood flows in both veins and arteries. Most important, he showed that the blood makes a complete circuit as it passes through the body.

A science of chemistry also arose in the seventeenth and eighteenth centuries. **Robert Boyle** was one of the first scientists to conduct controlled experiments. His pioneering work on the properties of gases led to Boyle's Law. This generalization states that the volume of a gas varies with the pressure exerted on it. In the eighteenth century, Antoine Lavoisier invented a system of naming the chemical elements, much of which is still used today. He is regarded by many as the founder of modern chemistry.

✓ Reading Check Describing How did Vesalius and Harvey disprove many of Galen's theories?



Drawings such as this from Vesalius's On the Fabric of the Human Body did much to revolutionize knowledge of human anatomy and medicine.

Women and the Origins of Modern Science

Women as well as men were involved in the Scientific Revolution. One of the most prominent female scientists of the seventeenth century, **Margaret Cavendish**, came from an aristocratic family. She wrote a number of works on scientific matters, including *Observations Upon Experimental Philosophy*.

In her work, Cavendish was especially critical of the growing belief that humans, through science, were the masters of nature: "We have no power at all over natural causes and effects . . . for man is but a small part, his powers are but particular actions of Nature, and he cannot have a supreme and absolute power."

In Germany, many of the women who were involved in science were astronomers. These women had received the opportunity to become astronomers from working in family observatories, where they had been trained by their



Margaret Cavendish

fathers or husbands. Between 1650 and 1710, women made up 14 percent of all German astronomers.

The most famous of the female astronomers in Germany was **Maria Winkelmann**. She received training in astronomy from a self-taught astronomer. Her chance to be a practicing astronomer came when she married Gottfried Kirch, Prussia's foremost astronomer, and became his assistant.

Winkelmann made some original contributions to astronomy, including the discovery of a comet. Her husband described the discovery:

“Early in the morning (about 2:00 A.M.) the sky was clear and starry. Some nights before, I had observed a variable star, and my wife (as I slept) wanted to find and see it for herself. In so doing, she found a comet in the sky. At which time she woke me, and I found that it was indeed a comet. . . . I was surprised that I had not seen it the night before.”

When her husband died, Winkelmann applied for a position as assistant astronomer at the Berlin Academy. She was highly qualified, but as a woman—

with no university degree—she was denied the post. Members of the Berlin Academy feared that they would set a bad example by hiring a woman. “Mouths would gape,” they said.

Winkelmann's problems with the Berlin Academy reflect the obstacles women faced in being accepted as scientists. Such work was considered to be chiefly for males. In the view of most people in the seventeenth century, a life devoted to any kind of scholarship was at odds with the domestic duties women were expected to perform.

Reading Check Summarizing What did Margaret Cavendish and Maria Winkelmann contribute to the Scientific Revolution?

Descartes and Reason

The new conception of the universe brought about by the Scientific Revolution strongly influenced the Western view of humankind. Nowhere is this more evident than in the work of the seventeenth-century French philosopher **René Descartes** (day•KAHRT). Descartes began by thinking and writing about the doubt and uncertainty that seemed to be everywhere in the confusion of the seventeenth century. He ended with a philosophy that dominated Western thought until the twentieth century.

The starting point for Descartes's new system was doubt. In his most famous work, *Discourse on Method*, written in 1637, Descartes decided to set aside all that he had learned and to begin again. One fact seemed to him to be beyond doubt—his own existence:

“But I immediately became aware that while I was thus disposed to think that all was false, it was absolutely necessary that I who thus thought should be something; and noting that this truth I think, therefore I am, was so steadfast and so assured . . . I concluded that I might without scruple accept it as being the first principle of the philosophy I was seeking.”

Descartes emphasized the importance of his own mind and asserted that he would accept only those things that his reason said were true.

From his first principle—“I think, therefore I am”—Descartes used his reason to arrive at a second principle. He argued that because “the mind cannot be doubted but the body and material world can, the two must be radically different.”

From this idea came the principle of the separation of mind and matter (and of mind and body).



Picturing History

René Descartes is pictured here with Queen Christina of Sweden, who invited Descartes to her court. **What philosophical principles did Descartes establish in his famous work *Discourse on Method*?**

Descartes's idea that mind and matter were completely separate allowed scientists to view matter as dead or inert—as something that was totally detached from themselves and that could be investigated independently by reason.

Descartes has rightly been called the father of modern **rationalism**. This system of thought is based on the belief that reason is the chief source of knowledge.

Reading Check Explaining What is the significance of Descartes's principle of the separation of mind and matter?

The Scientific Method

During the Scientific Revolution, people became concerned about how they could best understand the physical world. The result was the creation of a **scientific method**—a systematic procedure for collecting and analyzing evidence. The scientific method was crucial to the evolution of science in the modern world.

The person who developed the scientific method was actually not a scientist. **Francis Bacon**, an English philosopher with few scientific credentials, believed that instead of relying on the ideas of ancient authorities, scientists should use **inductive reasoning** to learn about nature. In other words,

scientists should proceed from the particular to the general. Systematic observations and carefully organized experiments to test hypotheses (theories) would lead to correct general principles.

Bacon was clear about what he believed his scientific method could accomplish. He stated that “the true and lawful goal of the sciences is none other than this: that human life be endowed with new discoveries and power.” He was much more concerned with practical matters than pure science.

Bacon wanted science to benefit industry, agriculture, and trade. He said, “I am laboring to lay the foundation, not of any sect or doctrine, but of human utility and power.”

How would this “human power” be used? Bacon believed it could be used to “conquer nature in action.” The control and domination of nature became an important concern of science and the technology that accompanied it.

Reading Check Summarizing What are the characteristics of the scientific method?



After years of study and experimentation, Edward Jenner developed the first vaccine for smallpox in 1796.

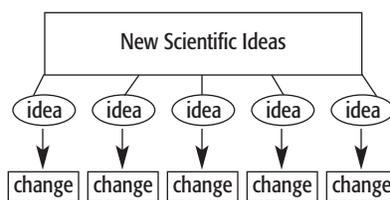
SECTION 1 ASSESSMENT

Checking for Understanding

- Define** geocentric, Ptolemaic system, heliocentric, universal law of gravitation, rationalism, scientific method, inductive reasoning.
- Identify** Ptolemy, Nicholas Copernicus, Galileo Galilei, Isaac Newton, Cambridge University, Robert Boyle, Margaret Cavendish, Maria Winkelmann, René Descartes, Francis Bacon.
- Locate** Poland, Padua.
- Contrast** the Ptolemaic, or geocentric, system of the universe to the heliocentric system developed by Copernicus.
- List** the pioneers of modern chemistry who lived during the seventeenth and eighteenth centuries.

Critical Thinking

- Analyze** Why did the Catholic Church condemn the work of Galileo during the seventeenth century?
- Identifying Information** Use a diagram to identify examples of new ideas in the form of mathematical discoveries, scientific discoveries, or technological innovations that appeared during the 1500s and 1600s. Then show in the diagram the changes produced by these discoveries or innovations.



Analyzing Visuals

- Examine** the painting of Galileo on page 296. Why do you think that Galileo is showing his drawings to the clergyman standing beside him? Why might the other man be looking through Galileo's telescope? Based on what you have read in this section, do you think these men will support Galileo's views? Why or why not?

Writing About History

- Expository Writing** Do some research and then write an essay about either Copernicus, Galileo, or Newton. For the scientist you choose, discuss that person's individual contributions to the Scientific Revolution and how his ideas have influenced the development of modern society.



The Enlightenment

Guide to Reading

Main Ideas

- Eighteenth-century intellectuals used the ideas of the Scientific Revolution to reexamine all aspects of life.
- People gathered in salons to discuss the ideas of the philosophes.

Key Terms

philosophe, separation of powers, deism, laissez-faire, social contract, salon

People to Identify

John Locke, Montesquieu, Voltaire, Denis Diderot, Adam Smith, Jean-Jacques Rousseau, Mary Wollstonecraft, John Wesley

Places to Locate

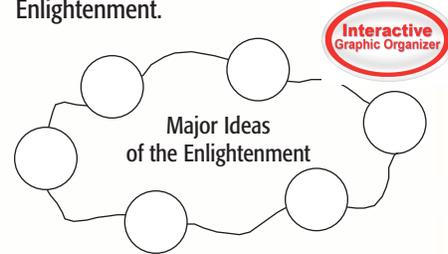
Paris, London

Preview Questions

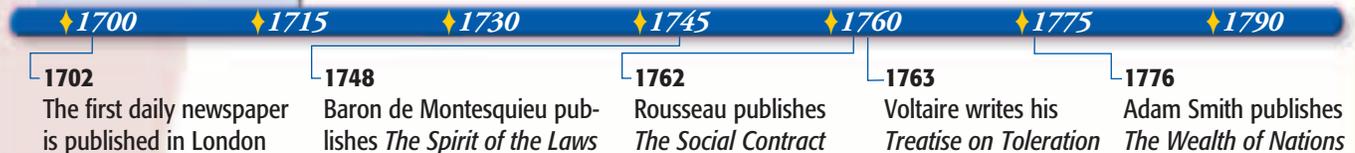
1. What was the Enlightenment?
2. What role did religion play during the Enlightenment?

Reading Strategy

Summarizing Information Use a diagram like the one below to list some of the main ideas introduced during the Enlightenment.



Preview of Events



Voices from the Past



Voltaire

The French intellectual Voltaire attacked religious intolerance in *The Ignorant Philosopher*:

“I say, there is scarce any city or borough in Europe, where blood has not been spilled for religious quarrels; I say, that the human species has been perceptibly diminished, because women and girls were massacred as well as men. I say that Europe would have a third larger population if there had been no theological disputes. In fine, I say, that so far from forgetting these abominable times, we should frequently take a view of them, to inspire an eternal horror for them. . . . It is for our age to make amends by toleration, for this long collection of crimes, which has taken place through the lack of toleration during sixteen barbarous centuries.”

—From *Absolutism to Revolution 1648–1848*, Herbert H. Rowen, ed., 1963

Religious toleration was one of the major themes of the Enlightenment.

Path to the Enlightenment

The Enlightenment was an eighteenth-century philosophical movement of intellectuals who were greatly impressed with the achievements of the Scientific Revolution. One of the favorite words of these intellectuals was *reason*. By this, they meant the application of the scientific method to an understanding of all life. They hoped that by using the scientific method, they could make progress toward a better society than the one they had inherited. *Reason, natural law, hope, progress*—these were common words to the thinkers of the Enlightenment.

The Enlightenment was especially influenced by the ideas of two seventeenth-century Englishmen, Isaac Newton and **John Locke**. To Newton, the physical

world and everything in it was like a giant machine (the Newtonian world-machine). If Newton could discover the natural laws that governed the physical world, then by using his methods, the intellectuals of the Enlightenment thought they could discover the natural laws that governed human society.

John Locke's theory of knowledge also greatly affected eighteenth-century intellectuals. In his *Essay Concerning Human Understanding*, Locke argued that every person was born with a *tabula rasa*, or blank mind:

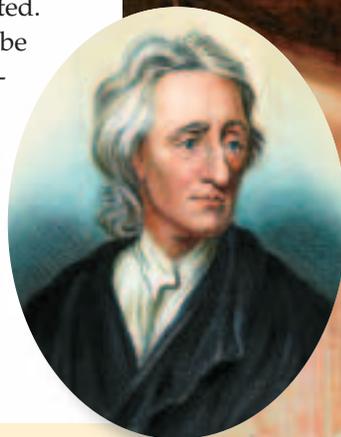
“Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas. How comes it to be furnished? Whence has it all the materials of reason and knowledge? To this I answer, in one word, from experience. . . . Our observation, employed either about external sensible objects or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understanding with all the materials of thinking.”

Locke's ideas suggested that people were molded by the experiences that came through their senses from the surrounding world. If environments were changed and people were exposed to the right influences, then people could be changed and a new society created.

How should the environment be changed? Using Newton's methods, people believed that they could discover the natural laws that all institutions should follow to produce the ideal society.

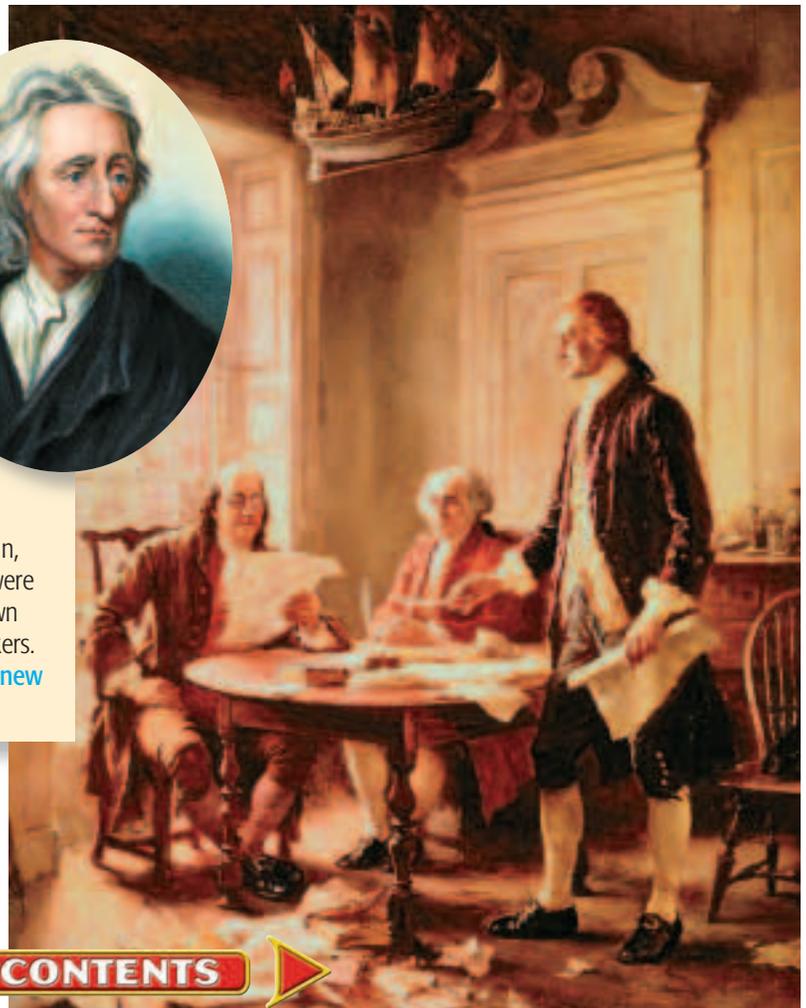
✓ Reading Check Explaining

What was Newton's main contribution to Enlightenment thought?



Picturing History

Leaders of the American Revolution, such as Franklin, Adams, and Jefferson (pictured here left to right), were greatly influenced by the ideas of John Locke (shown above) and eighteenth-century Enlightenment thinkers. **By what means or methods did Locke believe a new society could be created?**



Philosophes and Their Ideas

The intellectuals of the Enlightenment were known by the French name **philosophe** (FEE•luh•ZAWF), meaning “philosopher.” Not all philosophes were French, however, and few were philosophers in the strict sense of the term. They were writers, professors, journalists, economists, and above all, social reformers. They came chiefly from the nobility and the middle class.

Most of the leaders of the Enlightenment were French, but even the French would have acknowledged that the English had provided the philosophical inspiration for the Enlightenment. It was definitely these French philosophes, however, who affected intellectuals elsewhere and created a movement that influenced the entire Western world. The Enlightenment was a truly international movement.

To the philosophes, the role of philosophy was to change the world. One writer said that the philosophe is one who “applies himself to the study of society with the purpose of making his kind better and happier.” One conducts this study by using reason, or an appeal to facts. A spirit of rational criticism was to be applied to everything, including religion and politics.



History through Art

Madame de Geoffrin's Salon by Anicet Lemonnier shows the first reading of one of Voltaire's works. Describe the different reactions to Voltaire's ideas that you might hear from a typical Parisian eighteenth-century salon audience.

The philosophes often disagreed. The Enlightenment spanned almost a century, and it evolved over time. Each succeeding generation became more radical as it built on the contributions of the previous one. A few people, however, dominated the landscape. We begin our survey of the ideas of the philosophes by looking at the three French giants—Montesquieu (MAHN•tuhs•KYOO), Voltaire, and Diderot (dee•DROH).

Montesquieu Charles-Louis de Secondat, the Baron de **Montesquieu**, came from the French nobility. His most famous work, *The Spirit of the Laws*, was published in 1748. In this study of governments, Montesquieu tried to use the scientific method to find the natural laws that govern the social and political relationships of human beings.

Montesquieu identified three basic kinds of governments: (1) republics, suitable for small states; (2) despotism, appropriate for large states; and (3) monarchies, ideal for moderate-size states. He used England as an example of a monarchy.

Montesquieu believed that England's government had three branches: the executive (the monarch), the legislative (parliament), and the judicial (the courts

of law). The government functioned through a **separation of powers**. In this separation, the executive, legislative, and judicial powers of the government limit and control each other in a system of checks and balances. By preventing any one person or group from gaining too much power, this system provides the greatest freedom and security for the state.

Montesquieu's analysis of the system of checks and balances through separation of powers was his most lasting contribution to political thought. The translation of Montesquieu's work into English made it available to American philosophes, who took his principles and worked them into the United States Constitution.

Voltaire The greatest figure of the Enlightenment was François-Marie Arouet, known simply as **Voltaire**. A Parisian, Voltaire came from a prosperous middle-class family. He wrote an almost endless stream of pamphlets, novels, plays, letters, essays, and histories, which brought him both fame and wealth.

Voltaire was especially well known for his criticism of Christianity and his strong belief in religious toleration. He fought against religious intolerance in France. In 1763, he penned his *Treatise on Toleration*, in which he reminded governments that "all men are brothers under God."

Throughout his life, Voltaire championed **deism**, an eighteenth-century religious philosophy based on reason and natural law. Deism built on the idea of the Newtonian world-machine. In the Deists' view, a



mechanic (God) had created the universe. To Voltaire and most other philosophes, the universe was like a clock. God, the clockmaker, had created it, set it in motion, and allowed it to run without his interference, according to its own natural laws.

Diderot Denis Diderot went to the University of Paris to fulfill his father’s hopes that he would be a lawyer or pursue a career in the Church. He did neither. Instead, he became a freelance writer so that he could study and read in many subjects and languages. For the rest of his life, Diderot remained dedicated to new ideas.

Diderot’s most famous contribution to the Enlightenment was the *Encyclopedia, or Classified Dictionary of the Sciences, Arts, and Trades*, a 28-volume collection of knowledge that he edited. Published between 1751 and 1772, the purpose of the *Encyclopedia*, according to Diderot, was to “change the general way of thinking.”

The *Encyclopedia* became a major weapon in the philosophes’ crusade against the old French society. Many of its articles attacked religious superstition and supported religious toleration. Others called for social, legal, and political improvements that would lead to a society that was more tolerant and more humane. The *Encyclopedia* was sold to doctors, clergymen, teachers, and lawyers, thus spreading the ideas of the Enlightenment.

 **Reading Check** **Comparing** What were the major contributions of Montesquieu, Voltaire, and Diderot to the Enlightenment?



History through Art

Port of Marseille by Claude-Joseph Vernet, 1754 Vernet was commissioned by the French king to paint the military and commercial seaports of France. **What characteristic activities of a commercial port are included here? What information about the past could historians learn from this painting?**

Toward a New Social Science

The philosophes, as we have seen, believed that Newton’s methods could be used to discover the natural laws underlying all areas of human life. This led to what we would call the social sciences—areas such as economics and political science.

Economics The Physiocrats and Scottish philosopher Adam Smith have been viewed as the founders of the modern social science of economics. The Physiocrats, a French group, were interested in identifying the natural economic laws that governed human society. They maintained that if individuals were free to pursue their own economic self-interest, all society would ultimately benefit.

The state, then, should not interrupt the free play of natural economic forces by imposing government regulations on the economy. The state should leave the economy alone. This doctrine became known by its French name, **laissez-faire** (LEH•SAY FEHR), meaning “to let (people) do (what they want).”

The best statement of laissez-faire was made in 1776 by **Adam Smith** in his famous work *The Wealth of Nations*. Like the Physiocrats, Smith believed that the state should not interfere in economic matters. Indeed, Smith gave to government only three basic roles: protecting society from invasion (the army); defending citizens from injustice (the police); and keeping up certain public works, such as roads and canals, that private individuals could not afford.



Beccaria and Justice By the eighteenth century, most European states had developed a system of courts to deal with the punishment of crime. Punishments were often cruel. The primary reason for extreme punishments was the need to deter crime in an age when a state's police force was too weak to ensure the capture of criminals.

One philosophe who proposed a new approach to justice was Cesare Beccaria. In his essay *On Crimes and Punishments*, written in 1764, Beccaria argued that punishments should not be exercises in brutality. He also opposed capital punishment. He did not believe that it stopped others from committing crimes. Moreover, it set an example of barbarism: "Is it not absurd, that the laws, which punish murder, should, in order to prevent murder, publicly commit murder themselves?"

 **Reading Check Explaining** What is the concept of *laissez-faire*?

The Later Enlightenment

By the late 1760s, a new generation of philosophes had come to maturity. Most famous was **Jean-Jacques Rousseau** (ru•SOH). The young Rousseau wandered through France and Italy holding various jobs. Eventually he made his way to Paris, where he was

introduced into the circle of the philosophes. He did not like city life, however, and often withdrew into long periods of solitude.

In his *Discourse on the Origins of the Inequality of Mankind*, Rousseau argued that people had adopted laws and government in order to preserve their private property. In the process, they had become enslaved by government. What, then, should people do to regain their freedom?

In his famous work *The Social Contract*, published in 1762, Rousseau presented his concept of the **social contract**. Through a society agrees to be governed by its general will. Individuals who wish instead to follow their own self-interests must be forced to abide by the general will. "This means nothing less than that [they] will be forced to be free," said Rousseau. Thus, liberty is achieved by being forced to follow what is best for "the general will," because the general will represents what is best for the entire community.

Another important work by Rousseau is *Emile*. Written in the form of a novel, the work is a general discussion "on the education of the natural man." Rousseau argues that education should foster, and not restrict, children's natural instincts.

Unlike many Enlightenment thinkers, Rousseau believed that emotions, as well as reason, were important to human development. He sought a balance between heart and mind, between emotions and reason.

Rousseau did not necessarily practice what he preached. His own children were sent to orphanages, where many children died at a young age. Rousseau also viewed women as being "naturally" different from men: "To fulfill her functions, . . . [a woman] needs a soft life. . . . How much care and tenderness does she need to hold her family together." To Rousseau, women should be educated for their roles as wives and mothers by learning obedience and the nurturing skills that would enable them to provide loving care for their husbands and children. Not everyone in the eighteenth century agreed with Rousseau, however.

 **Reading Check Summarizing** What were Rousseau's basic theories as presented in *The Social Contract* and *Emile*?



Jean-Jacques Rousseau

People In History

Mary Wollstonecraft

1759–1797—English writer

Mary Wollstonecraft is considered by many to be the founder of the European and American movements for women's rights. Wollstonecraft was largely self-educated. For a while, she earned a living as a governess but soon moved to a writing career and worked for a magazine publisher.

All along, Wollstonecraft continued to develop her ideas on education and women's rights. She wrote in 1792: "Make women rational creatures, and free citizens, and they will quickly become good wives; that is—if men do not neglect the duties of husbands and fathers!"

Mary Wollstonecraft married the philosopher William Godwin in 1797. She died shortly after the birth of their daughter—Mary Wollstonecraft Godwin Shelley—who wrote the famous novel *Frankenstein*.





CONNECTIONS Past To Present

Magazines, Then and Now

Bookstores and newsstands carry thousands of magazines that appeal to an enormous variety of interests. We can find magazines on fishing, car racing, fashion, politics, television, furniture making, tourism, wrestling, and a host of other subjects.

The first magazines in Europe were a product of a growing reading public in the seventeenth and eighteenth centuries, especially among the middle classes. The first magazine was published in Germany in 1633. It contained poems and articles on religion, the chief interest of its editor, Johann Rist.

Many early magazines had serious goals. Joseph Addison and Richard Steele's *Spectator*, begun in 1711, aimed to "bring Philosophy out of the closets and libraries, schools and colleges, to dwell in clubs and assemblies, at tea-tables and coffeehouses." It did not last long.

Some publishers began to broaden the appeal of their magazines. One goal was to attract women readers. *Ladies' Mercury*, published in Britain, provided advice on marriage and child rearing as well as sewing patterns and gossip. Its success brought forth a host of similar magazines.

Many early magazines failed because customers did not always pay for them on time. Isaiah Thomas, editor of the *Worcester Magazine*, became so desperate that he wrote: "The editor requests all those who are indebted to him for magazines, to make payment—butter will be received in small sums, if brought within a few days."



Argentine magazine stand

Comparing Past and Present

Pretend you are an eighteenth-century magazine editor assigned to write an article for the next edition. Choose a person or an event discussed in Chapter 10 to be the subject of your article (use outside resources if necessary). You could also select one Enlightenment idea and present it to your readers.

Rights of Women

For centuries, male intellectuals had argued that the nature of women made them inferior to men and made male domination of women necessary. By the eighteenth century, however, female thinkers began to express their ideas about improving the condition of women. The strongest statement for the rights of women was advanced by the English writer **Mary Wollstonecraft**. Many see her as the founder of the modern European and American movement for women's rights.

In *A Vindication of the Rights of Women*, Wollstonecraft identified two problems with the views of many Enlightenment thinkers. She noted that the same people who argued that women must obey men also said that government based on the arbitrary power of monarchs over their subjects was wrong.

Wollstonecraft pointed out that the power of men over women was equally wrong.

Wollstonecraft further argued that the Enlightenment was based on an ideal of reason in all human beings. Because women have reason, then they are entitled to the same rights as men. Women, Wollstonecraft declared, should have equal rights in education, as well as in economic and political life.

✓ Reading Check Evaluating How did Mary Wollstonecraft use the Enlightenment ideal of reason to advocate rights for women?

Social World of the Enlightenment

The Enlightenment was not a movement belonging exclusively to the nobles and aristocrats. For example, philosophes such as Diderot and Rousseau came from





Geography Skills

The intellectuals of the Enlightenment created a movement that influenced the entire Western world.

- 1. Interpreting Maps** Examine the keys of the two maps. What kind of information does each map contain?
- 2. Applying Geography Skills** Pose and answer two questions about the geographic distributions shown on one of the maps on this page. Create a thematic chart that represents the same information.

the lower middle class. The movement did, however, have its greatest appeal with the aristocrats and upper classes in the larger cities. The common people, especially the peasants, were mostly unaware and little affected by the Enlightenment.

The Growth of Reading Of great importance to the Enlightenment was the spread of its ideas to the literate elite of European society. Especially noticeable in the eighteenth century was the growth of both publishing and the reading public. The number of titles issued each year by French publishers rose from 300 in 1750 to about 1,600 in the 1780s. Books had previously been aimed at small groups of the educated elite. Now, many books were directed at the

new reading public of the middle classes, which included women and urban artisans.

An important aspect of the growth of publishing and reading in the eighteenth century was the development of magazines for the general public. In Great Britain, an important center for the new magazines, 25 periodicals were published in 1700, 103 in 1760, and 158 in 1780.

Along with magazines came daily newspapers. The first was printed in **London** in 1702. Newspapers were relatively cheap and were even provided free in many coffeehouses.

The Salon Enlightenment ideas were also spread through the **salon**. Salons were the elegant drawing rooms of the wealthy upper class's great urban houses. Invited guests gathered in these salons and took part in conversations that were often centered on the new ideas of the philosophes. The salons brought writers and artists together with aristocrats, government officials, and wealthy middle-class people.

The women who hosted the salons found themselves in a position to sway political opinion and influence literary and artistic taste. At her fashionable home in Paris, for example, Marie-Thérèse de



Geoffrin, wife of a wealthy merchant, held gatherings that became the talk of France and of all Europe. Distinguished foreigners, including a future king of Sweden and a future king of Poland, competed to receive invitations. These gatherings helped spread the ideas of the Enlightenment.

✓ Reading Check Examining What was the importance of the salons?

Religion in the Enlightenment

Although many philosophes attacked the Christian churches, most Europeans in the eighteenth century were still Christians. Many people also sought a deeper personal devotion to God.

The Catholic parish church remained an important center of life for the entire community. How many people went to church regularly cannot be known. It has been established that 90 to 95 percent of Catholic populations did go to mass on Easter Sunday.

After the initial religious fervor that created Protestantism in the sixteenth century, Protestant churches settled into well-established patterns controlled by state authorities. Many Protestant churches were lacking in religious enthusiasm. The desire of ordinary Protestants for greater depths of religious experience led to new religious movements.

In England, the most famous new religious movement—Methodism—was the work of **John Wesley**, an Anglican minister. Wesley had a mystical

experience in which “the gift of God’s grace” assured him of salvation. This experience led him to become a missionary to the English people to bring them the “glad tidings” of salvation.

Wesley preached to the masses in open fields. He appealed especially to the lower classes. He tried, he said, “to lower religion to the level of the lowest people’s capacities.”



John Wesley

Wesley’s powerful sermons often caused people to have conversion experiences. Many of these converts joined Methodist societies in which they helped each other do good works. In this way Wesley’s Methodism gave the lower and middle classes in English society a sense of purpose and community. The Methodists stressed the importance of hard work and encouraged behaviors that led to spiritual contentment, which took the place of political equality.

After Wesley’s death, Methodism became a separate Protestant group. Methodism proved that the need for spiritual experience had not been eliminated by the eighteenth-century search for reason.

✓ Reading Check Describing What are some of the central ideas of Methodism?

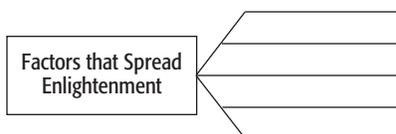
SECTION 2 ASSESSMENT

Checking for Understanding

- 1. Define** philosophe, separation of powers, deism, laissez-faire, social contract, salon.
- 2. Identify** John Locke, Montesquieu, Voltaire, Denis Diderot, Adam Smith, Jean-Jacques Rousseau, Mary Wollstonecraft, John Wesley.
- 3. Locate** Paris, London.
- 4. Explain** the influence of Isaac Newton and John Locke on Enlightenment thinkers.
- 5. List** the primary occupations of the philosophes.

Critical Thinking

- 6. Discuss** What did Rousseau mean when he stated that if any individual wants to pursue his own self-interests at the expense of the common good, “He will be forced to be free”? Do you agree or disagree with Rousseau’s ideas? Why?
- 7. Summarizing Information** Use a diagram like the one below to identify factors that helped spread Enlightenment ideas throughout Europe.



Analyzing Visuals

- 8. Describe** the scene in the painting shown on page 303. What activities depicted in the painting are related to economics? What elements of the picture illustrate the economic principle of laissez-faire?

Writing About History

- 9. Persuasive Writing** Mary Wollstonecraft argued that women are entitled to the same rights as men. Do you believe this premise to be true? Do you believe women are accorded equal rights today? Present your argument in an essay supported with evidence and logic.



SECTION 3

The Impact of the Enlightenment

Guide to Reading

Main Ideas

- Enlightenment beliefs were reflected in the art, music, and literature of the time.
- Enlightenment thought impacted the politics of Europe in the eighteenth century.

Key Terms

rococo, enlightened absolutism

People to Identify

Bach, Handel, Haydn, Mozart, Frederick the Great, Maria Theresa, Catherine the Great

Places to Locate

Prussia, Austria, Russia, Silesia

Preview Questions

1. What innovations in the arts occurred during the eighteenth century?
2. What were the causes and results of the Seven Years' War?

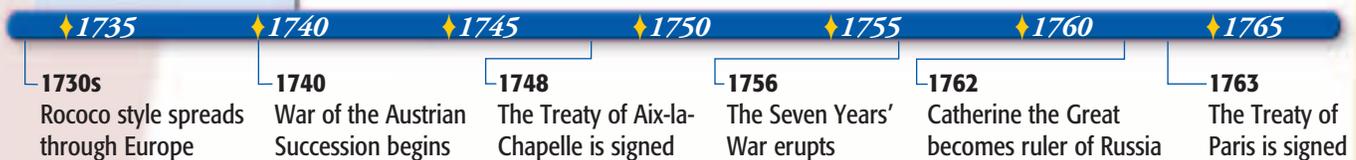
Reading Strategy

Describing Use a chart like the one below to list the conflicts of the Seven Years' War. Include the countries involved and where the conflicts were fought.

Conflicts of the Seven Years' War



Preview of Events



Prussian soldiers

Voices from the Past

The eighteenth-century Prussian king Frederick II once said:

“[The services a monarch must provide for his people] consisted in the maintenance of the laws; a strict execution of justice; . . . and defending the state against its enemies. It is the duty of this magistrate to pay attention to agriculture; it should be his care that provisions for the nation should be in abundance, and that commerce and industry should be encouraged. He is a perpetual sentinel, who must watch the acts and the conduct of the enemies of the state. . . . If he be the first general, the first minister of the realm, it is not that he should remain the shadow of authority, but that he should fulfill the duties of such titles. He is only the first servant of the state.”

— *The Western Tradition*, Eugen Weber, 1972

These comments reveal the impact of the ideas of the Enlightenment on the rulers of the period.

The Arts

The ideas of the Enlightenment also had an impact on the world of culture. Eighteenth-century Europe witnessed both traditional practices and important changes in art, music, and literature.

Architecture and Art The palace of Louis XIV at Versailles, in France, had made an enormous impact on Europe. The Austrian emperor, the Swedish king, and



other rulers also built grandiose residences. These palaces were modeled more on the Italian baroque style of the 1500s and 1600s than they were on the seventeenth-century French classical style of Versailles. Thus, a unique architectural style was created.

One of the greatest architects of the eighteenth century was Balthasar Neumann. Neumann's two masterpieces are the Church of the Fourteen Saints in southern Germany and the Residence, the palace of the prince-bishop of Würzburg. In these buildings, secular and spiritual become one as lavish and fanciful ornament, light, bright colors, and elaborate detail greet the visitor. Inside the church, a pilgrim in search of holiness is struck by the incredible richness of detail.

The baroque and neoclassical styles that had dominated seventeenth-century art continued into the eighteenth century. By the 1730s, however, a new artistic style, known as **rococo**, had spread all over Europe.

Unlike the baroque style, which stressed grandeur and power, rococo emphasized grace, charm, and gentle action. Rococo made use of delicate designs colored in gold with graceful curves. The rococo style was highly secular. Its lightness and charm spoke of the pursuit of pleasure, happiness, and love.

Rococo's appeal is evident in the work of Antoine Watteau. In his paintings, gentlemen and ladies in elegant dress reveal a world of upper-class pleasure and joy. Underneath that exterior, however, is an element of sadness as the artist suggests the fragility and passing nature of pleasure, love, and life.

Another aspect of rococo was a sense of enchantment and enthusiasm, especially evident in the work of Giovanni Battista Tiepolo. Many of Tiepolo's paintings came to adorn the walls and ceilings of churches and palaces. His masterpiece is the ceiling of the Bishop's Palace at Würzburg, a massive scene representing the four continents.



History through Art

Danse dans un Pavillon by Antoine Watteau

Watteau began his career as an interior decorator and rose to become the court painter to King Louis XV. **What details in this painting by Watteau are examples of the rococo style of painting?**

Music The eighteenth century was one of the greatest periods in the history of European music. In the first half of the century, two composers—Johann Sebastian Bach and George Frederick Handel—stand out as musical geniuses.

Bach, a renowned organist as well as a composer, spent his entire life in Germany. While he was music director at the Church of Saint Thomas in Leipzig, he composed his *Mass in B Minor* and other works that gave him the reputation of being one of the greatest composers of all time.

Handel was a German who spent much of his career in England. He is probably best known for his religious music. Handel's *Messiah* has been called a rare work that appeals immediately to everyone and yet is a masterpiece of the highest order.

HISTORY Online



Web Activity Visit the *Glencoe World History—Modern Times* Web site at wh.mt.glencoe.com and click on **Chapter 10—Student Web Activity** to learn more about the rococo style.



Bach and Handel perfected the baroque musical style. Two geniuses of the second half of the eighteenth century—Franz Joseph Haydn and Wolfgang Amadeus Mozart—were innovators who wrote music called classical rather than baroque.

Haydn spent most of his adult life as musical director for wealthy Hungarian princes. Visits to England introduced him to a world where musicians wrote for public concerts rather than princely patrons. This “liberty,” as he called it, led him to write two great works, *The Creation* and *The Seasons*.

Mozart was truly a child prodigy. His failure to get a regular patron to support him financially made his life miserable. Nevertheless, he wrote music passionately. His *The Marriage of Figaro*, *The Magic Flute*, and *Don Giovanni* are three of the world’s greatest operas. Haydn remarked to Mozart’s father, “Your son is the greatest composer known to me.”

Literature The eighteenth century was also important in the development of the European novel. The novel was especially attractive to a growing number of middle-class readers.

The Englishman Henry Fielding wrote novels about people without morals who survive by their wits. Fielding’s best-known work is *The History of Tom Jones, a Foundling*, which describes the adventures of a young scoundrel. In a number of hilarious episodes, Fielding presents scenes of English life

from the slums of London to the country houses of the English aristocracy. His characters reflect real types in eighteenth-century English society.

Reading Check Identifying What are the characteristics of the rococo style?

Enlightenment and Enlightened Absolutism

Enlightenment thought had an effect on the political life of European states in the eighteenth century. The philosophes believed in natural rights for all people. These rights included equality before the law; freedom of religious worship; freedom of speech; freedom of the press; and the right to assemble, hold property, and pursue happiness. As the American Declaration of Independence expressed, “We hold these truths to be self-evident, that all men are created equal; that they are endowed by their creator with certain unalienable rights; that among these are life, liberty and the pursuit of happiness.”

How were these natural rights to be established and preserved? Most philosophes believed that people needed to be governed by enlightened rulers. What are enlightened rulers? They allow religious toleration, freedom of speech and of the press, and the rights of private property. They nurture the arts, sciences, and education. Above all, enlightened



Picturing History

In this painting, c. 1763, a seven-year-old Mozart is shown with his father and sister. Above is the original manuscript of Mozart’s first attempt at writing choral music. **What is a child prodigy? Do you know anyone who could be described as a child prodigy?**

Frederick II (Frederick the Great)

1712–1786 — Prussian king



Frederick II, known as Frederick the Great, is credited with making Prussia a great European power. As a young man, Frederick was quite different from his strict father, Frederick William I. Frederick, who had a high regard for French culture, poetry, and flute playing, resisted his father's wishes that he immerse himself in government and military affairs. His father's frustration expressed itself in anger: "As I entered the room he seized me by the hair and threw me to the ground."

Frederick once tried to escape his father by fleeing to England with his friend Lieutenant Hans von Katte. Frederick William had both arrested and made his son watch the beheading of his good friend. One year later, Frederick asked for forgiveness and began to do what his father wanted.

rulers obey the laws and enforce them fairly for all subjects. Only strong, enlightened monarchs could reform society.

Many historians once assumed that a new type of monarchy emerged in the later eighteenth century, which they called **enlightened absolutism**. In the system of enlightened absolutism, rulers tried to govern by Enlightenment principles while maintaining their royal powers.

Did Europe's rulers, however, actually follow the advice of the philosophes and become enlightened? To answer this question, we can examine three states—**Prussia, Austria, and Russia**.

Prussia: Army and Bureaucracy Two able Prussian kings, Frederick William I and Frederick II, made Prussia a major European power in the eighteenth century. Frederick William I strove to maintain a highly efficient bureaucracy of civil service workers. The supreme values of the bureaucracy were obedience, honor, and, above all, service to the king. As Frederick William asserted: "One must serve the king with life and limb, ...and surrender all except salvation. The latter is reserved for God. But everything else must be mine."

Frederick William's other major concern was the army. By the end of his reign in 1740, he had doubled the army's size. Although Prussia was tenth in physical size and thirteenth in population in Europe, it had the fourth largest army after France, Russia, and Austria. The Prussian army, because of its size and its reputation as one of the best armies in Europe, was the most important institution in the state.

Members of the nobility, who owned large estates with many serfs, were the officers in the Prussian army. These officers, too, had a strong sense of service to the king or state. As Prussian nobles, they believed in duty, obedience, and sacrifice.

Frederick II, or **Frederick the Great**, was one of the best educated and most cultured monarchs in the eighteenth century. He was well versed in the ideas of the Enlightenment and even invited Voltaire to live at his court for several years. Frederick was a dedicated ruler. He, too, enlarged the Prussian army, and he kept a strict watch over the bureaucracy.

For a time, Frederick seemed quite willing to make enlightened reforms. He abolished the use of torture except in treason and murder cases. He also granted limited freedom of speech and press, as well as greater religious toleration. However, he kept Prussia's serfdom and rigid social structure intact and avoided any additional reforms.

The Austrian Empire The Austrian Empire had become one of the great European states by the beginning of the eighteenth century. It was difficult to rule, however, because it was a sprawling empire composed of many different nationalities, languages, religions, and cultures. Empress **Maria Theresa**, who inherited the throne in 1740, worked to centralize the Austrian Empire and strengthen the power of the state. She was not open to the philosophes' calls for reform, but she worked hard to alleviate the condition of the serfs.

Her son, Joseph II, believed in the need to sweep away anything standing in the path of reason: "I have made Philosophy the lawmaker of my empire."

Joseph's reform program was far reaching. He abolished serfdom, eliminated the death penalty, established the principle of equality of all before the law, and enacted religious reforms, including religious toleration. In his effort to change Austria, Joseph II issued thousands of decrees and laws.

Joseph's reform program, however, largely failed. He alienated the nobles by freeing the serfs. He alienated the Catholic Church with his religious reforms. Even the serfs were unhappy, because they were unable to make sense of the drastic changes in Joseph's policies. Joseph realized his failure when he



Picturing History

Pictured from left to right are Catherine the Great, a carriage used by Catherine, and Joseph II. **How might the carriage symbolize the differences between Catherine's and Joseph's attempts at reform?**

wrote his own epitaph for his gravestone: "Here lies Joseph II who was unfortunate in everything that he undertook." His successors undid almost all of Joseph II's reforms.

Russia under Catherine the Great In Russia, Peter the Great was followed by six weak successors who were put in power and deposed by the palace guard. After the last of these six successors, Peter III, was murdered by a group of nobles, his German wife emerged as ruler of all the Russians.

Catherine II, or **Catherine the Great**, ruled Russia from 1762 to 1796. She was an intelligent woman who was familiar with the works of the philosophes and seemed to favor enlightened reforms. She invited the French philosophe Denis Diderot to Russia and, when he arrived, urged him to speak frankly, "as man to man." He did so, outlining an ambitious program of political and financial reform.

Catherine, however, was skeptical about what she heard. Diderot's impractical theories, she said, "would have turned everything in my kingdom upside down." She did consider the idea of a new law code that would recognize the principle of the equality of all people in the eyes of the law. In the end, however, she did nothing, because she knew that her success depended on the support of the Russian nobility.

Catherine's policy of favoring the landed nobility led to worse conditions for the Russian peasants and eventually to rebellion. Led by an illiterate Cossack (a Russian warrior), Emelyan Pugachev, the rebellion spread across southern Russia, but soon collapsed. Catherine took stronger measures against the peasants. All rural reform was halted, and serfdom was expanded into newer parts of the empire.

Catherine proved to be a worthy successor to Peter the Great in her policies of territorial expansion. Russia spread southward to the Black Sea by defeating the Turks under Catherine's rule. To the west, Russia gained about 50 percent of Poland's territory.

Enlightened Absolutism? Of the rulers we have discussed, only Joseph II sought truly radical changes based on Enlightenment ideas. Both Frederick II and Catherine II liked to talk about enlightened reforms. They even attempted some, but their interest in strengthening the state and maintaining the existing system took priority.

In fact, all three rulers were chiefly guided by a concern for the power and well-being of their states. In the final analysis, heightened state power in Prussia, Austria, and Russia was not used to undertake enlightened reforms. Rather, it was used to collect more taxes and thus to create armies, to wage wars, and to gain more power.

The philosophes condemned war as a foolish waste of life and resources. Despite their words, the rivalry among states that led to costly struggles remained unchanged in eighteenth-century Europe. Europe's self-governing, individual states were chiefly guided by the self-interest of the rulers.

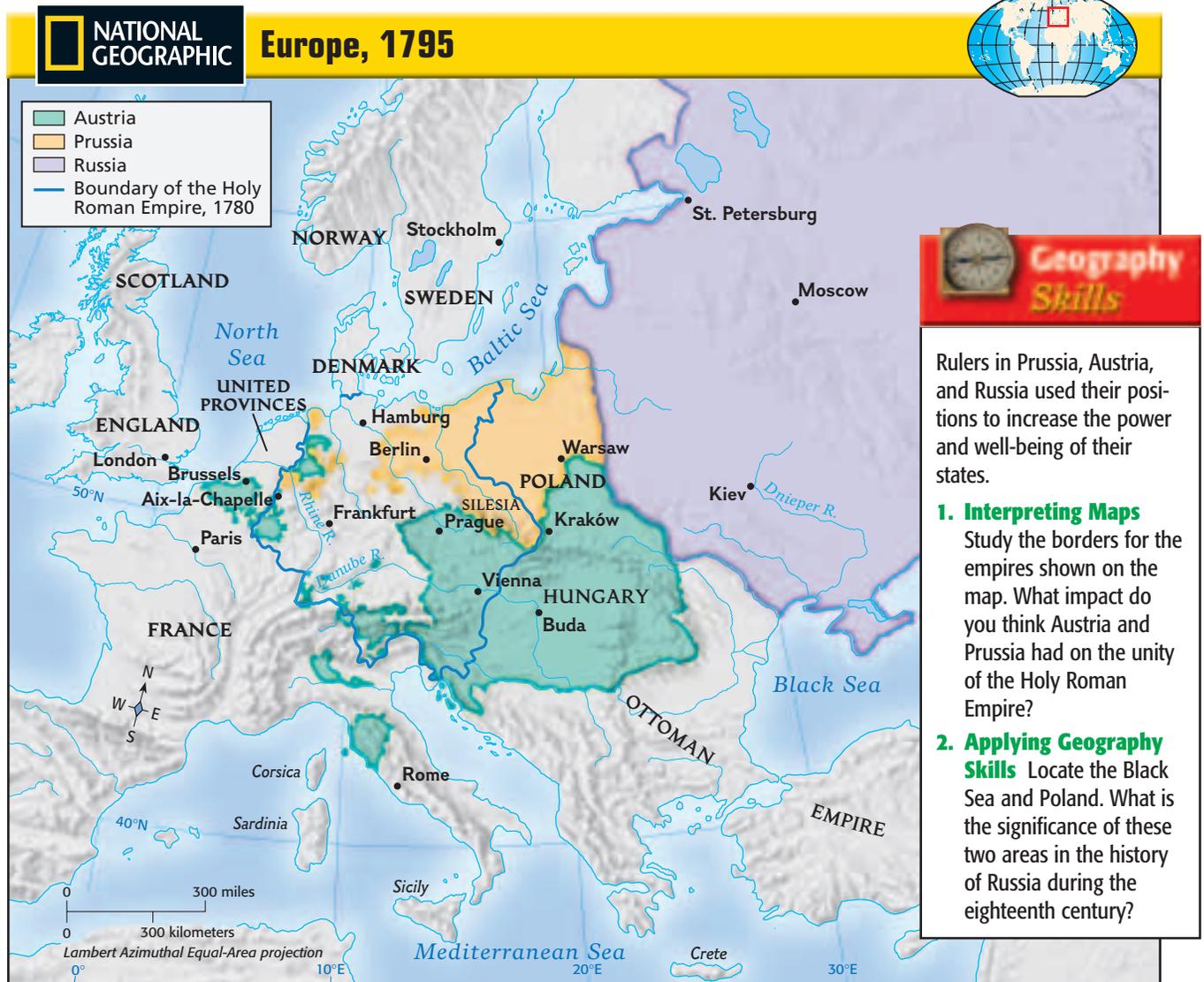
The eighteenth-century monarchs were concerned with the balance of power, the idea that states should have equal power in order to prevent any one from dominating the others. This desire for a balance of power, however, did not imply a desire for peace. Large armies created to defend a state's security were often used to conquer new lands as well. As Frederick the Great of Prussia remarked, "The fundamental rule of governments is the principle of extending their territories."

Reading Check Evaluating What effect did enlightened reforms have in Prussia, Austria, and Russia?

War of the Austrian Succession

In 1740, a major war broke out in connection with the succession to the Austrian throne. When the Austrian emperor Charles VI died, he was succeeded by his daughter, Maria Theresa. King Frederick II of Prussia took advantage of the succession of a woman to the throne of Austria by invading Austrian Silesia. France then entered the war against Austria, its traditional enemy. In turn, Maria Theresa made an alliance with Great Britain.

The War of the Austrian Succession (1740 to 1748) was fought in three areas of the world. In Europe, Prussia seized Silesia while France occupied the Austrian Netherlands. In the Far East, France took Madras (today called Chennai) in India from the British. In North America, the British captured the French fortress of Louisbourg at the entrance to the St. Lawrence River.



Geography Skills

Rulers in Prussia, Austria, and Russia used their positions to increase the power and well-being of their states.

- 1. Interpreting Maps** Study the borders for the empires shown on the map. What impact do you think Austria and Prussia had on the unity of the Holy Roman Empire?
- 2. Applying Geography Skills** Locate the Black Sea and Poland. What is the significance of these two areas in the history of Russia during the eighteenth century?





Maria Theresa



Geography Skills

The Seven Years' War was a global war.

1. **Interpreting Maps** Study the world map above and identify the areas where conflict erupted during the Seven Years' War. On what continent did the most extensive conflicts of the war take place?
2. **Interpreting Maps** Using the map of Europe on page 315, identify the two European alliances and which countries belonged to each.
3. **Applying Geography Skills** Over what geographical regions did the French and British fight in North America? Using the maps and your text, explain why the British were able to defeat the French.

After seven years of warfare, all parties were exhausted and agreed to the Treaty of Aix-la-Chapelle in 1748. This treaty guaranteed the return of all occupied territories except Silesia to their original owners. Prussia's refusal to return Silesia meant yet another war between Prussia and Austria.

Reading Check **Describing** Name the countries that fought together on each side of the War of the Austrian Succession.

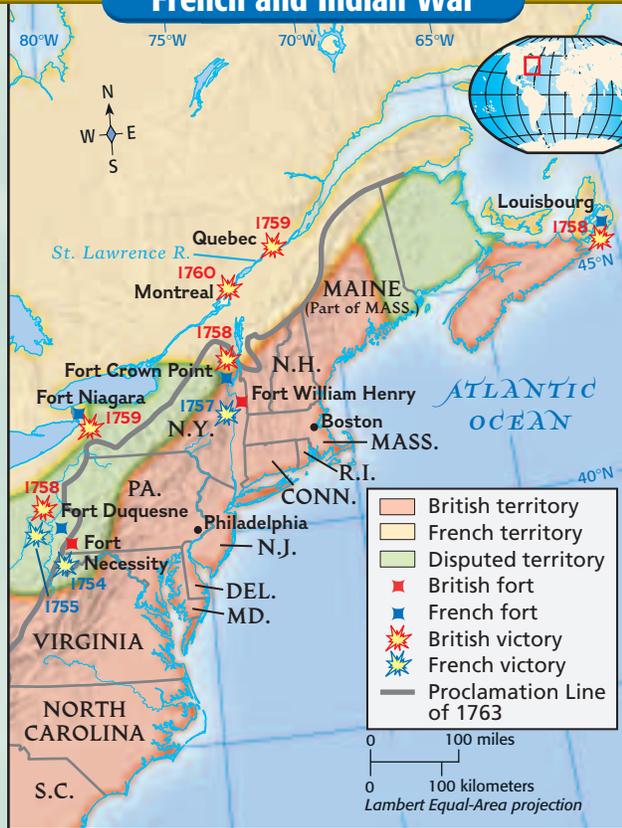
The Seven Years' War

Maria Theresa refused to accept the loss of Silesia. She rebuilt her army while working diplomatically to separate Prussia from its chief ally, France. In 1756,

Austria achieved what was soon labeled a diplomatic revolution.

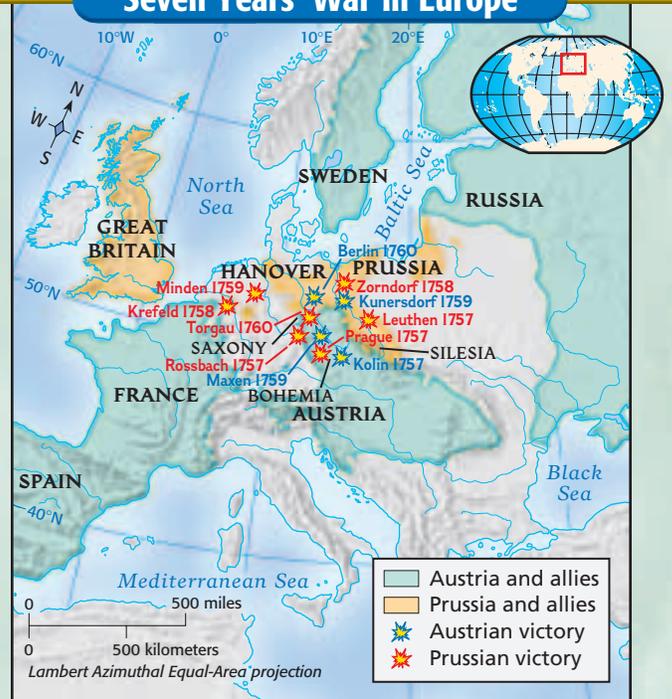
New Allies French-Austrian rivalry had been a fact of European diplomacy since the late sixteenth century. However, two new rivalries now replaced the old one: the rivalry of Britain and France over colonial empires and the rivalry of Austria and Prussia over Silesia. France abandoned Prussia and allied with Austria. Russia, which saw Prussia as a major threat to Russian goals in central Europe, joined the new alliance with France and Austria. In turn, Britain allied with Prussia. This diplomatic revolution of 1756 led to another worldwide war. The war had

French and Indian War

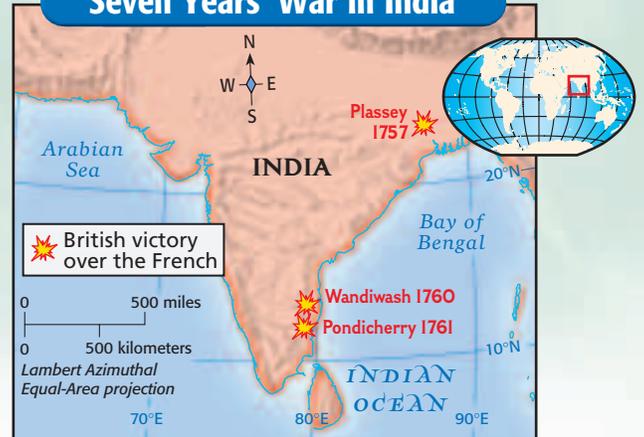


◀ Historical map of the siege of Quebec during the French and Indian War

Seven Years' War in Europe



Seven Years' War in India



three major areas of conflict: Europe, India, and North America.

The War in Europe Europe witnessed the clash of the two major alliances: the British and Prussians against the Austrians, Russians, and French. With his superb army and military skill, Frederick the Great of Prussia was able for some time to defeat the Austrian, French, and Russian armies. His forces were under attack from three different directions, however, and were gradually worn down.

Frederick faced disaster until Peter III, a new Russian czar who greatly admired Frederick, withdrew Russian troops from the conflict and from the Prus-

sian lands that the Russians had occupied. This withdrawal created a stalemate and led to the desire for peace. The European war ended in 1763. All occupied territories were returned to their original owners, while Austria officially recognized Prussia's permanent control of Silesia.

The War in India The struggle between Britain and France in the rest of the world had more decisive results. Known as the Great War for Empire, it was fought in India and North America. The French had returned Madras to Britain after the War of the Austrian Succession, but the struggle in India continued. The British ultimately won out, not because they

had better forces but because they were more persistent. With the Treaty of Paris in 1763, the French withdrew and left India to the British.

The War in North America The greatest conflicts of the Seven Years' War took place in North America. On the North American continent, the French and British colonies were set up differently. French North America (Canada and Louisiana) was run by the French government as a vast trading area. It was valuable for its fur, leather, fish, and timber. The French state was unable to get people to move to North America, so its colonies were thinly populated.

British North America consisted of 13 prosperous colonies on the eastern coast of the present United States. Unlike the French colonies, the British colonies were more populated, containing more than one million people by 1750.

The British and French fought over two primary areas in North America. One consisted of the waterways of the Gulf of St. Lawrence, which were protected by the fortress of Louisbourg and by forts that guarded French Quebec. The other area that was fought over was the unsettled Ohio River valley. The French began to move down from Canada and up from Louisiana to establish forts in the Ohio River valley. This French activity threatened to cut off the British settlers in the 13 colonies from expanding into this vast area. The French were able to gain the support of the Indians. As traders and not settlers, the

French were viewed by the Indians with less hostility than the British.

The French scored a number of victories, at first. British fortunes were revived, however, by the efforts of William Pitt the Elder, Britain's prime minister. Pitt was convinced that the French colonial empire would have to be destroyed for Britain to create its own colonial empire. Pitt's policy focused on doing little in the European theater of war while putting resources into the colonial war, especially through the use of the British navy. The French had more troops in North America but not enough naval support. The defeat of French fleets in major naval battles gave the British an advantage, because the French could no longer easily reinforce their garrisons.

A series of British victories soon followed. In 1759, British forces under General Wolfe defeated the French under General Montcalm on the Plains of Abraham, outside Quebec. Both generals died in the battle. The British went on to seize Montreal, the Great Lakes area, and the Ohio River Valley. The French were forced to make peace. By the Treaty of Paris, they transferred Canada and the lands east of the Mississippi to England. Their ally Spain transferred Spanish Florida to British control. In return, the French gave their Louisiana territory to the Spanish. By 1763, Great Britain had become the world's greatest colonial power.

 **Reading Check Explaining** How did Great Britain become the world's greatest colonial power?

SECTION 3 ASSESSMENT

Checking for Understanding

- Define** rococo, enlightened absolutism.
- Identify** Bach, Handel, Haydn, Mozart, Frederick the Great, Maria Theresa, Catherine the Great.
- Locate** Prussia, Austria, Russia, Silesia.
- Describe** the characteristics of an ideal enlightened ruler. Do any of the eighteenth-century rulers discussed in this section have the characteristics of an ideal ruler?
- List** all the countries in the world that fought in the Seven Years' War. Which country gained the most territory?

Critical Thinking

- Analyze** Why were Enlightenment ideals never fully practiced by eighteenth-century rulers?
- Compare and Contrast** Use a table like the one below to compare and contrast the reforms of Joseph II of Austria with those of Frederick II of Prussia and Catherine II of Russia.

Joseph II	Frederick II	Catherine II

Analyzing Visuals

- Identify** the theme of the Watteau painting on page 309. Find another example of rococo painting in an art history book in your school's library (such as a work by Giovanni Battista Tiepolo). Compare this painting to Watteau's. How are they similar?

Writing About History

- Expository Writing** Listen to a selection of medieval religious music and of Mozart's *The Magic Flute*. Write an essay describing how the two pieces are similar and different. What kind of emotion does each piece convey?



STUDY & WRITING SKILLBUILDER

Outlining

Why Learn This Skill?

Outlining is a useful skill for both taking notes and writing papers. When you are studying written material, use outlining to organize information. This not only helps you absorb the material, but later you will have useful notes to review for class or tests. When you are writing a paper, outlining is a good starting point for putting information in a logical order. Then use the material in the outline to write your paragraphs and arrange your essay.

Learning the Skill

There are two kinds of outlines—formal and informal. An informal outline is similar to taking notes and is useful for reviewing for a test.

- Write only words and phrases needed to remember ideas.
- Note related but less important details under the main ideas.

A formal outline has a standard format. In a formal outline:

- Label main heads with Roman numerals, subheads with capital letters, and details with Arabic numerals.
- Have at least two entries for each level.
- Indent each level from the level above.
- Use the same grammatical form for all entries. If one entry is a complete sentence, all other entries at that level must be complete sentences.

Practicing the Skill

Study the following outline and then answer these questions.

- I. Changes in Astronomy
 - A. Galileo Galilei
 1. Used the telescope to observe the heavens
 2. Condemned by the Catholic Church
 - B. Isaac Newton
 1. Tied together the work of Copernicus, Kepler, and Galileo
 2. Published the *Principia*
 - a. Defined the three laws of motion
 - b. Proved the universal law of gravitation
- II. Changes in Medicine
 - A. Andreas Vesalius
 1. Dissected human bodies for the first accurate descriptions of human anatomy
 2. Published *On the Fabric of the Human Body*
 - B. William Harvey
 1. Wrote the theory of blood circulation
 2. Published *Motion of the Heart and Blood*

1. Is this a formal or an informal outline?
2. What are the two main headings?
3. How does each subhead under “Isaac Newton” support the topic of the level above it?
4. Give two examples of grammatical consistency.



Nicholas Copernicus observing an eclipse of the moon

Applying the Skill

Using the guidelines above, create a formal outline for Section 3 of this chapter.



Glencoe's **Skillbuilder Interactive Workbook, Level 2**, provides instruction and practice in key social studies skills.

SECTION 4

Colonial Empires and the American Revolution

Guide to Reading

Main Ideas

- The colonies of Latin America and British North America were developing in ways that differed from their European mother countries.
- The American colonies revolted against Great Britain and formed a new nation.

Key Terms

mestizo, mulatto, federal system

People to Identify

Sor Juana Inés de la Cruz, Hanoverians, Robert Walpole

Places to Locate

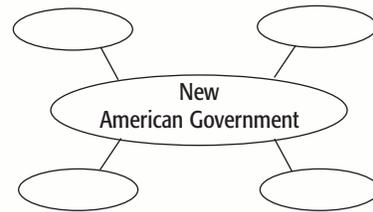
Brazil, Yorktown

Preview Questions

1. What were the chief characteristics of Latin American society?
2. What caused the American Revolution, and what did it accomplish?

Reading Strategy

Summarizing Information Use a chart like the one below to identify key aspects of the government created by the American colonists.



Interactive Graphic Organizer

Preview of Events



Thomas Jefferson

Voices from the Past

On July 2, 1776, the Second Continental Congress adopted a resolution declaring the independence of the American colonies. It read:

“We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness. That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed. That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it and to institute new Government.”

—*The Declaration of Independence*

The ideas of the Enlightenment had clearly made an impact on the colonies in North America. Despite their close ties to their European mother countries, the colonies of Latin America and British North America were developing in ways that sometimes differed significantly from those of Europe.

Colonial Empires in Latin America

In the sixteenth century, Portugal came to dominate **Brazil**. At the same time, Spain established an enormous colonial empire in the Western Hemisphere that included parts of North America, Central America, and most of South America. Within the lands of Central America and South America, a new civilization arose, which we call Latin America.

Latin America was a multiracial society. Already by 1501, Spanish rulers permitted intermarriage between Europeans and Native Americans, whose offspring became known as **mestizos** (meh•STEE•zohz). In addition, over a period of three centuries, possibly as many as 8 million African slaves were brought to Spanish and Portuguese America to work the plantations. **Mulattoes**—the offspring of Africans and Europeans—joined mestizos and other descendants of Europeans, Africans, and Native Americans to produce a unique society in Latin America.

Economic Foundations Both the Portuguese and the Spanish sought ways to profit from their colonies in Latin America. One source of wealth came from abundant supplies of gold and silver, which were sent to Europe. Farming, however, proved to be a more long-lasting and rewarding source of prosperity for Latin America.

A noticeable feature of Latin American agriculture was the dominant role of the large landowner. Both

Spanish and Portuguese landowners created immense estates. Native Americans either worked on the estates or worked as poor farmers on marginal lands. This system of large landowners and dependent peasants has remained a lasting feature of Latin American society.

Trade provided another avenue for profit. In addition to gold and silver, a number of other natural products were shipped to Europe, including sugar, tobacco, diamonds, and animal hides. In turn, the mother countries supplied their colonists with manufactured goods.

Both Spain and Portugal closely regulated the trade of their American colonies to keep others out. By the beginning of the eighteenth century, however, both the British and the French had become too powerful to be kept out of the lucrative Latin American markets.

State and Church Portuguese Brazil and Spanish Latin America were colonial empires that lasted over three hundred years. The difficulties of



communication and travel between the Americas and Europe made the attempts of the Spanish and Portuguese monarchs to provide close regulation of their empires virtually impossible. As a result, colonial officials in Latin America had much freedom in carrying out imperial policies.

From the beginning of their conquest of the New World, Spanish and Portuguese rulers were determined to Christianize the native peoples. This policy gave the Catholic Church an important role to play in the Americas—a role that added considerably to the Church’s power.

Catholic missionaries—especially the Dominicans, Franciscans, and Jesuits—fanned out to different parts of the Spanish Empire. To make their efforts easier, the missionaries brought Native Americans together into villages, or missions, where the native peoples could be converted, taught trades, and encouraged to grow crops. Missions enabled missionaries to control the lives of the Native Americans and keep them as docile members of the empire.

The Catholic Church built cathedrals, hospitals, orphanages, and schools in the colonies. The schools taught Native American students the basics of reading, writing, and arithmetic. The Catholic Church also provided an outlet other than marriage for women. They could enter convents and become nuns.

As in Europe, women in colonial religious orders—many of them of aristocratic background—

often lived well. Many nuns worked outside their convents by running schools and hospitals. Indeed, one of these nuns, **Sor Juana Inés de la Cruz**, urged that women be educated.

Reading Check Explaining How did the Portuguese and the Spanish profit from their colonies in Latin America?

Britain and British North America

The United Kingdom of Great Britain came into existence in 1707, when the governments of England and Scotland were united. The term *British* came to refer to both the English and the Scots.

In eighteenth-century Britain, the monarch and the Parliament shared power, with Parliament gradually gaining the upper hand. The monarch chose ministers who were responsible to the Crown and who set policy and guided Parliament. Parliament had the power to make laws, levy taxes, pass the budget, and indirectly influence the ministers of the monarch.

In 1714, a new dynasty—the **Hanoverians**—was established when the last Stuart ruler, Queen Anne, died without an heir. The crown was offered to her nearest relatives, Protestant rulers of the German state of Hanover. The first Hanoverian king, George I, did not speak English, and neither the first nor the second George knew the British system very well. Therefore, their chief ministers were allowed to handle Parliament.

Robert Walpole served as head of cabinet (later called prime minister) from 1721 to 1742 and pursued a peaceful foreign policy. However, growing trade and industry led to an ever-increasing middle class. The middle class favored expansion of trade and of Britain’s world empire. They found a spokesman in William Pitt the Elder, who became head of cabinet in 1757. He expanded the British Empire by acquiring Canada and India in the Seven Years’ War.

In North America, then, Britain controlled Canada as well as 13 colonies on the eastern coast of the present United States. The British colonies were thickly populated, containing more than one million people by 1750. They were also prosperous.

The colonies were supposedly run by the British Board of Trade, the Royal Council, and Parliament, but the colonies actually had legislatures that tended to act independently. Merchants in port cities such as Boston, Philadelphia, New York, and Charleston did not want the British government to run their affairs.

Reading Check Explaining What countries made up Great Britain in the 1700s? To whom does the term *British* refer?

People In History

Sor Juana Inés de la Cruz

1651–1695—Mexican poet

Juana Inés de la Cruz was one of seventeenth-century Latin America’s best-known literary figures. She was an avid learner but was denied admission to the University of Mexico because she was a woman. As a result of this rejection, she chose to enter a convent, where she could write poetry and plays. She said, “Who has forbidden women to engage in private and individual studies? Have they not a rational soul as men do?”

By her late thirties, she had become famous as a great poet. Denounced by her bishop for writing secular literature, she agreed to stop writing and devote herself to purely religious activities. She died at the age of 43 while nursing the sick during an epidemic in Mexico City.



The American Revolution

After the Seven Years' War, British leaders wanted to get new revenues from the colonies. These revenues would be used to cover war costs, as well as to pay for the expenses of maintaining an army to defend the colonies.

In 1765, the Parliament imposed the Stamp Act on the colonies. The act required that certain printed materials, such as legal documents and newspapers, carry a stamp showing that a tax had been paid to Britain. Opposition was widespread and often violent, and the act was repealed in 1766. The crisis was over, but the cause of the dispute was not resolved.

The War Begins Crisis followed crisis in the 1770s. To counteract British actions, the colonies organized the First Continental Congress, which met in Philadelphia in September 1774. Outspoken members urged colonists to “take up arms and organize militias.”

Fighting finally erupted between colonists and the British army in April 1775 in Lexington and Concord, Massachusetts. The Second Continental Congress met soon afterward and formed an army, called the Continental Army, with George Washington as commander in chief. Still, the colonists did not rush headlong into war. After the fighting in Lexington and Concord, more than a year passed before the decision was made to declare independence from the British Empire.

On July 4, 1776, the Second Continental Congress approved a declaration of independence written by Thomas Jefferson. Based on the ideas of John Locke (see page 233), the Declaration of Independence declared the colonies to be “free and independent states absolved from all allegiance to the British Crown.” The American Revolution had formally begun.

The war against Great Britain was a great gamble. Britain was a strong military power with enormous financial resources. The Continental Army of the Americans was made up of undisciplined amateurs who agreed to serve for only a short time.

Foreign Support and British Defeat Of great importance to the colonies' cause was support from foreign countries. These nations were eager to gain revenge for earlier defeats at the hands of the British.

The French supplied arms and money to the rebels from the beginning of the war. French officers and soldiers also served in Washington's army. In February



Lord Cornwallis surrendering to George Washington (left of the American flag)

1778, following a British defeat, the French granted diplomatic recognition to the American state.

Spain and the Dutch Republic also entered the war against Great Britain. Now, the British were faced with war against much of Europe, as well as against the Americans.

When the army of General Cornwallis was forced to surrender to combined American and French forces under Washington at **Yorktown** in 1781, the British decided to end the war. The Treaty of Paris, signed in 1783, recognized the independence of the American colonies and granted the Americans control of the western territory from the Appalachians to the Mississippi River.



Reading Check **Explaining** Why did foreign countries support the American cause?

The Birth of a New Nation

TURNING POINT Americans created a new social contract in 1788. The creation of the Constitution made Enlightenment concepts of liberty and representative government a reality for the first time.

The 13 American colonies had gained their independence. The former colonies were now states. The states feared concentrated power, however, and each one was primarily concerned for its own interests. For these reasons, they had little enthusiasm for creating a united nation with a strong central government.

The Articles of Confederation, the American nation’s first constitution, thus did little to provide for a strong central government. It soon became clear that the government under the Articles lacked the power to deal with the new nation’s problems. A movement for a different form of national government arose.

The Articles of Confederation had been approved in 1781. In the summer of 1787, 55 delegates met in Philadelphia to revise the Articles. That meeting became known as the Constitutional Convention. The convention’s delegates decided to write a plan for an entirely new national government.

The Constitution The proposed Constitution created a **federal system** in which power would be shared between the national government and the state governments. The national, or federal, government was given the power to levy taxes, raise an army, regulate trade, and create a national currency.

The federal government was divided into three branches, each with some power to check the workings of the others. The first branch was the executive branch. A president served as the chief executive. The president had the power to execute laws, veto the legislature’s acts, supervise foreign affairs, and direct military forces.

The second branch of government was the legislative branch. It consisted of two houses—the Senate, with members elected by the state legislatures, and the House of Representatives. Representatives were elected directly by the people.

The Supreme Court and other courts “as deemed necessary” by Congress provided the third branch of government, the judicial branch. The courts would enforce the Constitution as the “supreme law of the land.”

According to the Constitutional Convention, the Constitution would have to be ratified, or approved, by nine states before it could take effect. The Constitution was eventually approved, but in several states the margin was slim.

The Bill of Rights Important to the eventual adoption of the Constitution was a promise to add a bill of rights. In 1789 the new Congress proposed 12 amendments, and the 10 that were approved by the states became known as the Bill of Rights.

These 10 amendments guaranteed freedom of religion, speech, press, petition, and assembly. They gave Americans the right to bear arms and to be protected against unreasonable searches and arrests. They guaranteed trial by jury, due process of law, and the protection of property rights.

Many of the rights in the Bill of Rights were derived from the natural rights proposed by the eighteenth-century philosophes. Many European intellectuals saw the American Revolution as the embodiment of the Enlightenment’s political dreams. The premises of the Enlightenment seemed confirmed. A new age and a better world could be achieved.

Reading Check **Contrasting** What was the main difference between the Articles of Confederation and the Constitution?

SECTION 4 ASSESSMENT

Checking for Understanding

- Define** mestizo, mulatto, federal system.
- Identify** Sor Juana Inés de la Cruz, Hanoverians, Robert Walpole.
- Locate** Brazil, Yorktown.
- Explain** the role of the Catholic Church and its missionaries in colonial Latin America.
- List** the freedoms guaranteed under the American Bill of Rights.



Critical Thinking

- Summarize** Why did the American colonies declare their independence from the British Empire?
- Summarizing Information** Use a chart like the one below to identify the significant events and conflicts between the British and the colonists leading to the American Revolution.

Conflicts Between British and Colonists

Analyzing Visuals

- Examine** the depiction of the signing of the Declaration of Independence on page 152. What principles of government and citizenship are illustrated in the painting?

Writing About History

- Expository Writing** Do further research on how the French supported the colonies during the American Revolution. Based on your research, write an essay analyzing the importance of the French assistance to the American colonists.



The Mission



IN 1609, TWO JESUIT PRIESTS set out as missionaries to the Guarani Indians in eastern Paraguay. Eventually, the Jesuits established more than 30 missions in the region. This description of a Jesuit mission in Paraguay was written by Félix de Azara, a Spanish soldier and scientist.

“Having spoken of the towns founded by the Jesuit fathers, and of the manner in which they were founded, I shall discuss the government which they established in them. . . . In each town resided two priests, a curate and a sub-curate, who had certain assigned tasks.

The curate allowed no one to work for personal gain; he compelled everyone, without distinction of age or sex, to work for the community, and he himself saw to it that all were equally fed and dressed. For this purpose the curates placed in storehouses all the fruits of agriculture and the products of industry, selling in the Spanish towns their surplus of cotton, cloth, tobacco, vegetables, skins, and wood, transporting them in their own boats down the nearest rivers, and returning with whatever was required.

From the foregoing one may infer that the curates disposed of the surplus funds of the Indian towns, and that no Indian could aspire to own private property. This deprived them of any incentive to use reason or talent, since the most industrious, able, and worthy person had the same food, clothing, and pleasures as the most wicked, dull, and indolent. It also follows that although this form of government was well designed to enrich the communities it also caused the Indian to work at a languid pace, since the wealth of his community was of no concern to him.

It must be said that although the Jesuit fathers were supreme in all respects, they employed their



Seventeenth-century mission in Paraguay

authority with a mildness and restraint that command admiration. They supplied everyone with abundant food and clothing. They compelled the men to work only half a day, and did not drive them to produce more. Even their labor was given a festive air, for they went in procession to the fields, to the sound of music. . . . They gave them many holidays, dances, and tournaments, dressing the actors and the members of the municipal councils in gold or silver tissue and the most costly European garments, but they permitted the women to act only as spectators.”

—Félix de Azara, *Description and History of Paraguay and Rio de la Plata*

Analyzing Primary Sources

1. How is the mission town's government and economic system structured?
2. According to Azara, what are some of the problems with the town's system?
3. How might a Native American's description of the mission differ from Azara's European perspective?



Using Key Terms

- The _____ is a systematic procedure for collecting and analyzing evidence.
- The idea that Earth is at the center of the universe is called a _____ or _____ system.
- In the Americas, the offspring of European and American native peoples were called _____.
- A new type of monarchy called _____ was influenced by reform-minded philosophes.
- In the _____, power is shared between the national government and the state government.
- When scientists proceed from the particular to the general they are using _____.
- The belief that the Sun is at the center of the universe is called a _____ theory.
- The intellectuals, or thinkers, of the Enlightenment, were generally called _____.
- Descartes is known as the father of _____.
- The doctrine that maintains that the state should not intervene in economics is called _____.
- Government** Name two of the three groups that officially ran the 13 British colonies in North America.
- Government** According to Adam Smith, what is the proper role of government in society?
- Culture** Name two early eighteenth-century composers who have stood out as musical geniuses of the baroque style.
- History** What country challenged Spanish power in the Americas?
- Culture** What did Henry Fielding write about in his novels? What was his most popular work?
- Science and Technology** How did Newton explain the universal law of gravitation?
- Culture** Why is Mary Wollstonecraft often considered the founder of the modern women's movement?
- Culture** In his *Essay Concerning Human Understanding*, what ideas did John Locke propose?
- History** What was the major accomplishment of the Second Continental Congress?

Reviewing Key Facts

- History** What was the Enlightenment?

Critical Thinking

- Making Generalizations** Describe inductive reasoning and give an example of finding scientific truth by using inductive principles.
- Summarizing** Explain how separation of powers works in the American government today and give specific examples.

Chapter Summary

As the Scientific Revolution and the ideas of the Enlightenment spread across Europe, innovations based on science and reason came into conflict with traditional beliefs, as shown in the chart below.

Innovation	Conflict or Reaction
Copernicus theorizes that Earth revolves around the Sun.	The Church teaches that Earth is the center of the universe.
Vesalius makes discoveries in anatomy.	French lawmakers consider dissecting human bodies illegal.
Boyle discovers that air is not a basic element.	Alchemists believe that all matter is made from four elements: earth, water, fire, and air.
Philosophes believe that the universe is structured, orderly, and governed by systematic laws.	Rousseau criticizes the emphasis on reason and promotes acting upon instinct.
Deism, a new religious concept based on reason and natural law, emerges.	Traditional views of established, organized religions are widespread.
Diderot publishes new scientific theories in the <i>Encyclopédie</i> .	The Catholic Church bans the <i>Encyclopédie</i> , and its editor is sent to prison.
Enlightened rulers implement political and humanitarian reforms.	Powerful nobles and church leaders fear losing power and reject most political reforms.

CLICK HERE



Self-Check Quiz

Visit the *Glencoe World History—Modern Times* Web site at wh.mt.glencoe.com and click on **Chapter 10—Self-Check Quiz** to prepare for the Chapter Test.

Writing About History

23. **Expository Writing** Analyze how the ideas of John Locke, Montesquieu, Rousseau, and Voltaire influenced the development of the United States Constitution. Which thinker(s) had the most impact on the writers of the Constitution? Why has the Constitution remained so strong while so many reform efforts of the eighteenth century failed?

Analyzing Sources

Read the following quote from John Locke's *Essay Concerning Human Understanding*:

“Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas. How comes it to be furnished? Whence has it all the materials of reason and knowledge? To this I answer, in one word, from experience. . . . Our observation, employed either about external sensible objects or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understanding with all the materials of thinking.”

24. According to Locke, how did the blank mind become knowledgeable?
25. How did one gain the experience necessary to nurture the mind?

Applying Technology Skills

26. **Creating a Database** Search the Internet for information about the great thinkers of the Enlightenment. Use a word processor to organize your research into a chart. Include headings such as name of philosopher, country, and ideas. Write a paragraph explaining which philosopher you believe had the greatest impact on modern civilization. Support your selection with facts and examples.

Making Decisions

27. As the reigns of Joseph II and Catherine the Great illustrate, it was very difficult to put the ideas of the Enlightenment into practice. Imagine that you are an enlightened monarch who wants to reform your country. What reforms will you initiate? Which thinker will most influence your reform plans? What problems might you encounter?



Analyzing Maps and Charts

28. What are the two largest islands in the Caribbean?
29. Name the battles fought in the West Indies during the Seven Years' War.
30. What is the approximate distance from Havana to Martinique?

Standardized Test Practice

Directions: Use the time line *and* your knowledge of world history to answer the following question.

Selected Milestones in Political Thought

1762 *The Social Contract* describes Rousseau's belief that governments are created from the people's general will

1760 1765 1770 1775 1780 1785 1790 1795

1776 The Declaration of Independence asserts the right to overthrow an unjust king

1792 Mary Wollstonecraft argues for equal rights for women

Which one of the following statements is supported by the information on the time line?

- A Most Europeans supported their monarchs completely.
- B Many people questioned the nature of their governments.
- C There were few political problems in the 1750s.
- D Only men thought and wrote about politics.

Test-Taking Tip: With a time line question, you may need to make an inference. Look for clues in the test question and time line. In this case, think about what the events on the time line have in common. These clues can help you make an inference that is supported by the time line.

