

The Age of Enlightenment

◀ A statue of Louis XIV on horseback outside of the palace of Versailles in France



NATIONAL GEOGRAPHIC

Where & When?



1650

1700

1750

1800

1687

Isaac Newton states laws about motion and gravity

1690

John Locke writes about people's rights

1748

Montesquieu describes separation of powers

1776

Declaration of Independence is signed

The Big Ideas

Section 1 The Scientific Revolution

Studying the past helps to understand the present. Scientific ideas and discoveries gave Europeans a new way to understand the universe.

Section 2 The Ideas of the Enlightenment

Systems of order, such as law and government, contribute to stable societies. During the 1700s, many Europeans believed that reason could be used to make government and society better.

Section 3 Politics and the Enlightenment

Studying the past helps to understand the present. The ideas of the Enlightenment played a role in both the American Revolution and the French Revolution, and brought about many other changes that still affect our world today.

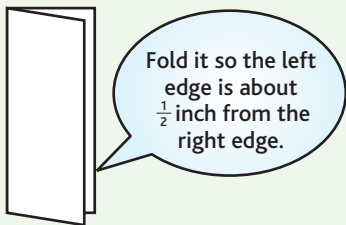


View the Chapter 11 video in the Glencoe Video Program.

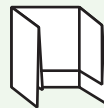
FOLDABLES™ Study Organizer

Organizing Information Make this foldable to help you compare and contrast the ideas of the Scientific Revolution and the Enlightenment.

Step 1 Fold a sheet of paper in half from side to side.



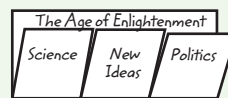
Step 2 Turn the paper and fold it into thirds.



Step 3 Unfold and cut the top layer only along both folds.



Step 4 Label as shown.



Reading and Writing
As you read the chapter, write notes under each appropriate tab of your foldable. Be sure to use main ideas and key terms to help you organize your notes.

Get Ready to Read

Taking Notes



Reading
Skill

1 Learn It!

The best way for you to remember information is to write it down, or take notes. Good note-taking is useful for studying and research. When you are taking notes, it is helpful to:

- phrase the information in your own words
- restate ideas in short, memorable phrases
- stay focused on main ideas and only the most important supporting details

See the example of note-taking using the paragraph below.

The Enlightenment raised questions about the role of women in society. Previously, many male thinkers claimed that women were less important than men and had to be controlled and protected. By the 1700s, however, women thinkers began calling for women's rights. The most powerful supporter of women's rights was the English writer Mary Wollstonecraft. ... Many people today credit her as the founder of the modern movement for women's rights.

— from page 529

A

B

C

Reading Tip

Finish reading before you begin taking notes.

A. The Enlightenment brought attention to women's rights.

B. Women were previously treated as less important and not as strong as men.

C. English writer Mary Wollstonecraft is seen as the founder of the women's rights movement.

2 Practice It!

Make note-taking easier by using a chart to help you organize information clearly. Write the main ideas in the left column. Then write at least two supporting details for each main idea in the right column. Read the text from Section 1 of this chapter under the heading **The Scientific Revolution**, pages 515–517. Then take notes using a chart, such as the one below.

Main Idea	Supporting Details
	1.
	2.
	3.
	4.
	5.
	1.
	2.
	3.
	4.
	5.

Read to Write

Choose an important scientist, philosopher, or thinker from the chapter. Do further research, using at least three sources and taking notes as you read. Use your notes to write a brief report.



3 Apply It!

As you read this chapter, make a chart with important dates, names, places, and events as main ideas. Under each main idea, list at least two supporting details from your reading.

Section

1

The Scientific Revolution

Guide to Reading



History Social Science Standards

WH.7.10 Students analyze the historical developments of the Scientific Revolution and its lasting effect on religious, political, and cultural institutions.

Looking Back, Looking Ahead

One result of the Renaissance was a new interest in science. During the 1600s, people began to observe, experiment, and reason to find new knowledge.

Focusing on the Main Ideas

- The thinkers of the ancient world developed early forms of science and passed this knowledge to later civilizations. (page 515)
- European interest in astronomy led to new discoveries and ideas about the universe and Earth's place in it. (page 517)
- The Scientific Revolution led to new discoveries in physics, medicine, and chemistry. (page 519)
- Using the scientific method, Europeans of the 1600s and 1700s developed new ideas about society based on reason. (page 522)

Meeting People

- Ptolemy** (TAH•luh•mee)
- Copernicus** (koh•PUHR•nih•kuhs)
- Kepler** (KEH•pluhr)
- Galileo** (GA•luh•LEE•oh)
- Newton** (NOO•tuhn)
- Descartes** (day•KAHRT)

Content Vocabulary

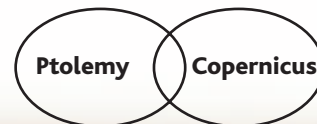
- theory** (THEE•uh•ree)
- rationalism** (RASH•nuh•LIH•zuhl)
- scientific method**
- hypothesis** (hy•PAH•thuh•suhs)

Academic Vocabulary

- investigate** (ihn•VEHS•tuh•GAYT)
- approach** (uh•PROHCH)

Reading Strategy

Compare and Contrast Use a diagram like the one below to show the similarities and differences in the views of Ptolemy and Copernicus.



Where & When?



1500

1543

Copernicus supports sun-centered solar system

1600

1632

Galileo publishes work supporting Copernicus's ideas

1700

1687

Isaac Newton states laws about motion and gravity



The Scientific Revolution

Main Idea The thinkers of the ancient world developed early forms of science and passed this knowledge to later civilizations.

Reading Connection Have you ever taught a skill or passed on an idea to a younger brother or sister? Read in this chapter how the scientific ideas of early thinkers were passed on to later generations.

From earliest times, people have been curious about the world around them. Thousands of years ago, people began to use numbers, study the stars and planets, and watch the growth of plants and animals. These activities were the beginnings of science. Science is any organized study of the natural world and how it works.

Early Scientists Early civilizations developed different kinds of science to solve practical problems. Among the first sciences were mathematics, astronomy, and medicine. Mathematics was used for record keeping and building projects. Astronomy helped people keep time and figure out when to plant and harvest crops. Early civilizations also developed medical practices, such as surgery, acupuncture, and the use of herbs, for treating illnesses.

The ancient Greeks left behind a large amount of scientific knowledge. They believed that reason was the only way to understand nature. As they studied the world, they developed theories. A **theory** (THEE•uh•ree) is an explanation of how or why something happens. A theory is based on what you can observe about something. It may not be correct, but it seems to fit the facts.

In ancient Greece, the Greek philosopher Aristotle observed nature and compiled vast amounts of information about plants, animals, and the environment. He then took the facts he gathered and classified

them, or arranged them into groups, based on their similarities and differences.

The Greeks made many important scientific advances, but their approach to science had some problems. For example, they did not experiment, or test, new ideas to see if they were true. Many of their conclusions were false because they were based on “common sense” instead of experiments.

For example, in the A.D. 100s, the Egyptian-born astronomer **Ptolemy** (TAH•luh•mee) stated that the sun and the planets moved around the earth in circular paths. After all, it did seem like the earth was the center of the universe. Astronomers in Europe accepted Ptolemy’s geocentric, or Earth-centered, theory for more than 1,400 years.

Science During the Middle Ages In Roman times, people continued to accept the scientific knowledge of the Greeks. During the Middle Ages, most Europeans were more interested in theology, or the study of God, than in the study of nature. For scientific knowledge, they relied on Greek and Roman writings and saw no need to **investigate** the facts or to make their own observations. Many of these ancient works, however, were either lost or poorly preserved.

Meanwhile, Arabs and Jews in the Islamic Empire preserved much of the science of the Greeks and Romans. They carefully copied many Greek and Roman works into the Arabic language. They also came into contact with the science of the Persians and the Indian system of mathematics.

Arabic and Jewish scientists made advances of their own in areas such as mathematics, astronomy, and medicine. However, in spite of these achievements, scientists in the Islamic world did not experiment or develop the instruments



necessary to advance their scientific knowledge.

During the 1100s, European thinkers became involved in science again as a result of their contacts with the Islamic world. Major Islamic scientific works were brought to Europe and translated into Latin. The Hindu-Arabic system of numbers also spread to Europe, where it eventually replaced Roman numerals.

Christian thinkers, such as Thomas Aquinas, tried to show that Christianity and reason could go together. During the 1100s, Europeans began building new universities. These universities would play an important role in the growth of science.

As you have read, in the 1300s the ideas of the Renaissance humanists developed

into a new way of understanding the world. Humanists borrowed ideas from the ancient Greeks and Romans and combined them with ideas based on reason and ideas based on faith.

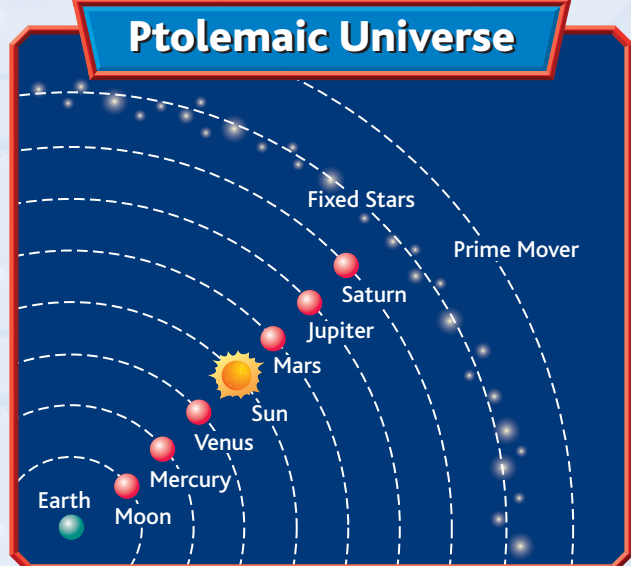
Humanist ideas then spread across Europe, aided by the invention of the printing press. This invention continued to play an important role in spreading ideas during the 1600s and 1700s.

In the meantime, the humanist **approach** to science and reason led to other inventions during the Renaissance. These helped bring about the Age of Exploration that you read about in Chapter 10. Better charts, maps, and navigational instruments helped explorers reach different parts of the world in the 1400s and 1500s.

A New View of the Universe



Ptolemaic Universe



The astronomical theory of Ptolemy (left) placed Earth at the center of the universe (above). His theory was accepted for more than a thousand years. **According to the diagram, how many planets besides Earth were known at the time of Ptolemy?**



WH7.10.1 Discuss the roots of the Scientific Revolution (e.g., Greek rationalism; Jewish, Christian, and Muslim science; Renaissance humanism; new knowledge from global exploration). **WH7.10.2** Understand the significance of the new scientific theories (e.g., those of Copernicus, Galileo, Kepler, Newton) and the significance of new inventions (e.g., the telescope, microscope, thermometer, barometer).

The voyages of exploration helped Europe become the world leader in commerce and trade. They also added to Europe's scientific knowledge. Explorers mapped the oceans and continents, and new kingdoms and countries were located. Scientists gathered and classified new knowledge about plants, animals, and diseases in different parts of the world.

By the 1500s, various developments in Europe had come together to increase European interest in science. As more and more people began to study science, many new discoveries were made. This era, when Europeans became interested in science again, is known as the Scientific Revolution.

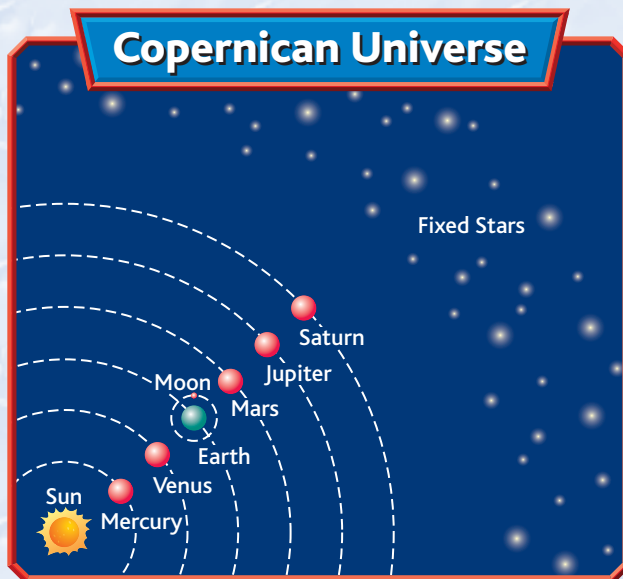
Reading Check Describe Describe scientific knowledge during the Middle Ages.

A Revolution in Astronomy

Main Idea European interest in astronomy led to new discoveries and ideas about the universe and Earth's place in it.

Reading Connection What would people on Earth think if life were discovered on other planets? Read to see how Europeans reacted to new discoveries about the universe.

During the 1500s, European thinkers began to abandon the old scientific ideas. They increasingly understood that advances in science could only come through mathematics and experimentation. This new way of thinking led to a revolution, or sweeping change, in the way Europeans understood science and the search for knowledge. Astronomy was the first science affected by



Nicolaus Copernicus (right), a Polish mathematician, believed that the sun was at the center of the universe. His model (above) placed Earth and the other planets in orbits around the sun. **Why did Europeans again become interested in science in the 1100s?**



the Scientific Revolution. New discoveries brought changes in the way Europeans saw the universe. They challenged traditional thinking that God had made the earth as the center of the universe.

Who Was Copernicus? Leading the Scientific Revolution was a Polish mathematician named Nicolaus **Copernicus** (koh•PUHR•nih•kuhs). In 1543 Copernicus released a book called *On the Revolutions of the Heavenly Spheres*. He disagreed with Ptolemy's view that the earth was the center of the universe. Copernicus believed that Ptolemy's theory

was too complicated. Instead, he developed a simpler heliocentric, or sun-centered, theory of the universe. Copernicus's theory stated that the Sun, not Earth, was the center of the universe. The planets moved in circular paths around the Sun.

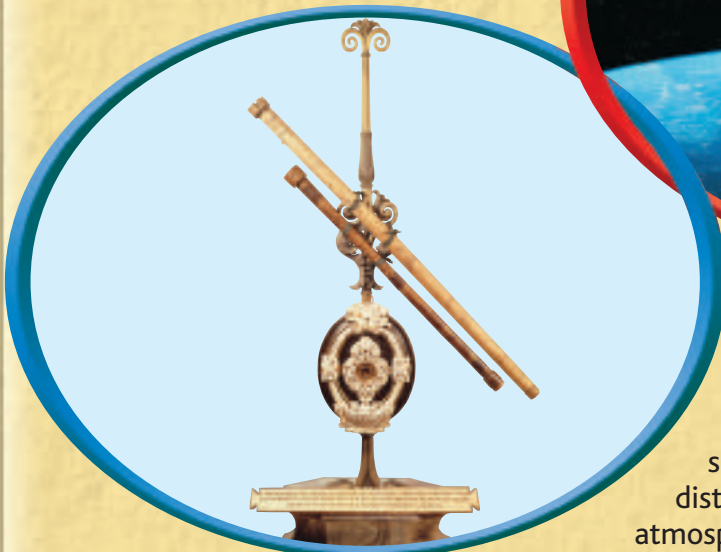
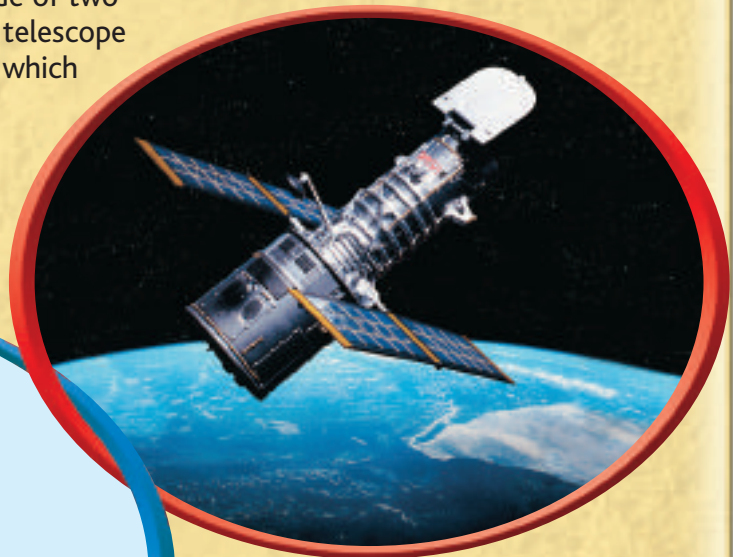
Kepler's Revolution The next step forward in astronomy was taken by a German astronomer named Johannes **Kepler** (KEH•pluhr). He supported Copernicus's theory but also made corrections to it. Kepler added the idea that the planets move in ellipses (ih•LIHP•SEEZ), or oval paths, rather than circular

Linking Past & Present

Telescopes

PAST Galileo's first telescope was made of two lenses inside a tube. Kepler improved the telescope by including an outward curving eyepiece, which increased the magnification and field of view. In 1663 James Gregory published a description of a reflecting telescope that would use a mirror to gather and focus light. It was not built until 1668.

▼ The Hubble Space Telescope



PRESENT Today, telescopes are large, complex, and powerful. The Hubble Space Telescope has been in orbit 380 miles above the earth's surface since 1990. It can see great distances because it is outside the atmosphere. **Why is astronomy important today?**

▲ Galileo's telescope



WH7.10.2 Understand the significance of the new scientific theories (e.g., those of Copernicus, Galileo, Kepler, Newton) and the significance of new inventions (e.g., the telescope, microscope, thermometer, barometer).

ones. His theory made it easier to explain the movements of the planets. It also marked the beginning of modern astronomy.

Who Was Galileo? An Italian scientist named Galileo Galilei made the third great breakthrough in the Scientific Revolution.

Galileo (GA•luh•LEE•oh) believed that new knowledge could come through experiments that were carefully carried out. For example, Galileo challenged Aristotle’s idea that the heavier the object is, the faster it falls to the ground. Galileo’s experiments proved that Aristotle was wrong. Objects fall at the same speed regardless of their weight.

Galileo also realized that scientific instruments could help humans better explore the natural world. He improved instruments, such as the clock and telescope. With the telescope, Galileo found clear evidence supporting Copernicus’s view that Earth revolves around the Sun.

Galileo also played an important role in the development of new scientific instruments. In 1593 he invented a water thermometer that, for the first time, allowed temperature changes to be measured. Galileo’s assistant, Evangelista Torricelli, then used the element called mercury to build the first barometer, an instrument that measures air pressure.

When Galileo published his ideas in 1632, his work was condemned by the Roman Catholic Church. The Catholic Church held to the geocentric, or Earth-centered, view of the universe, believing that it was taught in the Bible. The pope ordered Galileo to come to Rome to be tried for heresy. Church threats finally forced Galileo to withdraw many of his statements. Nonetheless, Galileo’s ideas spread throughout Europe and changed people’s views about the universe.

Reading Check Explain How did Galileo prove Copernicus’s theory?

New Scientific Discoveries

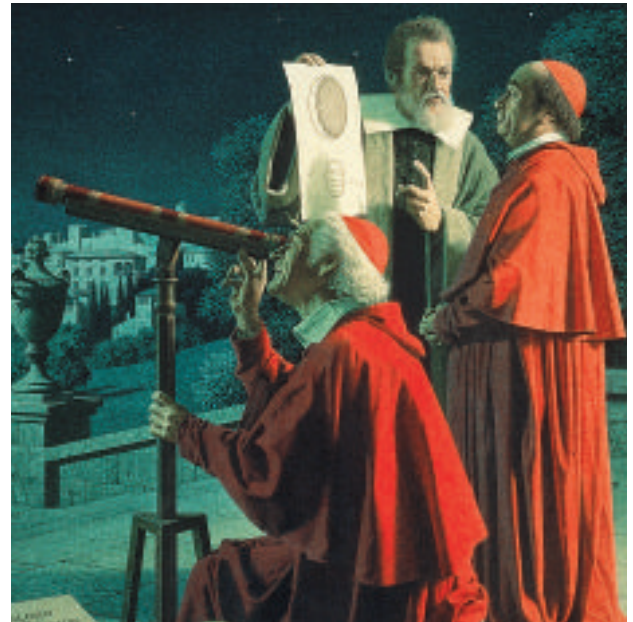
Main Idea The Scientific Revolution led to new discoveries in physics, medicine, and chemistry.

Reading Connection Think about all the facts you know about medicine. For example, you know your heart pumps blood, your lungs breathe air, and your body is made of cells. Read to learn how scientists of the 1600s and 1700s made discoveries we often take for granted today.

Throughout the 1600s and 1700s, the Scientific Revolution continued to spread. Many new discoveries were made in physics, medicine, and chemistry.

Who Is Isaac Newton? Despite continuing scientific breakthroughs, the ideas of Copernicus, Kepler, and Galileo needed to be brought together as one system. This feat was accomplished by an English mathematician named Isaac **Newton** (NOO•tuhn).

According to tradition, Newton was sitting in his garden one day when he watched an apple fall to the ground. The



▲ In this painting, Galileo presents his astronomical findings to the Catholic clergy. **How did Galileo respond to the Church’s condemnation of his work in astronomy?**



apple's fall led him to the idea of gravity, or the pull of the earth and other bodies on objects at or near their surfaces.

In a book called *Principia*, published in 1687, Newton stated his laws, or well-tested theories, about the motion of objects in space and on Earth. The most significant was the universal law of gravitation. It explains that the force of gravity holds the entire solar system together by keeping the sun and the planets in their orbits. Newton's ideas led to the rise of modern physics, or the study of physical properties such as matter and energy.

Medicine and Chemistry Sweeping changes were made in medicine in the 1500s and 1600s. Since Roman times, European doctors had relied on the teachings of the Greek

physician Galen. Galen wanted to study the human body, but he was only allowed to dissect, or cut open, animals.

In the 1500s, however, a Flemish doctor named Andreas Vesalius began dissecting dead human bodies for research. In 1543 Vesalius published *On the Structure of the Human Body*. In this work, Vesalius presented a detailed account of the human body that replaced many of Galen's ideas.

Other breakthroughs in medicine took place. In the early 1600s, William Harvey, an English doctor, proved that blood flowed through the human body. In the mid-1600s, an English scientist named Robert Hooke began using a microscope, and he soon discovered cells, the smallest structures of living material.

Beginning in the 1600s, European scientists developed new ideas in chemistry. Chemistry is the study of natural substances and how they change. In the mid-1600s, Robert Boyle, an Irish scientist, proved that all substances are made up of basic elements that cannot be broken down.

European scientists of the 1700s also developed ways to study gases. They discovered hydrogen, carbon dioxide, and oxygen. By 1777, Antoine Lavoisier (AN•twahn luhv•WAH•zee•AY) of France had proven that materials need oxygen to burn. Marie Lavoisier, also a scientist, contributed to her husband's work.

Reading Check Identify According to Newton, what force held the planets in orbit?

The Scientific Revolution

Scientist	Nation	Discoveries
Nicolaus Copernicus (1473–1543)	Poland	Earth orbits the Sun; Earth spins on its axis
Galileo Galilei (1564–1642)	Italy	other planets have moons
Johannes Kepler (1571–1630)	Germany	planets have elliptical orbits
William Harvey (1578–1657)	England	heart pumps blood
Robert Hooke (1635–1703)	England	cells
Robert Boyle (1627–1691)	Ireland	air is made of gases
Isaac Newton (1642–1727)	England	gravity; laws of motion; calculus
Antoine Lavoisier (1743–1794)	France	how materials burn

Understanding Charts

During the Scientific Revolution, scientists made discoveries in many fields, such as astronomy and medicine.

1. What did William Harvey discover?
2. **Identify** Which scientists' discoveries dealt with chemistry?

History Online

Web Activity Visit ca.hss.glencoe.com and click on *Chapter 11—Student Web Activity* to learn more about early science.

Biography



WH7.10.2 Understand the significance of the new scientific theories (e.g., those of Copernicus, Galileo, Kepler, Newton) and the significance of new inventions (e.g., the telescope, microscope, thermometer, barometer).

SIR ISAAC NEWTON 1642–1727

Isaac Newton was born into a farming family on December 25, 1642, in Woolsthorpe, England. His father died before Newton was born. His mother remarried when he was three years old. His new stepfather did not want the boy to live with them, so Newton's grandmother raised him.

Newton earned a degree from Trinity College, part of Cambridge University, in 1664. He planned to work for the university, but from 1664 to 1666, it closed because of the plague. Newton spent the next two years in his hometown. While there, he developed his theory of gravity, invented a new kind of mathematics called calculus, and discovered that white light is made up of all other colors of light.

Newton returned to Cambridge, earned a master's degree, and was appointed to several positions there. His life was very stressful because many scientists questioned his calculations. These criticisms made Newton reluctant to publish his discoveries, but eventually he did. His book *Principia* is considered one of the greatest scientific books ever written. In it, Newton describes his three laws of motion and his ideas about gravity.

During his life, Newton won many awards for his discoveries. In 1705 he became the first scientist ever to be knighted by the English king.



▲ Newton analyzing light rays

**“If I have seen farther,
it is by standing upon
the shoulders of giants.”**

—Isaac Newton, in a letter to Robert Hooke



▲ Trinity College today

Then and Now

Newton's findings were criticized by some scientists of his time. Do research to find a scientific discovery made in the last 50 years that others have questioned or criticized. Describe your findings to the class.



WH7.10.3 Understand the scientific method advanced by Bacon and Descartes, the influence of new scientific rationalism on the growth of democratic ideas, and the coexistence of science with traditional religious beliefs.

The Triumph of Reason

Main Idea Using the scientific method, Europeans of the 1600s and 1700s developed new ideas about society based on reason.

Reading Connection What do modern scientists do in their laboratories? Read to understand how methods of scientific research changed Europeans' understanding of human society in the 1600s and 1700s.

As scientists made new discoveries, European thinkers began to apply science to society. For these thinkers, science had proven that the physical universe followed natural laws. By using their reason, people could learn how the universe worked. Using this knowledge, people also could solve existing human problems and make life better.

Descartes and Reason One of the most important scientific thinkers was the Frenchman René **Descartes** (day•KAHRT). In

1637 he wrote a book called *Discourse on Method*. In this book, Descartes began with the problem of knowing what is true. To Descartes, one fact seemed to be beyond doubt—his own existence. Descartes clarified this idea by the phrase, “I think, therefore I am.”

In his work, Descartes claimed that mathematics was the source of all scientific truth. In mathematics, he said, the answers were always true. This was because mathematics began with simple, obvious principles and then used logic to move gradually to other truths. Today, Descartes is viewed as the founder of modern **rationalism** (RASH•nuh•LIH•zuhm). This is the belief that reason is the chief source of knowledge.

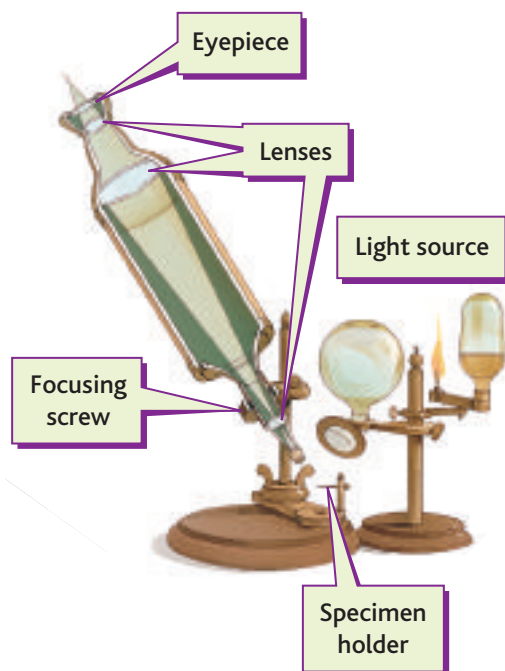
What Is the Scientific Method?

Scientific thought was also influenced by English thinker Francis Bacon, who lived from 1561 to 1626. Bacon believed that ideas based on tradition should be put aside. He developed the **scientific method**, an orderly way of collecting and analyzing evidence. It is still the process used in scientific research today.

The scientific method is made up of several steps. First a scientist begins with careful observation of facts and then tries to find a **hypothesis** (hy•PAH•thuh•suhs), or an explanation of the facts. Through experiments, the scientist tests the hypothesis under all possible conditions to see if it is true. Finally, if repeated, experiments show that the hypothesis is true, and then it is considered a scientific law.

Struggles of Faith Because the Scientific Revolution led many people to rely more on reason than faith, it diminished the power and influence of Christian churches. This was particularly true with the Roman Catholic Church. However, Christianity did not cease to exist. Missionaries continued to

The Microscope



▲ An early microscope used by Robert Hooke to discover cells

gain converts throughout the world, and church membership continued to increase in many areas.

Although scientists supported reason as a way of gaining knowledge, many continued to believe in God. They argued that God had created the universe according to mathematical laws. God then allowed the universe to run itself by these laws. This religious approach is called deism.

Isaac Newton was foremost among the deist scientists. He believed that God had created natural laws that could not be explained in any other way. For example, he believed that the force of gravity was a scientific law. However, he believed it could not exist unless God had made it. In this way, religion coexisted with reason during the Scientific Revolution.

Reading Check Explain What is the scientific method?

The Scientific Method

Observe some aspect of the universe.



Hypothesize about what you observed.



Predict something based on your hypothesis.



Test your predictions through experiments and observation.



Modify hypothesis in light of results.

Understanding Charts

The scientific method is still important today.

1. What is the next step after predictions are tested through experiments and observation?
2. **Conclude** Why is the scientific method necessary to create scientific law?

History online

Study Central Need help understanding the Scientific Revolution? Visit ca.hss.glencoe.com and click on Study Central.

Section 1 Review

Reading Summary

Review the Main Ideas

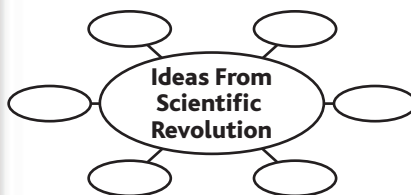
- The thinkers of the ancient world developed early forms of science and passed this knowledge to later generations.
- European interest in science led to new discoveries and ideas about the universe and Earth's place in it.
- The Scientific Revolution led to new discoveries in physics, medicine, and chemistry.
- Descartes invented rationalism, and Bacon developed the scientific method.

What Did You Learn?

1. Who was Copernicus, and what was the heliocentric theory?
2. Describe Francis Bacon's beliefs about scientific reasoning.
4. **Science Connection** Explain Kepler's view of the solar system. **CA 7RC2.2**

Critical Thinking

3. **Summarize** Draw a diagram like the one below. Add details to show some of the new ideas developed during the Scientific Revolution. **CA 7RC2.0**
5. **Analyze** Why did the Church condemn Galileo's astronomical findings? **CA 7RC2.2**
6. **The Big Ideas** Write an essay describing how astronomy changed from the time of Ptolemy to the time of Galileo. **CA 7RC2.3**



7. **Reading** **Taking Notes** List the main ideas in Section 1 and take notes on them. Use these notes to write a short essay on the section. **CA 7WS1.3**

The Ideas of the Enlightenment

Guide to Reading

 **History Social Science Standards**

WH7.10 Students analyze the historical developments of the Scientific Revolution and its lasting effect on religious, political, and cultural institutions.

WH7.11 Students analyze political and economic change in the sixteenth, seventeenth, and eighteenth centuries (the Age of Exploration, the Enlightenment, and the Age of Reason).

Looking Back, Looking Ahead

As you have read, the Scientific Revolution led to new discoveries. At the same time, it also led to many new ideas about government and society.

Focusing on the Main Ideas

- During the 1700s, many Europeans believed that reason could be used to make government and society better. (page 525)
- The Enlightenment was centered in France, where thinkers wrote about changing their society and met to discuss their ideas. (page 528)

Meeting People

- Thomas Hobbes** (HAHBZ)
- John Locke**
- Baron Montesquieu** (MAHN•tuhs•KYOO)
- Voltaire** (vohl•TAR)
- Denis Diderot** (dee•DROH)
- Mary Wollstonecraft** (WUL•stuhn•KRAFT)

Content Vocabulary

- natural law
- social contract
- separation of powers

Academic Vocabulary

- error (EHR•uhr)
- topic (TAH•pihk)
- advocate (AD•vuh•kuht)

Reading Strategy

Summarizing Information Complete a table like the one below showing the major ideas of Enlightenment thinkers.

Thinkers	Ideas



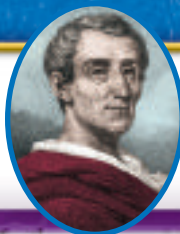
Who & When?



1700

1690

John Locke writes about people's rights



1750

1748

Montesquieu describes separation of powers

1800

1792

Mary Wollstonecraft calls for women's rights





WH7.10.3 Understand the scientific method advanced by Bacon and Descartes, the influence of new scientific rationalism on the growth of democratic ideas, and the coexistence of science with traditional religious beliefs. **WH7.11.4** Explain how the main ideas of the Enlightenment can be traced back to such movements as the Renaissance, the Reformation, and the Scientific Revolution and to the Greeks, Romans, and Christianity. **WH7.11.5** Describe how democratic thought and institutions were influenced by Enlightenment thinkers (e.g., John Locke, Charles-Louis Montesquieu, American founders). **WH7.11.6** Discuss how the principles in the Magna Carta were embodied in such documents as the English Bill of Rights and the American Declaration of Independence.

New Ideas About Politics

Main Idea During the 1700s, many Europeans believed that reason could be used to make government and society better.

Reading Connection What makes people get along with each other? Do they need rules, a strong leader, or to learn to work together? Read to learn how thinkers in Europe answered these questions.

During the 1700s, European thinkers were impressed by scientific discoveries in the natural world. They believed that reason could also uncover the scientific laws that governed human life. Once these laws were known, thinkers said, people could use the laws to make society better.

As the Scientific Revolution advanced, many educated Europeans came to believe that reason was a much better guide than faith or tradition. To them, reason was a “light” that revealed **error** and showed the way to truth. As result, the 1700s became known as the Age of Enlightenment.

European thinkers during the Enlightenment believed they were entering a new era of thought and ideas. Even so, they knew that many of their ideas came from older traditions. The Greeks had looked at nature and seen patterns that could be observed. Greek philosophers, such as Plato, Aristotle, and Socrates, had all stressed reason and analysis. The Enlightenment thinkers were also influenced by the Romans. Many laws and ideas of government had come from the Romans, who had emphasized systems of order.

The use of reason during the Renaissance and the critical thinking of religious writers during the Reformation had helped bring about the Scientific Revolution. In turn, the Renaissance, Reformation, and Scientific



▲ This illustration is from the title page of Hobbes's *Leviathan*. **What sort of government did Hobbes support in *Leviathan*?**

Revolution helped bring about the Enlightenment. Christianity also played a role in shaping Enlightenment ideas. Some writers during the Enlightenment rejected Christianity. They compared their own methods for gaining knowledge to religion in order to determine which method they thought worked best.

During the Enlightenment, political thinkers tried to apply reason and scientific ideas to government. They claimed that there was a **natural law**, or a law that applied to everyone and could be understood by reason. As early as the 1600s, two English thinkers—Thomas Hobbes and John Locke—used natural law to develop very different ideas about how government should work.

Who Was Thomas Hobbes? **Thomas Hobbes** (HAHBZ) wrote about English government and society. During his life, England was torn apart by civil war. Supporters of King Charles I fought those who backed



Primary Source

The Separation of Powers

The ideas of the French writer Baron Montesquieu were influential in shaping British and American ideas about government.



▲ Montesquieu

"Again, there is no liberty, if the judiciary power be not separated from the legislative and executive. Were it joined with the legislative, the life and liberty of the subject would be exposed to arbitrary control; for the judge would be then the legislator. Were it joined to the executive power, the judge might behave with violence and oppression."

—Montesquieu,
The Spirit of Laws

DBQ Document-Based Question

According to Montesquieu, why should judges be independent?

Parliament. Charles I wanted to have absolute, or total, power as king. Parliament demanded a greater role in running England.

The fighting eventually led to Charles's execution. This event shocked Thomas Hobbes, who was a strong supporter of the monarchy. In 1651 Hobbes wrote a book called *Leviathan*. In this work, Hobbes argued that natural law made absolute monarchy the best form of government.

According to Hobbes, humans were naturally selfish and violent. They could not be trusted to make their own decisions. Left to themselves, people would make life "nasty, brutish, and short." Therefore, Hobbes said,

they needed to obey a government that had the power of a leviathan, or sea monster. To Hobbes, this meant the rule of a king because only a strong ruler could give people direction.

Why Is John Locke Important? Another English thinker, **John Locke**, contradicted Hobbes. Locke used natural law to affirm basic democratic ideas such as citizens' rights and the need for government to be answerable to the people.

During Locke's life, another English king, James II, wanted to set up an absolute monarchy against Parliament's wishes. In 1688 war threatened, and James fled the country. Parliament then asked Mary, James's daughter, and her husband, William, to take the throne. This event came to be called the "Glorious Revolution."

In return for the English throne, William and Mary agreed to a Bill of Rights. The document guaranteed all English people basic rights, like those the Magna Carta had given to the nobles. For instance, people had the right to a fair trial by jury and to freedom from cruel punishment for a crime.

In 1690 John Locke explained many of the ideas of the Glorious Revolution in a book called *Two Treatises of Government*. Locke argued against the absolute rule of one person. He stated that government should be based on natural law. This law, said Locke, gave all people from their birth certain natural rights. Among them were the right to life, the right to liberty, and the right to own property.

Locke believed that the purpose of government is to protect these rights. All governments, he said, were based on a **social contract**, or an agreement between rulers and the people. If a ruler took away people's rights, the people had a right to revolt and set up a new government.





WH.7.11.5 Describe how democratic thought and institutions were influenced by Enlightenment thinkers (e.g., John Locke, Charles-Louis Montesquieu, American founders).

JOHN LOCKE

1632–1704

John Locke was born in Somerset, England. His father was a lawyer but also served as a cavalry soldier. Using his military connections, he arranged for his son John to get a good education. Locke studied classical languages, grammar, philosophy, and geometry at Oxford University. To Locke, the courses were not exciting, so he turned to his true interests—science and medicine.

After graduating, Locke went to work for governments in Europe. He continued to study science and philosophy. He particularly liked the work of Descartes. In 1671 Locke began recording his own ideas about how people know things. Nineteen years later, he published his ideas in *An Essay Concerning Human Understanding*. In this book, Locke argued that people's minds are blank when they are born and that society shapes what people think and believe. This idea meant that if people could make society better, it would also make people better.



▲ John Locke

“Law is not to abolish or restrain, but to preserve and enlarge freedom.”

—John Locke, *Two Treatises of Government*



▲ William and Mary being crowned following the Glorious Revolution

In 1683 Locke fled to Holland after the English government began to think his political ideas were dangerous. During that time, he was declared a traitor and was not able to return until after the Glorious Revolution of 1688. It was at that time that he wrote his famous *Two Treatises of Government*. Soon afterward, Locke retired to Essex. There he enjoyed frequent visits from Sir Isaac Newton and other friends until his death in 1704.

Then and Now

Give examples of how Locke's ideas have influenced our lives and ideas.



Who Was Montesquieu? England’s government was admired by thinkers in France. They liked it better than their own absolute monarchy. In 1748 **Baron Montesquieu** (MAHN•tuhs•KYO), a French thinker, published a book called *The Spirit of Laws*.

In this book, Montesquieu said that England’s government was the best because it had a separation of powers.

Separation of powers means that power is divided among the branches of government: executive, legislative, and judicial. The legislative branch makes the laws, and the executive branch enforces them. The judicial branch interprets the laws. Separating these powers keeps government from becoming too powerful and threatening people’s rights.

Reading Check Explain How did Baron Montesquieu want government organized?

The French Philosophes

Main Idea The Enlightenment was centered in France, where thinkers wrote about changing their society and met to discuss their ideas.

Reading Connection What role do writers play in the United States today? Read on to find out what effect writers had on Europe during the Enlightenment.

During the 1700s, France became the major center of the Enlightenment. As the Enlightenment spread, thinkers in France and elsewhere became known by the French name *philosophe* (FEE•luh•ZAWF), which means “philosopher.” Most philosophes were writers, teachers, journalists, and observers of society.

The philosophes wanted to use reason to change society. They attacked superstition, or unreasoned beliefs. In addition,



Voltaire ▶

▲ During the Enlightenment, upper-class nobles held gatherings of writers, artists, and government officials in their homes to discuss new ideas. **How did the philosophes spread their ideas?**

they also disagreed with Church leaders who opposed new scientific discoveries. The philosophes believed in both freedom of speech and the individual's right to liberty. They used their skills as writers to spread their ideas across Europe.

Who Was Voltaire? The greatest thinker of the Enlightenment was François-Marie Arouet, known simply as **Voltaire** (vohl•TAR). Born in a middle-class family, Voltaire wrote many novels, plays, letters, and essays that brought him fame and wealth.

Voltaire became known for his strong dislike of the Roman Catholic Church. He blamed Church leaders for keeping knowledge from people in order to maintain the Church's power. Voltaire also opposed the government supporting one religion and forbidding others. He thought people should be free to choose their own beliefs. Voltaire, like many philosophes, supported deism.

Who Was Diderot? **Denis Diderot** (dee•DROH) was the French philosophe who did the most to spread Enlightenment ideas. With the help of friends, Diderot published a large, 28-volume encyclopedia. His project, which began in the 1750s, took about 20 years to complete.

The *Encyclopedia* included a wide range of **topics**, such as science, religion, government, and the arts. It became an important weapon in the philosophes' fight against traditional ways. Many articles attacked superstition and supported freedom of religion. Others called for changes that would make society more just and caring.

The Enlightenment and Women The Enlightenment raised questions about the role of women in society. Previously, many male thinkers claimed that women were less important than men and had to be

Primary Source

Natural Rights of Women

Mary Wollstonecraft argued that the natural rights of the Enlightenment should extend to women as well as men.

"In short, in whatever light I view the subject, reason and experience convince me that the only method of leading women to fulfill their peculiar [specific] duties is to free them from all restraint by allowing them to participate in the inherent rights of mankind. Make them free, and they will quickly become wise and virtuous, as men become more so, for the improvement must be mutual."

—Mary Wollstonecraft,
*A Vindication of the Rights
of Woman: With Strictures on
Political and Moral Subjects*



▲ Mary Wollstonecraft

DBQ Document-Based Question

What did Wollstonecraft believe would happen if women were allowed rights?

controlled and protected. By the 1700s, however, women thinkers began calling for women's rights. The most powerful supporter of women's rights was the English writer **Mary Wollstonecraft** (WUL•stuhn•KRAFT). She sought to eliminate inequality in education between men and women. Many people today credit her as the founder of the modern movement for women's rights.

In 1792 Mary Wollstonecraft wrote a book called *A Vindication of the Rights of Woman*. In this work, she claimed that all humans have reason. Because women have reason, they should have the same rights as men. Women, Wollstonecraft said, should have equal rights in education, the workplace, and in political life.

Rousseau's Social Contract By the late 1700s, some European thinkers were starting to criticize Enlightenment ideas. One of these thinkers was Jean-Jacques Rousseau (zhahn zhahk ru•SOH).

Rousseau claimed that **advocates** of the Enlightenment relied too much on reason. Instead, people should pay more attention to their feelings. According to Rousseau, human beings were naturally good, but civilized life corrupted them. To improve themselves, he thought people should live simpler lives closer to nature.



▲ Rousseau

In 1762 Rousseau published a book called *The Social Contract*. In this work, Rousseau presented his political ideas. A workable government, he said, should be based on a social contract. This is an agreement in which everyone in a society agrees to be governed by the general will, or what society as a whole wants.

Reading Check **Compare and Contrast**
Compare Voltaire's ideas to those of Rousseau.

History **online**

Study Central Need help understanding the Enlightenment? Visit ca.hss.glencoe.com and click on Study Central.

Section 2 Review

Reading Summary

Review the Main Ideas

- In the 1700s, many Europeans thought reason could make government and society better. Hobbes, Locke, and Montesquieu developed ideas about how to improve government.
- Enlightenment thinkers, such as Voltaire, Diderot, and Rousseau, described ways to make society better.

What Did You Learn?

1. Who were the French philosophes?
2. What was the *Encyclopedia*, and what message did it attempt to deliver to its readers?
4. **The Big Ideas** Why did Enlightenment thinkers believe that reason could be used to make government and society better? **CA 7RC2.3**

Critical Thinking

3. **Organizing Information**
Draw a chart to list the thinkers of the Enlightenment and their accomplishments. **CA 7RC2.0**

Thinker	Accomplishments

5. **Conclude** Which of the Enlightenment thinkers discussed in this section do you think had the most impact on modern society? Explain your answer. **CA HI.2**
6. **Civics Link** Describe how beliefs about people and government during the Enlightenment are reflected in our government today. **CA HI.2**

Section

3

Politics and the Enlightenment

Guide to Reading

Looking Back, Looking Ahead

You have learned how people during the Scientific Revolution and the Enlightenment emphasized reason. This concept continues to impact our world today.

Focusing on the **Main Ideas**

- Many of Europe's monarchs who claimed to rule by the will of God tried to model their countries on Enlightenment ideas. (page 532)
- The American and French people staged revolutions based on Enlightenment ideas. (page 534)
- The ideas of the Enlightenment continue to influence the world today. (page 539)

Meeting People

Louis XIV (LOO•ee)
 Frederick II
 Catherine II
 George Washington
 Thomas Jefferson

Locating Places

Prussia (PRUH•shuh)
 Austria (AWS•tree•uh)
 St. Petersburg (PEE•tuhrz•BUHRG)

Content Vocabulary

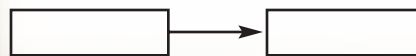
absolutism (AB•suh•LOO•TIH•zuhm)
 representative government (REH•prih•ZEHN•tuh•tihv)
 constitution (KAHN•stuh•TOO•shuhn)
 popular sovereignty (SAH•vuh•ruhn•tee)
 estate (ih•TAYT)
 bourgeoisie (BURZH•WAH•ZEE)

Academic Vocabulary

tension (TEHN•shuhn)

Reading Strategy

Cause and Effect Complete a cause-and-effect diagram showing how Enlightenment ideas led to the American Revolution and the French Revolution.



History Social Science Standards

WH7.11 Students analyze political and economic change in the sixteenth, seventeenth, and eighteenth centuries (the Age of Exploration, the Enlightenment, and the Age of Reason).



Where & When?



1650

1643
 Louis XIV becomes king

1750

1740
 Frederick the Great becomes Prussia's king

1850

1776
 American Revolution begins

1789
 French Revolution begins





The Age of Absolutism

Main Idea Many of Europe’s monarchs who claimed to rule by the will of God tried to model their countries on Enlightenment ideas.

Reading Connection If you were given the chance to be a leader, how would you treat the people you ruled? As you read, think about the power of Europe’s kings and queens during the 1600s and 1700s.

During the 1600s and 1700s, many European thinkers favored limits on government power. However, powerful kings and queens ruled most of Europe. This system was known as **absolutism** (AB•suh•LOO•TIH•zuhm). In this system, monarchs held absolute, or total, power. They claimed to rule by divine right, or by the will of God. This meant that rulers did not answer to their people, but rather to God alone.

However, as the Enlightenment spread, many of Europe’s absolute rulers turned to philosophes for help in making their governments work better. At the same time,

however, they did not want to lose any of their power. Historians used to call these rulers enlightened despots. Despots are rulers who hold total power.

Louis XIV: France’s Sun King During the 1600s, France was one of Europe’s strongest nations. In 1643 **Louis XIV** (LOO•ee) came to the throne. As king, Louis XIV was the most celebrated absolute monarch. His reign of 72 years—the longest in European history—set the style for Europe’s kings and queens. Louis was known as the Sun King, the source of light for all of his people.

Louis relied on a bureaucracy, but he was the source of all political authority in France. He is said to have boasted, “I am the State.” Louis’s army fought and won wars to expand France’s territory, but these conflicts were costly in money and soldiers to France. The king’s constant wars and excessive spending weakened France and the monarchy.

Frederick the Great During the 1600s and 1700s, Germany was a collection of over 300 separate states. Of these states, two—**Prussia** (PRUH•shuh) and **Austria** (AWS•tree•uh)—became great European powers.

The most famous Prussian ruler was **Frederick II**, also called Frederick the Great. He ruled from 1740 to 1786. As Prussia’s king, Frederick strengthened the army and fought wars to gain new territory for Prussia. He also tried to be an enlightened ruler. He supported the arts and learning and tried to carry out enlightened reforms. He permitted his people to speak and publish more freely. He also consented to greater religious toleration.

Austria’s Hapsburg Rulers By the 1700s, the other powerful German state, Austria, ruled a large empire of many different



▲ Louis XIV shows the plans for his palace at Versailles. **Why is Louis XIV important?**



Using Geography Skills

1. **Movement** Which state did Prussia acquire between 1700 and 1720?
2. **Movement** During which of the periods shown did Austria expand its territory the most?

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Frederick the Great



Joseph II

peoples, languages, and cultures. This vast Austrian empire spread over much of central and southeastern Europe. It was ruled by a family known as the Hapsburgs.

In 1740 a young Hapsburg princess named Maria Theresa became Austria's ruler. Energetic and talented, Maria Theresa worked hard to improve the lot of Austria's serfs, who worked for the nobles. She also tried to make government work better.

After Maria Theresa died in 1780, her son, Joseph II, became ruler. Joseph II admired Enlightenment philosophies. He freed the serfs, made land taxes equal for nobles and farmers, and allowed books to be published freely. Despite his efforts, most of Joseph's reforms failed. The nobles opposed Joseph's changes, and he was forced to back down. However, the former serfs, now farmers, were allowed to keep their freedom.

Russia's Peter I and Catherine II To the east of Austria stretched the vast empire of Russia. As you read previously, Russia was ruled by all-powerful rulers known as czars. One of the most powerful czars was Peter I, also known as Peter the Great. During his reign from 1689 to 1725, Peter tried to make Russia into a strong and up-to-date European power. He began reforms to make the government work more smoothly.

Peter also improved Russia's military and expanded Russia's territory westward to the Baltic Sea. In 1703 he founded a city called **St. Petersburg** (PEE • tuhrz • BUHRG) in this area. A few years later, Russia's capital was moved to St. Petersburg from Moscow.

After Peter died, conflict erupted among Russia's nobles. Then, in 1762 a German princess named **Catherine II** came to the





WH7.11.5 Describe how democratic thought and institutions were influenced by Enlightenment thinkers (e.g., John Locke, Charles-Louis Montesquieu, American founders). **WH7.11.6** Discuss how the principles in the Magna Carta were embodied in such documents as the English Bill of Rights and the American Declaration of Independence.

throne of Russia. Early in her reign, Catherine was devoted to Enlightenment ideas. She studied about and wrote letters to the philosophes. She even considered freeing the serfs, but a serf uprising changed her mind. In the end, she allowed the nobles to treat the serfs as they pleased.

Under Catherine, Russia gained even more land and increased its power in Europe. As a result, Catherine became known as “the Great.” However, by 1796, the year Catherine died, the ideas of liberty and equality had spread across Europe. These ideas seriously threatened the rule of powerful kings and queens.

Reading Check Explain How did the ideas of absolute monarchs conflict with the ideas of Enlightenment thinkers?

Revolution and Enlightenment

Main Idea The American and French people staged revolutions based on Enlightenment ideas.

Reading Connection Do you like to make your own decisions, without someone else telling you what to do? Read to find out why the American colonies wanted to make decisions without British interference.

Previously, you learned that Spain and Portugal built colonies in the Americas in the 1500s. Beginning in the 1600s, the English began setting up their own colonies in the Americas. While the Spanish had settled in the Caribbean, Mexico, and South America, England’s colonies were primarily in North America.

The English Settle in America English settlers came to North America for many reasons. Merchants set up some English colonies to make money. Others were set up by people who wanted religious freedom.

England’s colonies grew rapidly because of economic problems in England. Many people in England wanted to move to America because their landlords had evicted them from their farms. In America, they had a chance to own land for themselves. Still others came because they were unemployed and needed jobs.

By the early 1700s, the English had created colonies along the coast of North America. These colonies had different societies, but they had one thing in common: they wanted to govern themselves.

Self-Government in America The tradition of self-government began early in the English colonies. To attract more settlers, the head of the Virginia Company, an English joint-stock company, gave the colonists in Virginia the right to elect burgesses. Burgesses were representatives



◀ Russia grew powerful under Peter the Great. **How did Peter try to make Russia a European power?**



Catherine the Great studied Enlightenment ideas. ▶

chosen from among the men who owned land. The first House of Burgesses met in 1619. It was patterned after the English Parliament and voted on laws for the Virginia colony.

The House of Burgesses set an example for **representative government** (REH•prih•ZEHN•tuh•tihv), or a government in which people elect representatives to make laws and conduct government. It was not long before other colonies set up their own legislatures as well.

A year after the Virginia House of Burgesses met, a group of Puritans called the Pilgrims arrived in North America. They began their own tradition of self-government. Before going ashore, the Pilgrims signed an agreement called the Mayflower Compact. They agreed to rule themselves by choosing their own leaders and making their own laws.

Over the years, several of the English colonies drew up **constitutions** (KAHN•stuh•TOO•shuhnz), or written plans of government. These documents let the colonists elect assemblies and protected their rights.

The Road to War For many years, Great Britain allowed the American colonies to run their own local affairs. Between 1756 and 1763, however, the French and British fought for control of the Americas. The British won, but at great financial expense. When the British decided to impose new taxes on the American colonies to pay for the war, the colonists became frustrated. The colonists believed that only their local assemblies had the right to impose taxes.

This conflict eventually led to violence, more taxes, harsher laws, and rising **tension** between the two sides. Finally, in September 1774, delegates from 12 colonies met in Philadelphia. They called themselves the First Continental Congress. The Congress



Using Geography Skills

- 1. Location** In general, where were fishing and whaling industries located?
- 2. Human/Environment Interaction** What was a major crop in Virginia and Maryland?

spoke out against various British policies and called for their repeal.

Colonial leaders, however, continued to debate about what to do. Some, like George Washington of Virginia, hoped to settle the

differences with Great Britain. Others, like Samuel Adams of Massachusetts and Patrick Henry of Virginia, wanted the colonies to become independent.

Before the colonists could decide what to do, fighting broke out in Massachusetts. The British set out to destroy a store of weapons at Concord. On the way there, they encountered colonial troops at Lexington and fought the first battle of the American Revolution.

In May 1775, the Second Continental Congress met in Philadelphia. **George Washington** was named head of a new colonial army. The Congress then tried again to settle their differences with Great Britain.

They appealed to King George III, who refused to cooperate. More and more Americans began to think that independence was the only answer.

The Declaration of Independence On July 4, 1776, the Congress issued the Declaration of Independence. Written by **Thomas Jefferson** of Virginia, the Declaration stated that the colonies were separating from Great Britain and forming a new nation, the United States of America.

In the Declaration, Jefferson borrowed the ideas of John Locke to explain why the colonists were founding a new nation.

Primary Source

The Declaration of Independence

On July 4, 1776, Congress approved the Declaration of Independence. The preamble—the first part of the document—explains Congress’s reason for issuing the declaration:

“When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another. . . . they should declare the causes which impel them to the separation.”

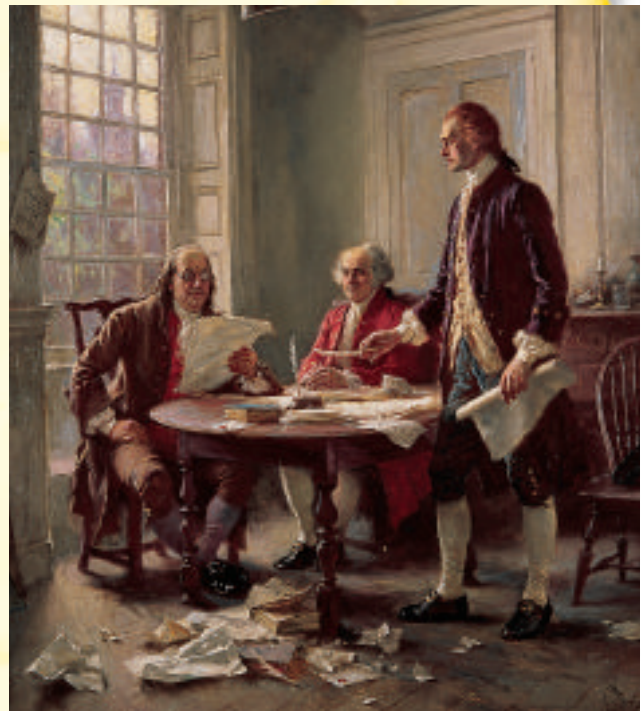
The document also explained that people have certain basic rights:

“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.”

—Declaration of Independence, July 4, 1776

DBQ Document-Based Question

Why do you think the Congress thought they had to issue a written declaration of independence?



▲ Benjamin Franklin, John Adams, and Thomas Jefferson, shown left to right, worked together to write the Declaration of Independence.



▲ The American leaders who met in Philadelphia in 1787 and wrote the United States Constitution were some of the nation's greatest political minds. **What sort of system of government did the Constitution create?**

Previously, you learned about Locke's idea that people have the right to overthrow governments that violate their rights. The Declaration stated that "all men are created equal" and have certain God-given rights. It said that King George III had violated colonists' rights, so they had the right to rebel.

The Declaration also drew from earlier English documents, such as the Magna Carta and the English Bill of Rights. Both documents established the idea that governments are not all-powerful and that rulers had to obey the laws and treat citizens fairly.

The United States Constitution For many years, the colonists fought to obtain their freedom. In 1783 Great Britain finally recognized American independence. At first the United States was a confederation, or a loose union of independent states. Its plan of government was a document called the Articles of Confederation. The Articles created a national government, but the states held most powers. It soon became clear that the Articles were too weak to deal with the new nation's problems.

In 1787, 55 delegates met in Philadelphia to change the Articles. Instead, they decided

to write a constitution for an entirely new national government. The new United States Constitution set up a federal system in which powers were divided between the national government and the states. Following the ideas of Montesquieu, power in the national government was divided between executive, legislative, and judicial branches. A system called checks and balances enabled each branch to limit the powers of the other branches.

Under the Constitution, the United States was a republic with an elected president instead of a king. Elections held in 1789 made George Washington the first president of the United States. That same year, a Bill of Rights was added to the U.S. Constitution. The Bill of Rights set out certain rights the government could not violate. These rights included freedom of religion, speech, and press, and the right to trial by jury.

The U.S. Constitution was also shaped by Enlightenment principles. One of these is **popular sovereignty** (SAH•vuh•ruhn•tee), or the idea that government receives its powers from the people. Another is limited government, or the idea that a government may use only those powers given to it by the people.

The French Revolution Begins The same Enlightenment ideas that led to the American Revolution also influenced France. In the 1700s, French kings ruled with absolute power. Nobles had many privileges and lived in great wealth. Most people, however, were poor, had little education, and struggled to make a living.

The French people were divided into three **estates** (ihs•TAYT), or classes. The First Estate was the Catholic clergy, or church officials. They did not pay taxes, and they received money from church lands. The Second Estate was the nobles. They filled the highest posts in government and the military. Like the clergy, the nobles were free from taxes. They lived in luxury at the king's court and owned large areas of land.

Everyone else in France belonged to the Third Estate. At the top of this group was the

bourgeoisie (BURZH•WAH•ZEE), or the middle classes. They included merchants, bankers, doctors, lawyers, and teachers. Next were the city workers—artisans, day laborers, and servants. At the bottom were the peasants, who made up more than 80 percent of the French people.

Members of the Third Estate were excluded from government affairs, but they paid the country's taxes. As Enlightenment ideas about freedom and justice spread, the Third Estate came to resent more and more the privileges of the nobles and clergy.

In 1789, the members of the Third Estate decided they had had enough. They had seen the British colonists in America revolt and gain their freedom. Many members of the Third Estate were aware of the American Declaration of Independence. They decided to hold an assembly to design

The Way It Was

Focus on Everyday Life

Music of the Enlightenment The 1700s was one of the greatest musical periods in history. Before this time, almost all music was religious in nature and was limited to church performances. During the Enlightenment, music was played in theaters for the first time, and some of the new pieces were not religious.



▲ A string quartet

Many types of music existed in the 1700s. Sonatas were performed with one instrument and a piano, and string quartets were played with four instruments. Concertos and symphonies were longer and involved an orchestra. Operas were full-scale theatrical performances using vocal and instrumental music.

Baroque music emphasized drama and emotion. Johann Sebastian Bach and George Frederick Handel composed baroque music. Bach composed



WH7.11.5 Describe how democratic thought and institutions were influenced by Enlightenment thinkers (e.g., John Locke, Charles-Louis Montesquieu, American founders).

a new constitution so that they, too, could have rights and privileges. A revolt began, and people around the countryside became terrified.

To calm the people, the assembly passed new laws that ended the privileges of both the clergy and nobles. It also issued the Declaration of the Rights of Man and the Citizen. The Declaration drew Enlightenment ideas from the American Declaration of Independence, which had borrowed from the Magna Carta. The French Declaration transferred the powers of government to the people.

Within a few years, the French people had overthrown their king and established a new government. The French Revolution had begun.

Reading Check Explain Why did the colonists decide to separate from Great Britain and create a new nation?

The Enlightenment's Legacy

Main Idea The ideas of the Enlightenment continue to influence the world today.

Reading Connection Think about how you make decisions. Do you consider the various reasons for and against something before deciding? Read to find out how the rationalist approach of the Enlightenment continues today.

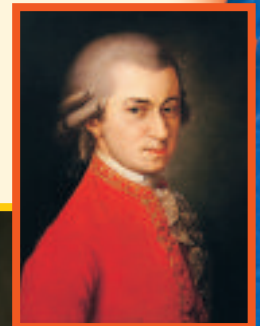
As you have learned, the ideas of the Enlightenment had a profound impact on the world. Enlightenment ideas changed the way people thought and acted and how they viewed the world.

The Enlightenment also changed the course of history in many countries. For some people, it led them to emphasize reason over faith or tradition. For others, the rational approach to knowledge helped them better understand the world but did not break their faith.

many pieces of music that are still popular today. Handel wrote many operas, but he is best known for *Messiah*, an oratorio, or religious composition that mixes voices, orchestra, and organ.

Classical music emerged in the mid-1700s. Classical composers, inspired by the ancient Greeks and Romans, emphasized balance, harmony, and stability. Franz Joseph Haydn and Wolfgang Amadeus Mozart wrote classical music. Haydn's use of instruments made the symphony more popular. Mozart composed a large number of musical pieces that remain popular today.

Wolfgang Amadeus Mozart ▼



▲ Johann Sebastian Bach

Connecting to the Past

1. What is the difference in tone between baroque and classical music?
2. What factors allowed music to thrive during the 1700s?

New Rights in America Enlightenment principles sometimes took many years to change government. For instance, the United States was not as democratic as it is today. When the country was founded, women and African Americans could not vote. Ideas inspired by the Enlightenment, such as equality under the law, eventually led to positive changes. Sometimes these changes came through war. Other times

they resulted from peaceful discussion and demonstrations.

Martin Luther King, Jr., is a prime example of how Enlightenment principles brought about change. King was an important civil rights leader in the United States during the 1950s and 1960s. During this period in U.S. history, many African Americans were treated differently than white people. There were laws in parts of the United States that kept African Americans and white Americans segregated, or separate, from each other.

King believed that all people should have an equal opportunity to make their way in the United States. He also believed that people's success should depend on their abilities. Although King often spoke to people's hearts, his arguments were also based on the Enlightenment ideas of reason and human rights.

Primary Source

Declaration of the Rights of Man and the Citizen

On August 26, 1789, the French National Assembly approved 17 articles that stated their basic freedoms. Three of the articles are listed below.

2. The aim of every political association is the preservation of the natural . . . rights of man. These rights are liberty, property, security, and resistance to oppression [hardship].
9. Every man being presumed innocent until he has been proven guilty, . . .
11. The free communication of ideas and opinions is one of the most precious of the rights of man; every citizen can then freely speak, write, and print. . . .

—Declaration of the Rights of Man and the Citizen (August 1789)



▲ Declaration of the Rights of Man and the Citizen

DBQ Document-Based Question

Which freedoms do Articles 2, 9, and 11 protect?

Human Rights The idea of human rights is a concern of people throughout the world today. Many countries came together after World War II to create an international organization called the United Nations. This organization was formed to encourage countries to settle disagreements peacefully and to support human rights worldwide. The United Nations sends representatives throughout the world to try to accomplish these goals.

Generally, people in the United States today try to solve problems through the democratic process rather than through force. Americans have not always succeeded in resolving their differences peacefully, but there is widespread agreement that a democratic government that respects individual rights and freedoms is the best form of government. This is an Enlightenment idea.

In many other countries, the government leaders are changed only through

violence. This was the case in ancient Rome and in France during the French Revolution. In the United States, and in many other countries today, change in leadership occurs through a peaceful election process.

Technology and Trade The Enlightenment principle of applying rationalism to science and technology is still important today. Many great discoveries have been generated by utilizing the scientific method. Examples of important inventions include automobiles, telephones, electrical appliances, airplanes and spaceships, computers, and many new medicines to fight diseases.

One reason so many new technologies have been developed is capitalism—an economic system where people can own private

property and run their own businesses. Today capitalism is one of the most important economic systems in the world. Companies in many different countries compete with each other. Trade between countries is greater than ever before.

When Columbus set sail hoping to find a new trade route to China, he had no idea he was helping launch the Age of Exploration. Similarly, the Age of Exploration helped begin an economic revolution that furthered the rise of capitalism. Over 500 years ago, exploration, trade, and an interest in science and discovery began to build the world that we live in today.

Reading Check Explain How did Martin Luther King, Jr., use Enlightenment principles?

Section 3 Review

History online
Study Central Need help understanding the legacy of the Enlightenment? Visit ca.hss.glencoe.com and click on Study Central.

Reading Summary

Review the Main Ideas

- In the 1700s, Europe was ruled by absolute monarchs, several of whom tried to implement some reforms based on Enlightenment ideas.
- The ideas of the Enlightenment helped to cause revolutions in America and in France and also influenced the U.S. Constitution.
- The Enlightenment led to a widespread belief in democracy and human rights and to a commitment to science and reason that continues to shape the world today.

What Did You Learn?

1. What was absolutism?
2. What is representative government, and what was one of the first examples?
5. **Describe** How did absolute rulers use the ideas of the Enlightenment to better or change their countries? Were they successful? **CA 7RC.0**

Critical Thinking

3. **Sequencing Information** Create a chart like the one below. Fill in information about where and when each of the rulers reigned.

Louis XIV	Frederick II	Maria Theresa	Peter I & Catherine II

4. **The Big Ideas** How did the ideas and events of the Enlightenment influence the Declaration of Independence? **CA HI.2**
6. **Summarize** Write an essay summarizing the effect of Enlightenment ideas on Europe. **CA 7WA.2.5**
7. **Analysis Conclude** Write a letter to the editor giving your opinion on either the Declaration of Independence, or the French Declaration of the Rights of Man and the Citizen. Describe the political ideas in the document and state whether you agree or disagree with those ideas. **CA HR.5**

Analyzing Primary Sources



WH7.11.5 Describe how democratic thought and institutions were influenced by Enlightenment thinkers (e.g., John Locke, Charles-Louis Montesquieu, American founders).

The Age of Enlightenment

The philosophers of the Enlightenment wanted to build a better society than the one in which they lived. Many of their essays described how government should work and how people should treat one another.

Read the passages on pages 542 and 543, and answer the questions that follow.



▲ Jean-Jacques Rousseau

Reader's Dictionary

sovereign (SAH•vuh•ruhn): supreme

multitude: great number of people

oblige (uh•BLYJ): require

mutual: shared; common

body politic: political body

premises (PREH•muhs•ehs): place; location

indifferent: unconcerned

divulging (duh•VUHLJ•ihng): revealing

The Social Contract

Jean-Jacques Rousseau published *The Social Contract* in 1762. The piece discussed people's relationship to government.

... [Each] person, in making a contract, as it were, with himself, finds himself doubly committed, first, as a member of the **sovereign** body in relation to individuals, and secondly as a member of the state in relation to the sovereign. . . .

As soon as the **multitude** is united thus in a single body, no one can injure any one of the members without attacking the whole, still less injure the whole without each member feeling it. Duty and self-

interest thus equally **oblige** the two . . . parties to give each other **mutual** aid. . . .

For every individual as a man may have a private will contrary to, or different from, the general will that he has as a citizen. His private interest may speak with a very different voice from that of the public interest; . . . and . . . he might seek to enjoy the rights of a citizen without doing the duties of a subject. The growth of this kind of injustice would bring about the ruin of the **body politic** . . .

There is often a great difference between [individual will] and the general will; the general will studies only the common interest while the [individual will] studies private interest.

—Jean-Jacques Rousseau, *The Social Contract*



Encyclopedia

The philosophes were interested in acquiring knowledge. One of them, Denis Diderot, led a team in compiling a 28-volume encyclopedia. In defining the word encyclopedia, Diderot focuses on how important it is to share knowledge.

ENCYCLOPÉDIE, f. n. (*Philosophy*). This word means the *interrelation of all knowledge*. . . . In truth, the aim of an encyclopédie is to collect all the knowledge scattered over the face of the earth, to present its general outlines and structure to the men with whom we live, and to transmit this to those who will come after us, so that the work of past centuries may be useful to the following centuries, that our children, by becoming more educated, may at the same time become more virtuous and happier. . . .

It would be desirable for the government to authorize people to go into the factories and shops, to see the craftsmen at their work, to question them, to draw the tools, the machines, and even the **premises**. . . .

I know that this feeling is not shared by everyone. These are narrow minds, deformed souls, who are **indifferent** to the fate of the human race and who are so enclosed in their little group that they see nothing beyond its special interest. . . . What is the good of **divulging** the knowledge a nation possesses, its private transactions, its inventions, its

industrial processes, its resources, its trade secrets, its enlightenment, its arts, and all its wisdom? Are not these the things to which it owes a part of its superiority over the rival nations that surround it? This is what they say . . . instead of enlightening the foreigner, we could spread darkness over him . . . so that we could dominate more securely over everyone? These people do not realize that they occupy only a single point on our globe and that they will endure only a moment in its existence. To this point and to this moment they would sacrifice the happiness of future ages and that of the entire human race.

—Denis Diderot, "Encyclopédie"



▲ Nobles discuss Enlightenment ideas.

DBQ Document-Based Questions

The Social Contract

1. What is the difference between general will and the individual will?
2. Why is it important for the individual to keep in mind the general will, instead of concentrating only on the individual will?

Encyclopedia

3. According to Diderot, why is it important to create the *Encyclopédie*?

4. Why did some people say it was a bad idea to create the *Encyclopédie*? How did Diderot respond to this?

Read to Write

5. Rousseau argues that people should not let their individual interests interfere with the interests of the common good. Would Diderot have agreed with Rousseau? Give examples from both passages that prove your opinion.

CA HR5

Chapter 11 Assessment

Standards WH7.10 & WH7.11

Review Content Vocabulary

Write the key term that completes each sentence.

- constitution
 - the scientific method
 - separation of powers
 - absolutism
 - theory
 - natural law
- Louis XIV and Frederick the Great ruled under the system of _____.
 - Locke and Hobbes used _____ to help develop their ideas.
 - Francis Bacon developed _____.
 - Scientists develop a(n) _____ to explain how or why something happens.
 - Montesquieu believed _____ was needed for good government.
 - A(n) _____ is a written plan for government.

Review the **Main Ideas**

Section 1 • The Scientific Revolution

- How did European thinkers develop new ideas?
- How did the interest in astronomy lead to new information about the earth?
- In what areas were significant scientific discoveries made?

Section 2 • The Ideas of the Enlightenment

- How did Thomas Hobbes and John Locke disagree?
- Who were the philosophes, and what did they want to accomplish?

Section 3 • Politics and the Enlightenment

- How did the Enlightenment affect Europe's rulers?
- What are some of the ways that the ideas of the Enlightenment still affect us today?

Critical Thinking

- Explain** How did Copernicus, Kepler, Galileo, and Newton each add to our understanding of the universe? **CA HI.2.**
- Analyze** How did the ideas of the Enlightenment influence the rise of democracy? **CA 7RC2.3**

Geography Skills

- Movement** In what years did Austria gain the most territory? **CA CS3.**
- Human/Environment Interaction** What natural features probably helped the Austrian Empire increase its ability to trade as it grew? **CA CS3.**
- Location** Use a map of modern-day Europe to find out which countries made up part of the Austrian Empire. **CA CS3.**



Read to Write

19. **The Big Ideas Writing Research Reports**
Write a brief essay describing Montesquieu's beliefs about government and explaining how they are reflected in the U.S. Constitution. Use your local library and the Internet to find information to support your essay. **CA 7WA2.3**
20. **Using Your FOLDABLES** Use the information from your foldable to write a short summary of the main ideas of the Enlightenment and the Scientific Revolution. Use this summary to help you write an essay explaining how these ideas affected society. **CA 7WA2.5**

Using Academic Vocabulary

Read each of the following sentences. Change the underlined word in each sentence to make sure that it is grammatically correct.

21. During the Renaissance, many scientists and thinkers used a humanist approached in their work.
22. There was more than one topics covered in Denis Diderot's *Encyclopedia*.
23. Mary Wollstonecraft was an advocating for women's rights.
24. The desire for freedom and independence led to many tension moments between England and the colonies in North America.

Building Citizenship

25. **Making Connections** Mary Wollstonecraft is often considered the founder of the modern women's rights movement. Use your local library to find information about Wollstonecraft's impact on women's rights. Write an essay describing her influence during the Enlightenment and today. **CA 7WA2.3 CA HI2.**

Linking Past and Present

26. **Analyze** The music, art, and literature of the Enlightenment reflected people's views during that time. Write an essay describing how present-day music, art, and literature reflect people's feelings about society. Give examples to support your opinion.

CA 7WA2.0

Reviewing Skills

27. **Reading Skill Taking Notes** Create a chapter study guide by making a two-column chart that lists each main idea and details that support that main idea. **CA 7WS1.3**
28. **Analysis Skill Recognizing Change** Using information from the chapter, as well as your own research, write an essay discussing the ideas of Enlightenment thinkers and their effect on the rise of democracy in Europe and America. **CA 7WA2.3 CA HI3.**



Standards Practice

Select the best answer for each of the following questions.


29. The Enlightenment thinker Baron Montesquieu believed that a government would not become too powerful if the government
- A was ruled by an honorable king.
B obeyed Parliament's laws.
C had a separation of powers.
D was based on natural law.
30. John Locke's belief that all people have certain natural rights influenced the writing of which important document?
- A the Magna Carta
B the Declaration of Independence
C the English Bill of Rights
D the Mayflower Compact

Unit 3 Review

Making Comparisons

Compare early modern times by reviewing the information below. Can you see how the people who lived during this period had lives that were very much like yours?



	 Renaissance and Reformation Chapters 7 & 8	 The Americas Chapter 9	 Age of Exploration Chapter 10	 Age of Enlightenment Chapter 11
Where did the events in these chapters take place?	<ul style="list-style-type: none"> Europe 	<ul style="list-style-type: none"> North America Central America Caribbean islands South America 	<ul style="list-style-type: none"> Western Europe North America Africa South Asia Southeast Asia 	<ul style="list-style-type: none"> Europe North America
Who were some important people?	<ul style="list-style-type: none"> Leonardo da Vinci A.D. 1452–1519 Martin Luther A.D. 1483–1546 Queen Isabella (Spain), ruled A.D. 1474–1504 	<ul style="list-style-type: none"> Pachacuti, ruled A.D. 1438–1471 Montezuma II, ruled A.D. 1502–1520 Atahualpa, ruled A.D. 1525–1533 	<ul style="list-style-type: none"> Christopher Columbus A.D. 1451–1506 Queen Elizabeth I (England), ruled A.D. 1558–1603 	<ul style="list-style-type: none"> Francis Bacon A.D. 1561–1626 Galileo Galilei A.D. 1564–1642 John Locke A.D. 1632–1704
Where did most people live?	<ul style="list-style-type: none"> City-states (Italy) Commercial cities (London, Paris) Farming villages 	<ul style="list-style-type: none"> Hunter-gatherers Farming villages Cities (Cuzco and Tenochtitlán) 	<ul style="list-style-type: none"> Port cities (Lisbon, Amsterdam) Overseas settlements and plantations 	<ul style="list-style-type: none"> Cities Farming villages
What were people's beliefs?	<ul style="list-style-type: none"> Northern Europe: Protestant Southern Europe: Roman Catholic Jewish communities 	<ul style="list-style-type: none"> Traditional Native American religions 	<ul style="list-style-type: none"> Europeans spread Christianity overseas 	<ul style="list-style-type: none"> Deism introduced in Europe and America

Renaissance and Reformation

Chapters 7 & 8

What was government like?

- Italian city-states ruled by wealthy families
- Most European areas ruled by kings, princes, and nobles



The Americas

Chapter 9

- Local groups ruled by chiefs and councils
- Powerful emperors or kings (Maya, Aztec, and Inca)



Age of Exploration

Chapter 10

- Monarchies
- Control of overseas territories through colonies



Age of Enlightenment

Chapter 11

- Divine right of kings
- English king's powers are limited, representative government spreads
- United States founded as a republic

What role did language and writing play?

- Printed books helped spread knowledge
- Vernacular used in Protestant worship
- Latin remains language of Catholic Church



- Native Americans spoke hundreds of languages
- Mayan and Aztec languages written in hieroglyphics
- Inca had no written language

- Meeting of cultures meant spread of knowledge about languages
- European languages brought by settlers to overseas colonies

- Studied ancient Greek and Roman texts as well as ideas of Jews and Muslims
- Developed new ideas about science and philosophy



What contributions were made?

- Furthered education
- Created lifelike art
- Different religions existed side by side

- Developed trade networks and methods of farming and building



- Used new technologies to explore the world
- Mercantilism leads to early forms of capitalism

- Reason seen as a way to truth
- General rules developed for scientific study
- New ideas about government

How are we affected today?
Can you add any examples?

- Renaissance and Reformation Europeans passed on practice of printing books

- Native Americans passed on foods (corn, chocolate, potatoes)

- Foods and supplies available through worldwide trade

- Supported rights that we enjoy today
- Scientific tools (microscope, telescope) and vaccines for disease developed