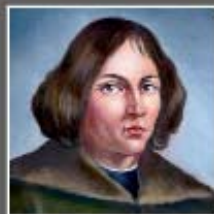


Enlightenment and Revolution, 1550–1789

Enlightenment scientists and thinkers produce revolutions in science, the arts, government, and religion. New ideas lead to the American Revolution.



Nicolaus Copernicus, 1543



Centers of Enlightenment, c. 1740



The Spread of Enlightenment Ideas

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

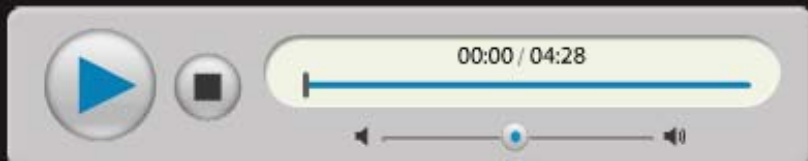
Voices From the Past

Mozart: A Genius for Making Music

One of the greatest composers who ever lived, Mozart began his career as a child prodigy performing for European aristocracy.



Wolfgang Amadeus Mozart, composer. Portrait (18th century).



Section 1

The Scientific Revolution

In the mid-1500s, scientists begin to question accepted beliefs and make new theories based on experimentation.

The Roots of Modern Science

The Medieval View

- Most knowledge in Middle Ages comes from Bible, Greek/Roman sources
- Supports **geocentric theory**—moon, sun, planets revolve around earth

A New Way of Thinking

- Renaissance prompts new ways of thinking (1300–1600)
- **Scientific Revolution**—new way of viewing natural world—based on observation, inquiry
- New discoveries, overseas exploration open up thinking
- Scholars make new developments in astronomy, mathematics

A Revolutionary Model of the Universe

The Heliocentric Theory

- Widely accepted geocentric theory challenged as inaccurate
- Copernicus develops **heliocentric theory**—planets revolve around sun
- Later scientists mathematically prove Copernicus to be correct

Galileo's Discoveries


- Italian scientist **Galileo Galilei** makes key advances in astronomy
 - makes discovery about planet surfaces, supports heliocentric theory

A Revolutionary Model of the Universe

Conflict with the Church

- Church attacks Galileo's work, fears it will weaken people's faith *[Visual]*
- Pope forces Galileo to declare his and other new findings are wrong



 Galileo at trial before the Inquisition in 1633. Painting, 17th century.

The Scientific Method

A Logical Approach

- Revolution in thinking leads to development of **scientific method**
 - series of steps for forming, testing scientific theories

Bacon and Descartes

- Thinkers Bacon and Descartes help to create scientific method
- Bacon urges scientists to experiment before drawing conclusions
- Descartes advocates using logic, math to reason out basic truths

Newton Explains the Law of Gravity

Newton's Theories

- English scientist **Isaac Newton** develops theory of motion
 - states same forces rule motion of planets, matter in space, earth
- Motion in space, earth linked by the law of universal gravitation
 - holds that every object in universe attracts every other object
- Newton views universe as a vast, perfect mechanical clock

The Scientific Revolution Spreads


Scientific Instruments

- Scientists develop microscope, barometer, thermometer
- New instruments lead to better observations, new discoveries

Medicine and the Human Body

- Andreas Vesalius improves knowledge of anatomy *[Visual]*
- Edward Jenner produces world's first vaccination—for smallpox



 Dura mater—the membrane surrounding brain. Anatomical drawing by Andreas Vesalius (1543).

The Scientific Revolution Spreads

Discoveries in Chemistry

- Robert Boyle argues that matter is made of many different particles
- Boyle's law reveals interaction of volume, temperature, gas pressure

Section 2

The Enlightenment in Europe

A revolution in intellectual activity changes Europeans' view of government and society.

Two Views on Government

New Ways of Thinking

- Scientific Revolution spurs reassessment of many prevailing ideas
 - Europeans seek insights into society during 1600s, 1700s
- Leads to the **Enlightenment**—a movement stressing reason and thought

Hobbes's Social Contract

- Hobbes distrusts humans, favors strong government to keep order
- Promotes **social contract**—getting order by giving power to monarch

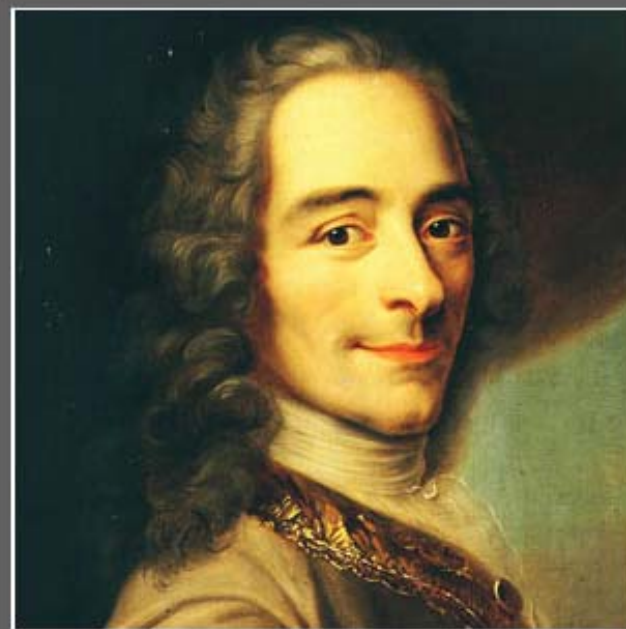
The Philosophes Advocate Reason

Beliefs of the Philosophes

- The **philosophes** are French social critics in the mid-1700s
- Value reason, nature, happiness, progress, liberty

Voltaire Combats Intolerance

- **Voltaire**—influential philosophe, pen name of François Marie Arouet *[Visual]*
- Publishes many works arguing for tolerance, reason
- Makes powerful enemies and is imprisoned twice for his views



Portrait of French author Voltaire, assumed name of François-Marie Arouet (1694–1778).

The Philosophes Advocate Reason

Montesquieu and the Separation of Powers

- **Montesquieu**—French writer who admires Britain's government system
- Favors separation of powers to keep one body from running government

Rousseau: Champion of Freedom

- **Rousseau**—philosophe who favors individual freedom, direct democracy
- Views social contract as agreement by free people to form government

Beccaria Promotes Criminal Justice

- Italian philosopher Cesare Beccaria works to reform justice system
- Calls for speedy trials, greater rights for criminal defendants

Women and the Enlightenment

Views on Women's Education Change

- Many Enlightenment thinkers take traditional views of women's role
- Prominent writer **Mary Wollstonecraft** urges greater rights for women:
 - argues women need quality education to be virtuous and useful
 - urges women to go into traditionally male professions like politics
- Some wealthy women use their status to spread Enlightenment ideas

Legacy of the Enlightenment

Role of the Philosophes

- The philosophes are not activists, but inspire major revolutions

Belief in Progress

- Scientific breakthroughs show human capacity to improve society

A More Secular Outlook

- New knowledge of the world leads people to question religious ideas
- Voltaire and others criticize beliefs and practices of Christianity

Legacy of the Enlightenment

Importance of the Individual

- People place more emphasis on individual rights, abilities
- Reason becomes a central concept for philosophers, rulers

Section 3

The Enlightenment Spreads

Enlightenment ideas spread through the Western world and profoundly influence the arts and government.

A World of Ideas

Intellectual Life in Paris

- Paris becomes center of the Enlightenment during 1700s
- City is home to **salons**—gatherings where thinkers discuss ideas

Diderot's *Encyclopedia*

- Philosophe Denis Diderot begins publishing *Encyclopedia* in 1751
 - set of books to which Enlightenment thinkers contribute essays
- *Encyclopedia* articles anger French government, Catholic Church
- *Encyclopedia* helps spread Enlightenment ideas across Europe

New Artistic Styles

Neoclassical Style Emerges

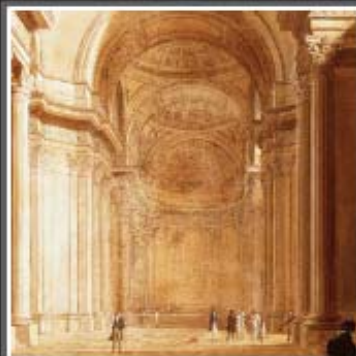
- Pre-Enlightenment art style is **baroque**—grand, ornate design [Visual 1]
- Enlightenment style is **neoclassical**, based on Greek/Roman themes [Visual 2]

Changes in Music and Literature

- Classical music emerges; lighter, more elegant than earlier style
 - led by composers such as Haydn, Mozart, Beethoven
- Novel emerges; works of fiction with detailed plots and characters
- Samuel Richardson's *Pamela* considered first true English novel



Gallery of Mirrors in the Palace of Versailles (1631–1634), France.



Interior of Pantheon in Rome. Painting (19th century), Jacques Germain Soufflot.





Enlightenment and Monarchy

Enlightened Despots

- Spirit of the Enlightenment prompts rise of **enlightened despots**:
 - monarchs who embrace Enlightenment values to strengthen their rule

Frederick the Great

- Frederick II, king of Prussia, reforms education and justice system
- Grants religious freedom, abolishes torture, fails to end serfdom

Joseph II

- Joseph II of Austria allows freedoms of worship and the press
- Abolishes serfdom, but the practice is reinstated after his death

Enlightenment and Monarchy


Catherine the Great *[Visual]*

- **Catherine the Great**—enlightened ruler of Russia, 1762–1796
- Seeks to abolish capital punishment and torture, but effort fails
- Responds to peasant revolt by giving nobles more power over serfs

Catherine Expands Russia

- In foreign affairs, Catherine successfully expands Russian empire
- Gains port access for Russia by seizing northern coast of Black Sea
- Seizes large parts of Poland, increasing empire's size



 Portrait of Catherine II ('The Great'), empress of Russia. Painting (18th century).

Section 4

The American Revolution

Enlightenment ideas help spur the American colonies to shed British rule and create a new nation.

Britain and Its American Colonies

The American Colonies Grow

- American colonies grow large and populous during 1600s, 1700s
- Colonies thrive economically through trade with Europe
 - Britain's Navigation Act restricts that trade (1651)
 - other trade laws add restrictions, taxes
- Colonists identify less and less as British subjects

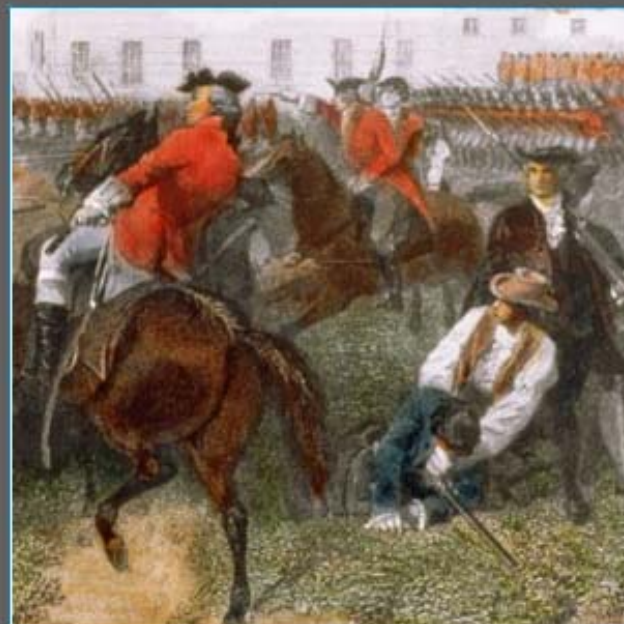
Americans Win Independence

British-Colonial Tensions Arise

- Britain, American colonies win French and Indian War in 1763
- Britain taxes colonists to help pay war debts
- Colonists argue that British cannot tax them without their consent

Growing Hostility Leads to War

- Colonists protest tea tax with "Boston Tea Party" in 1773
- Colonists meet in Philadelphia to address British policies (1774)
- British and Americans exchange fire at Lexington and Concord in 1775 *[Visual]*

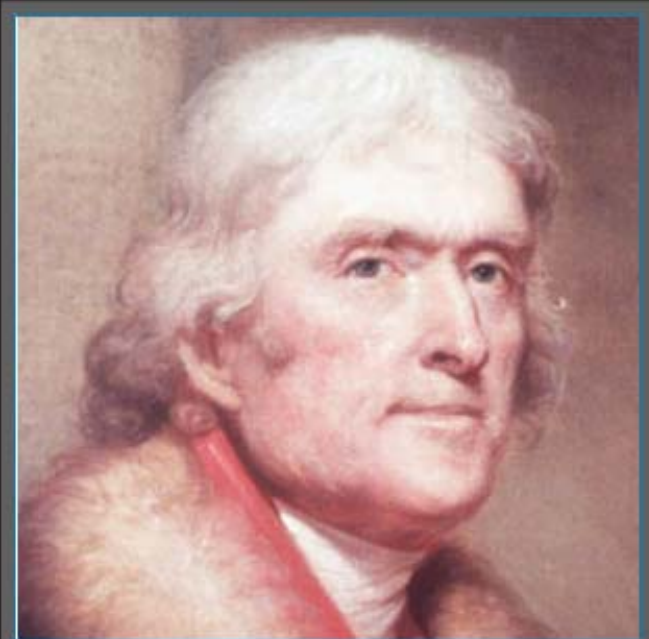


American colonists and British soldiers exchange fire at Battle of Lexington—first skirmish in U.S. War of Independence.

Americans Win Independence

The Influence of the Enlightenment

- Colonial leaders push for independence, rely on Enlightenment ideas
- **Declaration of Independence**—document justifying colonial rebellion
- Leader **Thomas Jefferson** writes Declaration, uses ideas of Locke *[Visual]*



Thomas Jefferson (1743–1826), 3rd U.S. president. Portrait, George Peter Alexander Healy.

Americans Win Independence

Success for the Colonists

- Despite British military might, colonists have advantages:
 - motivating cause of freedom
 - French assistance
 - war's expense for Britain
- British surrender at Yorktown in 1781; colonists win the war

Americans Create a Republic

A Weak National Government

- Articles of Confederation set government plan for new republic
- Articles create legislature only, no executive or judicial branches
- Result is weak national government fails to provide unity and order

A New Constitution

- Leaders call Constitutional Convention in 1787 to revise articles
- Group instead creates a new government under U.S. Constitution
- Constitution contains many political ideas of the Enlightenment

Americans Create a Republic

The Federal System

- Constitution creates three branches of government
- Provides **checks and balances**—ensures branches share power equally
- Promotes **federal system**—power divided between nation and states

The Bill of Rights

- Some fear too much national power, few protections of rights
- Leaders win support for Constitution by adding a **Bill of Rights**
 - ▀ ten amendments to Constitution that protect freedoms

INSERT DECLARATION