

**CHAPTER**  
**22**

**Section 1**

**LESSON PLAN** *The Scientific Revolution* pages 542–550

### Chapter 22 Overview

- \_\_\_\_\_ Have students name all the places starred as Enlightenment centers on the Chapter Opener.
- \_\_\_\_\_ Continue the Interact with History activity (PE page 544) by asking if anyone profits when a new idea is suppressed.

### Section 1 Objectives

- 1 To list circumstances that led to the Scientific Revolution.
- 2 To summarize the development of the heliocentric theory and explain why it led to conflict.
- 3 To describe the scientific method and show how Bacon and Descartes advanced this approach.
- 4 To explain Newton's law of gravity.
- 5 To describe the importance of the scientific method in different fields.

### Focus

- \_\_\_\_\_ Use Warm-Up Transparency WT22 to teach about old and new methods of understanding the physical world.
- \_\_\_\_\_ Use Setting the Stage (PE page 545) to highlight the effect of Renaissance and Reformation.

### Instruct

- ✓ \_\_\_\_\_ Assign Section 1 (PE pages 542–569) for reading.
- \_\_\_\_\_ Have students complete the Guided Reading worksheet for Section 1 on page 19 in *In-Depth Resources: Unit 5*.
- \_\_\_\_\_ Discuss "The Roots of Modern Science" (PE pages 545–548).
  - ✓ \_\_\_\_\_ Assign the Geography Application on Three Theories of the Solar System, page 24 in *In-Depth Resources: Unit 5*.
  - \_\_\_\_\_ Discuss "A Revolutionary Model of the Universe" (PE pages 546–547).
  - \_\_\_\_\_ Have students read the excerpt from *The Recantation of Galileo Galilei* on page 31 in *In-Depth Resources: Unit 5*.

## The Spread of Enlightenment Ideas

### Foundations of the Enlightenment

**BACON and DESCARTES:**  
Reason and Logic

**ISAAC NEWTON:**  
Natural Law

**HOBBS and ROUSSEAU:**  
The Social Contract

**JOHN LOCKE:**  
Natural Rights—Life, Liberty, and Property

**VOLTAIRE:**  
Religious Tolerance

**MONTESQUIEU:**  
Separation of Powers

**BECCARIA:**  
Reform of Criminal Justice System

### ENLIGHTENMENT THOUGHT

### Impact of the Enlightenment

Growth of Secular Ideas;  
Importance of Education

Belief in Progress

American and French Revolutions,  
Independence Movements

Declaration of Independence; Rights of Man  
and Citizen; Growth of Individualism

U.S. Bill of Rights and  
Enlightened Monarchies

French, U.S., and Latin  
American Constitutions

Abolishment of Torture and  
Capital Punishment

SHOW THIS PORTION OF O.H.  
AT BEGINNING OF UNIT - TO  
SHOW BACKGROUND!

## Foundations of the Enlightenment

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CHAPTER  
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**GEOGRAPHY APPLICATION: LOCATION**

## Three Theories of the Solar System

**Section 1**

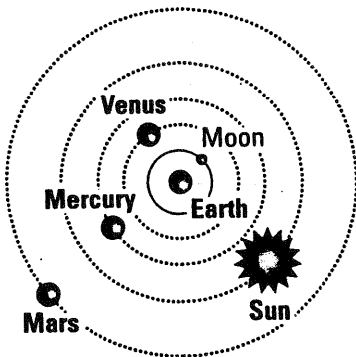
*Directions: Read the paragraphs below and study the illustrations carefully. Then answer the questions that follow.*

In the second century A.D., Claudius Ptolemy, an astronomer who lived in Egypt, claimed that the sun, stars, and other planets revolved around the earth. These ideas were unchallenged nearly 1,300 years until Nicolaus Copernicus, a Polish astronomer, discovered his revolutionary theory about the sun.

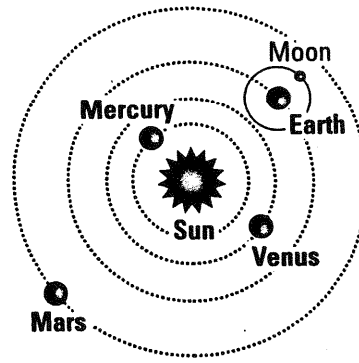
Ptolemy had believed in his geocentric or earth-centered view for several reasons. First, because of gravity all objects were attracted to the earth, which suggested to him that the earth must be the center. Second, he thought that the earth did not move. He showed how an object is thrown in the air and falls in practically the same place. If the earth moved, he theorized, that object should fall in a different place. Even today, these arguments would be difficult to disprove by observation. As a result, Ptolemy's theory remained undisputed for centuries.

During the 1500s, Copernicus did not accept the Ptolemaic view. He became convinced that a different explanation of the solar system existed. After 25 years of observation, Copernicus concluded that the sun was the center of the solar system and that the planets, including the earth, revolved around the sun in "perfect divine circles."

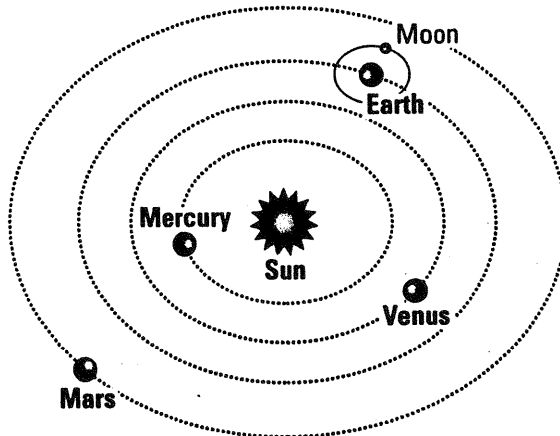
Copernicus's conclusion at first went practically unnoticed. However, in the 1600s a German astronomer, Johannes Kepler, supported Copernicus's belief with mathematics. He also proved that the planets travel in ellipses (ovals), not perfect circles, around the sun. Both Copernicus's and Kepler's breakthroughs laid the foundation of modern day knowledge of the solar system.



**PTOLEMY**



**COPERNICUS**



**KEPLER**

## Interpreting Text and Visuals

1. What object did Ptolemy claim was at the center of the universe? \_\_\_\_\_

2. What object did Copernicus conclude was actually at the center of the universe? \_\_\_\_\_

3. What object is farthest from the center in all three systems? \_\_\_\_\_

4. What object is closest to the earth in all three systems? \_\_\_\_\_

5. According to Ptolemy, where was the sun in relation to Earth and the other planets? \_\_\_\_\_

6. According to Copernicus, what planets are located between the sun and the Earth? \_\_\_\_\_

7. What is the main difference between Kepler's system and the Copernican system? \_\_\_\_\_

8. Compare the way Ptolemy provided proof for his theory with the way Kepler provided proof for his theory. \_\_\_\_\_

Do you think Ptolemy's proof of his beliefs would be acceptable today? Why or why not?


**CHAPTER  
22**

## Section 2

## LESSON PLAN

***The Enlightenment in Europe****pages 551–557***Section 2 Objectives**

- ① To explain Hobbes' and Locke's views on government.
- ② To list important Enlightenment philosophers and concepts.
- ③ To describe women's contributions to the Enlightenment.
- ④ To explain the impact of the Enlightenment on Western civilization.

**Focus**

- \_\_\_\_\_ Use Warm-Up Transparency WT22 to explore Enlightenment ideas about government's base of power.
- \_\_\_\_\_ Have students preview the art in Section 2 to PE page 557 and decide which is the most dramatic.

**Instruct**

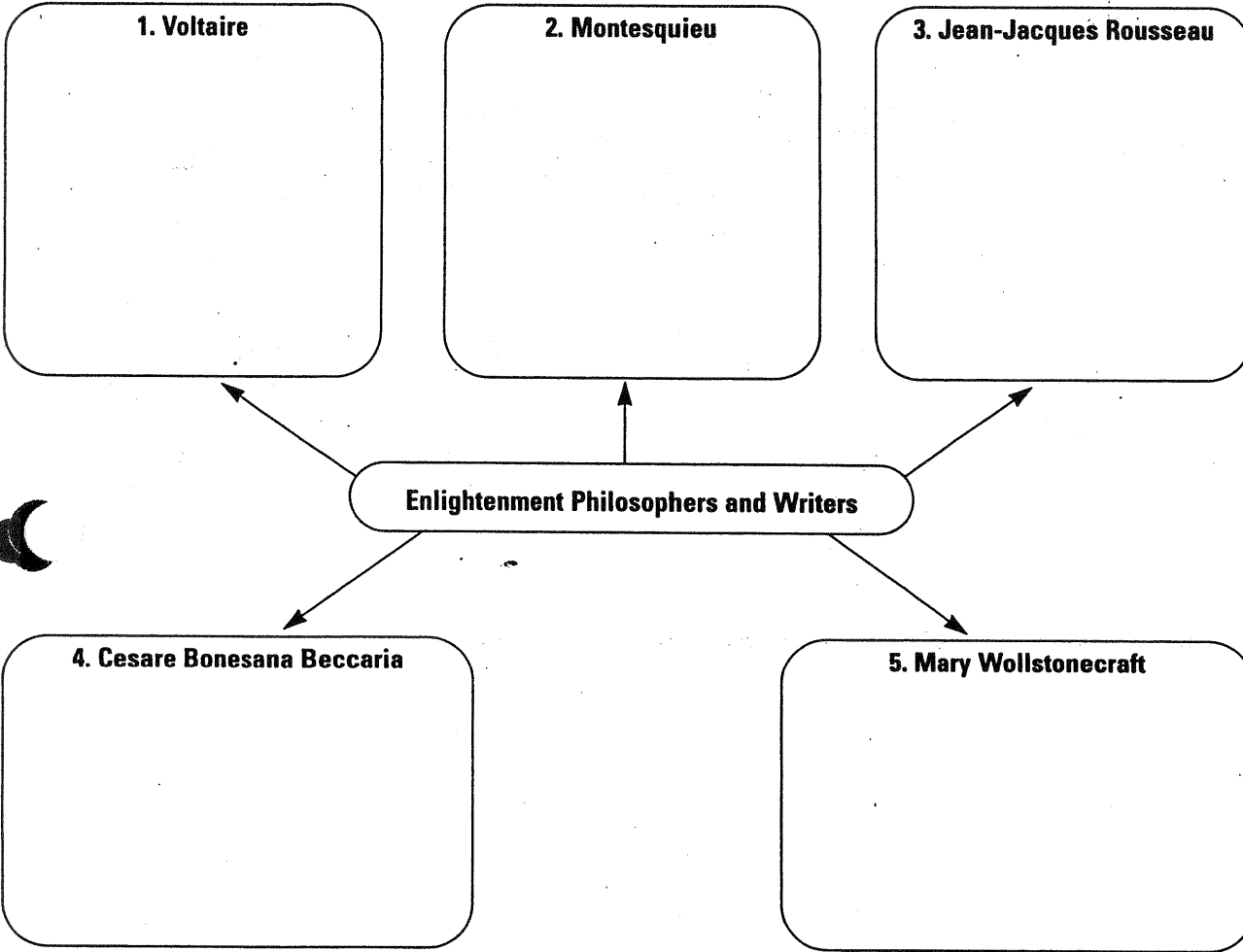
- \_\_\_\_\_ Assign Section 2 (PE pages 551–556) for reading.
- ✓ \_\_\_\_\_ Have students complete the Guided Reading worksheet for Section 2 on page 20 in *In-Depth Resources: Unit 5*.
- ✓ \_\_\_\_\_ Discuss "Two Views on Government" (PE pages 551–552).
- ✓ \_\_\_\_\_ Assign the reading of Locke's *Two Treatises on Government* on page 28 in *In-Depth Resources: Unit 5* and have students discuss his views of slavery and freedom.
- ✓ \_\_\_\_\_ Have students discuss the five concepts that formed the heart of the philosophes' philosophy.
- ✓ \_\_\_\_\_ Discuss "The Philosophes Advocate Reason" (PE pages 552–555).
- ✓ \_\_\_\_\_ Have students read the biography of Baron de Montesquieu on page 35 in *In-Depth Resources Unit 5*.
- ✓ \_\_\_\_\_ Have students read the excerpt from Rousseau's *The Social Contract* on page 27 in *In-Depth Resources: Unit 5* and discuss his ideas of "free" and "right."
- ✓ \_\_\_\_\_ Discuss "Women and the Enlightenment" (PE pages 555).
- ✓ \_\_\_\_\_ Have students read the excerpt from Mary Wollstonecraft's *A Vindication of the Rights of Woman* on page 29 in *In-Depth Resources: Unit 5*.



# GUIDED READING *The Enlightenment in Europe*

## Section 2

**A. Recognizing Facts and Details** As you read this section, fill in the diagram by describing the beliefs of Enlightenment thinkers and writers.



**B. Drawing Conclusions** How did Enlightenment thinkers and writers set the stage for revolutionary movements?

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**C. Perceiving Relationships** On the back of this paper, write a paragraph contrasting Thomas Hobbes's social contract view of government with the political philosophy of John Locke.

PRIMARY SOURCE *from The Social Contract*  
by Jean-Jacques Rousseau

*In The Social Contract, published in 1762, the philosophe—a writer during the 18th century French Enlightenment—Jean-Jacques Rousseau outlined his ideas about individual freedom and obedience to authority. As you read this excerpt, think about Rousseau's argument against the use of force as a means of governing the people.*

### Chapter I—Subject of the First Book

Man is born free; and everywhere he is in chains. One thinks himself the master of others, and still remains a greater slave than they. How did this change come about? I do not know. What can make it legitimate? That question I think I can answer.

If I took into account only force, and the effects derived from it, I should say: "As long as a people is compelled to obey, and obeys, it does well; as soon as it can shake off the yoke, and shakes it off, it does still better; for, regaining its liberty by the same right as took it away, either it is justified in resuming it or there was no justification for those who took it away." But the social order is a sacred right which is the basis of all rights. Nevertheless, this right does not come from nature, and must therefore be founded on conventions. Before coming to that, I have to prove what I have just asserted.

### Chapter III—The Right of the Strongest

The strongest is never strong enough to be always the master, unless he transforms strength into right, and obedience into duty. Hence the right of the strongest, which, though to all seeming meant ironically, is really laid down as a fundamental principle. But are we never to have an explanation of this phrase? Force is a physical power, and I fail to see what moral effect it can have. To yield to force is an act of necessity, not of will—at the most, an act of prudence. In what sense can it be a duty?

Suppose for a moment that this so-called "right" exists. I maintain that the sole result is a mass of inexplicable nonsense. For, if force creates right, the effect changes with the cause: every force that is greater than the first succeeds to its right. As soon as it is possible to disobey with impunity, dis-

obedience is legitimate; and, the strongest being always in the right, the only thing that matters is to act so as to become the strongest. But what kind of right is that which perishes when force fails? If we must obey perforce, there is no need to obey because we ought; and if we are not forced to obey, we are under no obligation to do so. Clearly, the word "right" adds nothing to force: in this connection, it means absolutely nothing.

Obey the powers that be. If this means yield to force, it is a good precept, but superfluous: I can answer for its never being violated. All power comes from God, I admit; but so does all sickness: does that mean that we are forbidden to call in the doctor? A brigand [bandit] surprises me at the edge of a wood: must I not merely surrender my purse on compulsion, but, even if I could withhold it, am I in conscience bound to give it up? For certainly the pistol he holds is also a power.

Let us then admit that force does not create right, and that we are obliged to obey only legitimate powers. In that case, my original question recurs.

*from Jean-Jacques Rousseau, The Social Contract and Discourses and Other Essays, trans. by G.D.H. Cole (E.P. Dutton & Company, Inc., 1950). Reprinted in Peter Gay, ed., The Enlightenment: A Comprehensive Anthology (New York: Simon and Schuster, 1973), 322–325.*

## Discussion Questions

### Recognizing Facts and Details

1. Which did Rousseau believe was better—a government freely formed by the people or one imposed on a people by force?
2. Did Rousseau believe that it was the right of the strongest to rule?
3. **Making Inferences** How would you compare Locke's ideas about government with Rousseau's?





## Section 2

PRIMARY SOURCE *from Two Treatises on Government*  
by John Locke

English philosopher John Locke (1632–1704) attacked absolute monarchy and promoted the concept of government by the people in his most famous work, *Two Treatises on Government*. Published in 1690, his book influenced the ideas of the philosophes Baron de Montesquieu and Jean-Jacques Rousseau as well as the framers of the United States Constitution. At the heart of Locke's argument was his belief that all people are born free and equal, with three natural rights: life, liberty, and property. As you read the following excerpt, think about how Locke defined one of these rights—liberty.

### Of Slavery

22. The *Natural Liberty* of Man is to be free from any Superior Power on Earth, and not to be under the Will or Legislative Authority of Man, but to have only the Law of Nature for his Rule. The Liberty of Man, in Society, is to be under no other Legislative Power, but that established by consent, in the Common-wealth, nor but what the Dominion of any Will, or Restraint of any Law, but what the Legislative shall enact, according to the Trust put in it.

*Freedom* then is not what Sir R. F. tells us, O.A.

[224]. A *Liberty for every one to do what he wasts, to live as he pleases, and not to be-tyed by any Laws: But Freedom of Men under Government*, is, to have a standing Rule to live by, common to every one of that Society, and made by the Legislative Power erected in it; A Liberty to follow my own Will in all things, where the Rule prescribes not; and not to be subject to the inconstant, uncertain, unknown, Arbitrary Will of another Man. As *Freedom of Nature* is to be under no other restraint but the Law of Nature.

23. This *Freedom* from Absolute, Arbitrary Power, is so necessary to, and closely joyned with a Man's Preservation, that he cannot part with it, but by what forfeits his Preservation and Life together. For a Man, not having the Power of his own Life, *cannot*, by Compact, or his own Consent, *enslave himself* to any one, nor put himself under the Absolute, Arbitrary Power of another, to take away his Life, when he pleases. No body can give more Power than he has him-

self; and he that cannot take away his own Life, cannot give another power over it. Indeed having, by his fault, forfeited his own Life, by some Act that deserves Death; he, to whom he has forfeited it, may (when he has him in his Power) delay to take it, and make use of him to his own Service, and he does him no injury by it. For, whenever he finds the hardship of his Slavery out-weigh the value of his Life, 'tis in his Power, by resisting the Will of his Master, to draw on himself the Death he desires.

24. This is the perfect condition of Slavery, which is nothing else, but *the State of War continued, between a lawful Conquerour, and a Captive*. For, if once *Compact* enter between them, and make an agreement for a limited Power on the one side, and Obedience on the other, the State of War and *Slavery* ceases, as long as the Compact endures. For, as has been said, no Man can, by agreement, pass over to another that which he hath not in himself, a Power over his own Life.

### Activity Options

1. **Writing for a Specific Purpose** Paraphrase Locke's definition of liberty in your own words. Then share your definition with classmates.
2. **Recognizing Point of View** In this excerpt, Locke refers to Sir Robert Filmer, an author who promoted the royal view of the basis of governmental power. With a partner, role-play a conversation between Locke and Sir Robert Filmer about freedom and the role of government.

## Baron de Montesquieu

### *Writing the Science of Government*

*"It is necessary by the arrangement of things, power checks power."*—  
Montesquieu, *On the Spirit of Laws* (1748)

Charles-Louis de Secondat, the Baron de Montesquieu, studied politics throughout his life and wrote a huge and exhaustive study of government. One of his key views was that authority should be divided. This idea became popular in England's North American colonies.

In 1689, Montesquieu was born near Bordeaux, France. His family had long served in the military and had good social position. He married a wealthy woman who had a good head for business—so good that he often let her run the family estates. When his uncle died, he became Baron de Montesquieu at age 27 and began serving as a judge.

Montesquieu soon became famous as a writer. The *Persian Letters* appeared in 1721 without identifying him as the author. The book was supposedly written by two Persian travelers who visited France and wrote letters to describe what they saw. In this way, Montesquieu was free to criticize and poke fun at French society. The king, he wrote, was a trickster who "makes people kill one another even when they have no quarrel." The pope he called a "conjurer," or magician. Later, Montesquieu was revealed as the author.

Now well-known, Montesquieu moved to Paris and joined in the luxurious court life there. As a result, his fortune dwindled. The combination of financial need and boredom led him to sell his judgeship. He used the money to take a long tour of Europe. He explored art and science and met leading politicians and writers. He also stayed many months in England studying its government.

Upon returning to France, Montesquieu spent two years writing a book on the English constitution. Then he decided to write a detailed study of government. For years he worked diligently, using as many as six people at a time taking notes. In 1748, after 17 years of reading, writing, and revising, he published *On the Spirit of Laws*. It filled more than 1,000 pages and broke new ground.

Montesquieu attempted to make a science of government. His work reflected Enlightenment ideas that people, using their minds, could under-

stand the world around them. However, he was not a radical who urged rule by the people instead of by kings. He was deeply conservative and hoped to maintain the privileged position of the aristocracy. He believed that the king's power was dangerous but thought that a strong aristocracy could check that authority. He admired England because the strength of its nobles limited the control of the king.

Montesquieu also saw human nature as the same around the world. However, he thought that laws and government depended on many factors, including religion, geography, and climate. Good government requires shaping laws to suit local conditions. He thought it was easier for people to enjoy liberty in a mountainous country like Switzerland or an island like England. Islands protect people from attack by other countries. Harsh conditions in the mountains, he believed, lead people to have a spirit of individualism that promotes liberty.

Montesquieu wanted to make sure that no part of the government grew too strong. The best way to preserve freedom, he said, was to divide authority. The ability to make laws, to carry out laws, and to judge laws should rest in different branches of power.

This idea was adopted in the United States when the Constitution was written. Thus, his ideas took hold in a country with traits similar to those of England and Switzerland. Separated from Europe by a vast ocean, the United States was safe from attack. In their rugged landscape, the American people developed a strong sense of individualism.

### Questions

- 1. Recognizing Facts and Details** How did Montesquieu's circumstances allow him to spend his life writing?
- 2. Drawing Conclusions** Why did Montesquieu think that it was a good idea to have different powers checking each other?
- 3. Perceiving Relationships** How did Montesquieu differ from other writers of the Enlightenment?




CHAPTER  
**22**

## Section 2

PRIMARY SOURCE *from A Vindication of the Rights  
of Woman*  
by Mary Wollstonecraft

*A Vindication of the Rights of Woman, published by the English writer and reformer Mary Wollstonecraft in 1792, is one of the earliest feminist essays. According to this excerpt, how did Wollstonecraft feel about the education of women?*



I have sighed when obliged to confess that either nature has made a great difference between man and man or that the civilization which has hitherto taken place in the world has been very partial. I have turned over various books written on the subject of education, and patiently observed the conduct of parents and the management of schools; but what has been the result?—a profound conviction that the neglected education of my fellow creatures is the grand source of the misery I deplore; and that women, in particular, are rendered weak and wretched by a variety of concurring causes, originating from one hasty conclusion. The conduct and manners of women, in fact, evidently prove that their minds are not in a healthy state; for, like the flowers which are planted in too rich a soil, strength and usefulness are sacrificed to beauty; and the flaunting leaves, after having pleased a fastidious eye, fade, disregarded on the stalk, long before the season when they ought to have arrived at maturity. One cause of this barren blooming I attribute to a false system of education, gathered from the books written on this subject by men who, considering females rather as women than human creatures, have been more anxious to make them alluring mistresses than affectionate wives and rational mothers; . . . the civilized women of the present century, with a few exceptions, are only anxious to inspire love, when they ought to cherish a nobler ambition, and by their abilities and virtues exact respect. . . .

Yet, because I am a woman, I would not lead my readers to suppose that I mean violently to agitate the contested question respecting the equality or inferiority of the sex; but . . . I shall stop a moment to deliver, in a few words, my opinion. In the government of the physical world it is observable that the female in point of strength is, in general, inferior to the male. This is the law of nature; and it does not appear to be suspended or abrogated [abolished] in favor of woman. A degree of

physical superiority cannot, therefore, be denied—and it is a noble prerogative [right]! But not content with this natural preeminence, men endeavor to sink us still lower, merely to render us alluring objects for a moment; and women, . . . do not seek to obtain a durable interest in [men's] hearts, or to become the friends of the fellow creatures who find amusement in their society.

I am aware of an obvious inference: from every quarter have I heard exclamations against masculine women; but where are they to be found? If by this appellation [name] men mean to inveigh [protest] against their ardor in hunting, shooting, and gaming, I shall most cordially join in the cry; but if it be against the imitation of manly virtues, or, more properly speaking, the attainment of those talents and virtues, the exercise of which ennobles the human character, and which raise females in the scale of animal being, when they are comprehensively termed mankind; all those who view them with a philosophic eye must, I should think, wish with me that they may every day grow more and more masculine.

*from Barbara H. Solomon and Paula S. Berggren, eds., A Mary Wollstonecraft Reader (New York: New American Library, 1983), 267–269.*

### Discussion Questions

1. **Perceiving Cause and Effect** According to Wollstonecraft, what happens when women are not properly educated?
2. **Recognizing Facts and Details** What is Wollstonecraft's opinion of the equality of men and women?
3. **Making Inferences** Jean-Jacques Rousseau believed that a woman's education should primarily teach her to become a better wife and mother. How do you think Wollstonecraft would have reacted to his views?



## Section 4

## PRIMARY SOURCE *from* The Declaration of Independence

*In writing The Declaration of Independence, Thomas Jefferson drew many of his ideas from the works of enlightened thinkers such as John Locke. As you read the following excerpt from that document issued in July 1776, think about the Enlightenment ideas it reflects.*

When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the Laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

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

form of Government becomes destructive of ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness.

Prudence, indeed, will dictate that Governments long established should not be changed for light and transient causes; and accordingly all experience hath shewn that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations [wrongful exercises of authority], pursuing invariably the same Object, evinces a design to reduce them under absolute Despotism [a government in which the ruler exercises absolute power], it is their right, it is their duty, to throw off such Government, and to provide new Guards for their future security.

Such has been the patient sufferance of these Colonies; and such is now the necessity which constrains them to alter their former Systems of Government. The history of the present King of

Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. To prove this, let facts be submitted to a candid world. . . .

We, therefore, the Representatives of the United States of America, in General Congress, Assembled, appealing to the Supreme Judge of the world for the rectitude [righteousness] of our intentions, do, in the name, and by the Authority of the good People of these Colonies solemnly publish and declare, That these United Colonies are, and of Right ought to be, Free and Independent States; that they are Absolved from all Allegiance to the British Crown, and that all political connection between them and the State of Great Britain is, and ought to be, totally dissolved; and that as Free and Independent States, they have full Power to levy War, conclude Peace, contract Alliances, establish Commerce, and do all other Acts and Things which Independent States may of right do.

And for the support of this Declaration, with a firm reliance on the protection of divine Providence, we mutually pledge to each other our Lives, our Fortunes, and our sacred Honor.

### Discussion Questions

#### *Recognizing Facts and Details*

1. According to the first paragraph, what is the purpose of this document?
2. According to the second paragraph, what is the purpose of government, and when do people have the right to alter or abolish it?
3. **Making Inferences** Why do you suppose Jefferson felt that it was not only the right, but also the duty, of a people to overthrow a despotic government? How would the history of the world be affected if despotism were allowed to reign unchecked?