Introduction
Content-based Instruction Unit for ELLs

by

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FLA 518 – Content-based Instruction for English Language Learners

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Introduction of the Unit

I. Title: Enlightenment and Revolution, 1550-1789

II. Grade level: World History Honors, Grade 9

III. Target Group: Mainstream class with integrated ELL students.

IV. Source of written reading materials:

*Primary text:


* Supplemental Resources:


V. Source of lessons:


VI. Goals:

1. I want my students to know factors which contributed to the Scientific Revolution.

2. I want my students to know the importance of the scientific method in different fields.

3. I want my students to know the place of the Enlightenment in its historical context, and how its basic ideas spread throughout Europe.

4. I want my students to know the Enlightenment's influence on arts and government; and events that led to the American Revolution.
Note to the reader: It is important for the teacher to read Unit Background and convey the established scene for this unit to the students. With regards to ELLs, the teacher should adjust discourse accordingly (ex. Simplified vocabulary, pauses, repetition of key vocabulary words in context...).
Written Narrative to Fellow Teachers

Lesson 1 Topic: The Scientific Revolution
Unit Topic: Enlightenment and Revolution, 1550 – 1789
High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.

In creating this lesson, I made modifications for English Language Learners by using electronic library reviewing what students have learned in the eighth grade (geocentric theory) and introducing some new information (heliocentric theory) which will be available for this class. I modified the text by creating the main ideas, illustrating with pictures, and highlighting the key words and phrases where students have most to focus on. I create a list of names & terms showing students how I summarize and emphasize the important information of a text. I also created the word wall which with the other ones above allow students to see and prioritize key points which facilitate understanding and memory. I applied modeling language as a prompt to complete their reading and writing tasks. I grouped students, so they could use instructional conversation and peer support during the activity. I chose to use real objects, so students could have a better idea on the law of gravity. I used a set of pictures to test students' understanding, so students could recognize much easier the connection between scientists and scientific methods, and allow students to ask for more clarification.
### Language Objectives, Content Objectives and Performance Indicators

High School – World History Honors, Grade 9  
Target group: Mainstream class with integrated ELL students.  
Unit Topic: Enlightenment and Revolution, 1550 – 1789  
Lesson 1 Topic: The Scientific Revolution

<table>
<thead>
<tr>
<th><strong>Content Objectives</strong></th>
<th><strong>Language Objectives</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) To identify factors which contributed to the Scientific Revolution.</td>
<td>1) During a whole group discussion, students will orally be able to list new discoveries which challenged old ideas and led to the Scientific Revolution, and then they will show in a web diagram.</td>
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<td>2) To summarize the development of the heliocentric theory and explain why it led to conflict.</td>
<td>2) During a whole group discussion, students will orally be able to describe the heliocentric theory against church teaching and authority.</td>
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<tr>
<td>3) To explain Newton's law of gravity.</td>
<td>3) Working in groups of four or five, students will be able to discuss their understanding on the law of gravity. Then they will share to the whole class.</td>
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<tr>
<td>4) To describe the importance of the scientific method in different fields.</td>
<td>4) Working in groups of four or five, students will be able to create a Scientific Revolution Discovery Board listing new tools and instruments developed by scientists in different fields, and sharing to the whole class.</td>
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<table>
<thead>
<tr>
<th><strong>Domain/Topic</strong></th>
<th><strong>Fluent Bridging Level 5</strong></th>
<th><strong>Expanding Fluency Level 4</strong></th>
<th><strong>Speech Emerging Level 3</strong></th>
<th><strong>Early Production Level 2</strong></th>
<th><strong>Preproduction Level 1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading, Speaking, Listening &amp; Writing</strong></td>
<td>Students will identify which new discoveries led to the Scientific Revolution by written (creating a web diagram) and spoken language contributing to a whole class discussion using complete sentences.</td>
<td>Students will identify which new discoveries led to the Scientific Revolution by written (creating a web diagram) and spoken language contributing to a whole class discussion using phrases and short sentences.</td>
<td>Students will identify which new discoveries led to the Scientific Revolution by written (creating a web diagram) and spoken language prompts provided by the teacher during a whole group discussion.</td>
<td>Students will identify which new discoveries led to the Scientific Revolution by giving one-two word responses to teacher questions during a whole group discussion, and then they will create a web diagram.</td>
<td>Students will identify which new discoveries led to the Scientific Revolution by pointing to the events on the classroom chart in response to teacher questions during a whole group discussion, and then they will create a web diagram.</td>
</tr>
</tbody>
</table>
**Reading, Speaking & Listening**

Describe heliocentric theory against church authority.

| Students will describe heliocentric theory against church teaching and authority, based on the written information and other sources (internet, primary sources), using complete sentences during a whole group discussion. |
| Students will describe heliocentric theory against church teaching and authority, based on the written information and other sources (internet, primary sources), using phrases and short sentences during a whole group discussion. |
| Students will describe heliocentric theory against church teaching and authority, based on the written information, by using language prompts provided by the teacher during a whole group discussion. |
| Students will describe heliocentric theory against church teaching and authority, based on the written information, by pointing to the picture clues and using L1 support during a whole group discussion. |

**Reading, Speaking & Listening**

Describe heliocentric theory against church authority.

| Students will explain their understanding on the law of gravity during the group discussion, before sharing to the whole class, using complete sentences and include vocabulary words specific to the law of gravity. |
| Students will explain their understanding on the law of gravity during the group discussion, before sharing to the whole class, using phrases and short sentences, and include vocabulary words specific to the law of gravity. |
| Students will explain their understanding on the law of gravity during the group discussion, and then sharing to the whole class, using language prompts provided by the teacher, and include vocabulary words specific to the law of gravity. |
| Students will explain the understanding on the law of gravity during the group discussion using prompts from the teacher and words that are provided from the word bank including vocabulary words specific to the law of gravity. |

**Reading, Speaking Listening & Writing**

Create a Scientific Revolution Discovery Board.

| Students will create a Scientific Revolution Discovery Board during the group discussion using feedback from their peers, then they will share to the whole class using complete sentences. |
| Students will create a Scientific Revolution Discovery Board during the group discussion using feedback from their peers, then they will share to the whole class using phrases and short sentences. |
| Students will create a Scientific Revolution Discovery Board during the group discussion using feedback from their peers, then they will share to the whole class using language prompts provided by the teacher. |
| Students will assist in the creating a Scientific Revolution Discovery Board during the group discussion using feedback from their peers, key words, and L1 support. |
**Functional/Notional Chart: Lesson 1: The Scientific Revolution**

| Identify and name. | Some of the important scientific discoveries of this period. | 1. Nicolaus Copernicus Galileo Galilei Johannes Kepler Rene Descartes Isaac Newton 2. the geocentric theory, the heliocentric theory, the law of the pendulum, the law of gravity. | *Subjects*  
| *Direct objects*  
| *Proper nouns*  
| *Common nouns* |
| | | **explained** |  
| | | 2. |  
| | | a. Andreas Vesalius Edward Jenner Robert Boyle  
| | | b. the scientific method in chemistry, the study of anatomy, the process of vaccination. | |
Lesson Plan 1: The Scientific Revolution

High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.
Unit Topic: Enlightenment and Revolution, 1550 – 1789

Key: SW = Students will... ; TW = Teacher... ; SWBAT = Students will be able to ... ; HOTS = Higher Order Thinking Skills

Key Vocabulary: Scientific Revolution, Nicolaus Copernicus, heliocentric theory, Johannes Kepler, Galileo Galilei, scientific method, Francis Bacon, Rene Descartes, Isaac Newton, medieval, scholars, universe, pendulum, geocentric theory, law of gravity, Peter Boyle, telescope.

HOTS: Why was the Scientific Revolution so important for that period?

Visuals/Resources/Supplementary Materials: Text book, word wall, world map, handouts, (modified text – for English language learners, and other sheets for different activities), electronic library, books/magazines or printed internet sources, light/heavy objects.

Activities with Modifications for Students who are English Language Learners:

Procedure (1 – 1.5 hour class):

1. Initiation – SW read the daily class objectives, and then TW restate, “Today we are going to learn new discoveries which challenged the old ideas and led to the Scientific Revolution. In order for us to pay attention to important events, we’ll be using visual objects, a short video tape, pictures, and experiment to identify and describe these events. Also, we will have class discussion, group work and handouts to be more specific on them.” (3-5 minutes)

2. Connections to Prior Knowledge/Building Background (5-7 minutes)

a. – TW ask 2 students (1 student of level 4 or 5, and 1 student of level 1, 2 or 3) to read loudly the changing idea chart on page 548 in their text. TW be focused on repeating and paraphrasing the words “observation” and “experimentation.”

Students level 4 and 5 will use their original text pg. 548.
Students level 1, 2 and 3 will use the handout on pg.10.
b. – Then TW ask students to answer the following questions:

Level 4 & 5: *What were the old methods used to understand the physical world?  
* What were the new methods that scholars began to use to understand the physical world?
Level 3: *List the old methods used to understand the physical world.  
*List the new methods that scholars began to use to understand the physical world.
Level 2: Are the new methods – observation and experimentation, or church teaching and beliefs?
Level 1: * Point the new methods used to understand the physical world (the following words will be written on the blackboard)  
   1. Church teaching  
   2. Observation  
   3. Beliefs  
   4. Experimentation

3. – Helped by the students, TW introduce the following concepts on the word wall (see pg. 11) illustrating on the world map too. All ELLs will use the handout “People of the Scientific Revolution” on pg. 12; students of level 4 and 5 will use the handout “Terms and names” on pg. 13, and students of level 1, 2 and 3 will use the handout “Terms and Names” pg. 14 – attached for this activity: (10-12 minutes)  
* Scientific Revolution  
* Nicolaus Copernicus  
* Heliocentric Theory  
* Johannes Kepler  
* Galileo Galilei  
* Scientific Method  
* Francis Bacon  
* Rene Descartes  
* Issac Newton

4a. – Students will read silently the section “The Roots of Modern Science” assigned to fill out the web diagram “Causes of the Scientific Revolution” on pg. 15. (5 minutes)

Level 5 will use the original text, pages 545-546.  
Level 4 will use the modified text, pages 27 & 28.  
Level 3, 2 and 1 will use the modified text, page 23 and handout # 1 on pg. 10.

4b. – Then teacher and students will have a full class discussion about this web diagram using the same materials as in 4.a. (3-5 minutes)

5a. – TW show a short video tape titled “Geocentric Theory and Heliocentric Theory” (see pg. 16) reviewing the concept of geocentric theory vs. heliocentric theory – the first major challenge to accept scientific thinking. (5 minutes)
5b. – Then, during a whole group discussion, SW describe the Heliocentric Theory against Geocentric Theory. (5 minutes)

Level 5 will use original text, pages 546-547, section “A Revolutionary Model of the Universe”
Level 4 will use modified text, pages 28 & 29, section “A Revolutionary Model of the Universe”
Level 2 and 3 will use modified text, pg. 24, section “A Revolutionary Model of the Universe”
Level 1 will use the handouts on pages 17 & 18, section “A Revolutionary Model of the Universe”

6a. – TW ask students first to think about science class and then to explain why do they use experiments. Teacher also wonders to know if students have knowledge on the Newton's law of gravity. During this discussion, TW see if students need more explanation about Newton's law of gravity. (5 – 8 minutes).

6b. – SW work in groups of 4 or 5 (heterogeneously with students of different levels) discussing their understanding on the Law of Gravity.
* First TW ask students to drop different objects (ex. a book and a piece of paper) on the floor from the height of their body, and then to compare the degree of attraction of their used objects with the floor. They will use real light/heavy objects to experiment it first in their groups, and then one group will introduce in front of the whole class (5-8 minutes).

Level 5 will use original text, pages 548-549, section “Newton Explain the Law of Gravity”
Level 4 will use modified text, pages 30-31, section “Newton Explain the Law of Gravity”
Level 1, 2 and 3 will use modified text, pages 25-26, section “Newton Explain the Law of Gravity”

7a. – Brainstorm on knowledge of the tools and instruments that can be used to make precise observations. This activity can be done by asking students to explain or predict the tools and instruments which can be used to measure the temperature, to predict the weather, or to make other precise observations. ELLs will use the word wall on pg. 11 (3-5 minutes).

7b. – SW work in groups of four or five, sharing ideas and information. First all ELLs will receive a handout (see pg. 19); then they will create a Scientific Revolution Discovery Board listing new tools and instruments developed by scientists in different fields (see pages 20 & 21), and last they will share to the whole class (5-7 minutes).

Level 5 will use also original text, pages 549-550.
Level 4 will use also modified text, pages 31-32.
Level 1, 2 and 3 will use also the handout, pg. 26.

7. Wrap-up (7-10 minutes):

– SW receive the handout “Knowledge Test” pg. 22 – attached to this lesson plan. They will write the person of the Scientific Revolution who represents each set of pictures, and they will
tell why.

**Assessment:** TW assess students during the activities, looking to see if students are listing the new discoveries which challenged old ideas and led to the Scientific Revolution; if students are describing correctly the Heliocentric Theory; if students are explaining correctly the Law of Gravity, and if they are listing the new tools and instruments developed by scientists in different fields. SW show their understanding of the concepts and express the areas in which they need clarification, as well as the questions they generate for homework.
Old science was based on beliefs and church teachings.

**Changing Idea: Scientific Method**

**Old Science**
Scholars generally relied on ancient authorities, church teachings, common sense and reasoning to explain the physical world.

**New Science**
In time, scholars began to use observation, experimentation, and scientific reasoning to gather knowledge and draw conclusions about the physical world.

New science was based on observation and experimentation.

- **Observation**: Watching carefully and gathering information.
- **Experimentation**: Using tests to make discoveries.
Lesson 1 Topic: The Scientific Revolution

Word wall for key words and phrases in the text

Scientific Revolution

Medieval Scholars Universe pendulum

giocentric theory heliocentric theory

Nicolaus Copernicus scientific method

Galileo Galilei gravity Francis Bacon

Rene Descartes Issac Newton

Peter Boyle telescope Johannes Kepler
<table>
<thead>
<tr>
<th>Country</th>
<th>Significant Figure</th>
<th>Contributions</th>
</tr>
</thead>
</table>
| Poland  | Copernicus         | -reasoned the heliocentric theory - sun is center  
-kept ideas to himself b/c of Catholic Church (heresy) |
| England | Bacon              | -scientific method - use reason & observation to prove things - not superstition  
-changed the way people thought |
| HRE     | Kepler             | -used reason & math to prove Copernicus right  
-used reason & math to discover laws of planetary motion |
| Italy   | Galileo            | -used reason & telescope to prove heliocentric theory  
-declared heretic - took back what he said |
| England | Newton             | -used reason to discover Laws of Gravity, Laws of Motion, & calculus |
| England | Harvey             | -used reason to discover circulation of blood  
-used reason to study the human body |
Chapter 22: Enlightenment and Revolution, 1550-1789

Section 1: The Scientific Revolution, pages 545-550

**Scientific Revolution** – new way of thinking based on careful observation and experimentation.

**Nicolaus Copernicus** – cleric and astronomer who reasoned the heliocentric theory.

**Heliocentric Theory** – the sun was the center of the universe.

**Johannes Kepler** – a brilliant mathematician who concluded that certain mathematical laws govern planetary motion.

**Geocentric theory** – the earth was the center of the universe.

**Galileo Galilei** – scientist who built the first telescope.

**Scientific Method** – logical procedure for gathering and testing ideas.

**Francis Bacon** – politician and writer who believed that scientists should use the experimental method.

**Rene Descartes** – mathematician who relied on mathematics and logic.

**Isaac Newton** – scientist who discovered laws of motion and gravity.
Modified Lesson Material

Terms & Names
(level 1, 2, 3)

Chapter 22: Enlightenment and Revolution, 1550-1789

Section 1: The Scientific Revolution, pages 545-550

**Scientific Revolution** – based on careful observation and experimentation.

**Nicolaus Copernicus** – reasoned the heliocentric theory.

**Heliocentric Theory** – the sun centered theory.

**Johannes Kepler** – continued Copernicus’ theory.

**Geocentric theory** – the earth centered theory.

**Galileo Galilei** – built the first telescope.

**Scientific Method** – logical procedure for gathering and testing ideas.

**Francis Bacon** – believed on using the experimental method.

**Rene Descartes** – relied on mathematics and logic.

**Isaac Newton** – discovered laws of motion and gravity
Causes of the Scientific Revolution
Video Tape

The Heliocentric and Geocentric Theories
Heliocentric Theory (lower panel) in comparison to the Geocentric Theory (upper panel).
The Scientific Revolution Spreads

Scientific instruments

* microscope to observe bacteria
* barometer for measuring atmospheric pressure and predicting weather
* thermometer to show water freezing at 32 degree.

Medicine and the human body

* Edward Jenner introduced a vaccine to prevent smallpox.

Discoveries in Chemistry

* Boyle's law explains how the volume, temperature and pressure of gas affect each other.
* Joseph Priestley separated one pure gas from air.
### Science and Technology
(level 1, 2, 3)

**New tools and instruments developed by scientists in different fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>New tools and instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Science</td>
<td>- microscope</td>
</tr>
<tr>
<td></td>
<td>- barometer</td>
</tr>
</tbody>
</table>

This chart will be as a modeling language for students level 1, 2, 3 to complete their task.
Science and Technology
(level 4, 5)

New tools and instruments developed by scientists in different fields

<table>
<thead>
<tr>
<th>Field</th>
<th>New tools and instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Each set of pictures represents a person of the Scientific Revolution. Write which person each set represents and tell why.
Modification of text

Main Ideas

Chapter 22: Enlightenment and Revolution, 1550-1789.
Section 1. The Scientific Revolution

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

Why It Matters Now: Such questioning led to the development on the scientific method still used today.

The Roots of Modern Science

*How did modern science begin?*

Modern science began using careful observation, willingness to question old beliefs and European voyages.
1. Medieval scholars had a geocentric view (the earth was center of the universe). It was made popular by Ptolemy and by Aristotle.

![Sphere of the Prime Mover](image1)

![Aristotle's Universe](image2)

Aristotle's Universe with the earth at center.

2. Exploration and new discoveries in Astronomy challenged old ways of thinking about the geocentric view and the world. They led to the Scientific Revolution (a new way of thinking about the natural world based on careful observation).
A Revolutionary Model of the Universe

*How did new ideas change accepted thinking in astronomy?

1. Nicolaus Copernicus went against geocentric theory *(the earth was center of the universe)*, and he developed the heliocentric theory *(the sun is at the center of the universe)* through observation.

Heliocentric theory *(lower panel)* in comparison to the geocentric theory *(upper panel)*.

2. Johannes Kepler used math to prove Copernicus' theory was correct.

3. Galileo Galilei's observations and his laws of motion supported the heliocentric theory. He discovered the law of pendulum. Galileo created the first telescope, and he used it to study planets.

Galileo used this telescope to observe the moon.
Galileo's ideas went against religious teachings and authority. He got arrested, and he was forced to take back his statements.

**The Scientific Method**

*Why was the *scientific method* an important development?*

1. The *scientific method* was a logical procedure for gathering and testing ideas (question, hypothesis, experiment, observation, conclusion).

2. **Francis Bacon** urged scientists to draw conclusions about the world based on their own observations.

3. **René Descartes** believed that everything should be doubted until it could be proven.

**Newton Explains the Law of Gravity**

*How did Newton describe the *law of gravity*?*

**Newton** explained that the same force ruled both the motion of planets and actions of bodies on earth.

---

**Law of Universal Gravitation**

Every object in the Universe attracts every other object with a force directed along the line of centers for the two objects that is proportional to the product of their masses and inversely proportional to the square of the separation between the two objects.

\[ F_g = G \frac{m_1 m_2}{r^2} \]

- **\( F_g \)** is the gravitational force
- **\( m_1 \) & **\( m_2 \) are the masses of the two objects
- **\( r \)** is the separation between the objects
- **\( G \)** is the universal gravitational constant
According to Newton's **law of gravity**, every object in the universe attracts every other object. The degree of attraction depends on the mass of the objects.

**The Scientific Revolution Spreads**

1. New tools and instruments (*microscope, weather tools*) helped scientists to make precise observations that the scientific method demanded.
2. Doctors made drawings, learned how organs worked.
   - **Edward Jenner** introduced a vaccine to prevent smallpox.
   - **Andreas Vesalius** pioneered the study of anatomy.
3. **Robert Boyle** pioneered the use of the scientific method in chemistry.
The Scientific Revolution

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

WHY IT MATTERS NOW
Scientists questioning led in the development of the scientific method still in use today.

SETTING THE STAGE
The Renaissance inspired a spirit of curiosity in many fields. Scholars began to question ideas that had been accepted for hundreds of years. During the Reformation, religious leaders challenged accepted ways of thinking about God and salvation. While the Reformation was taking place, another revolution in European thought was also occurring. It challenged how people viewed their place in the universe.

The Roots of Modern Science
Before 1500, scholars generally decided what was true or false by referring to an ancient Greek or Roman author or to the Bible. Whatever Aristotle said about the material world was true unless the Bible said otherwise. Few European scholars questioned the scientific ideas of the ancient thinkers or the church by carefully observing nature for themselves.

The Medieval View
During the Middle Ages, most scholars believed that the earth was an unmoving object located at the center of the universe. According to that belief, the moon, the sun, and the planets all moved in perfectly circular paths around the earth. Beyond the planets lay a sphere of fixed stars, with heaven still farther beyond. Common sense seemed to support this view. After all, the sun appeared to be moving around the earth as it rose in the morning and set in the evening.

This earth-centered view of the universe, called the geocentric theory, was supported by more than just common sense. The idea came from Aristotle, the Greek philosopher of the fourth century B.C. The Greek astronomer Ptolemy expanded the theory in the second century A.D. In addition, Christianity taught that God had deliberately placed earth at the center of the universe. Earth was thus a special place on which the great drama of life took place.

A New Way of Thinking
Beginning in the mid-1500s, a few scholars published works that challenged the ideas of the ancient thinkers and the church. As these scholars replaced old assumptions with new theories, they launched a change in European thought that historians call the Scientific Revolution. The Scientific Revolution was a new way of thinking about the natural world. That way was based upon careful observation and a willingness to question accepted beliefs.

A combination of discoveries and circumstances led to the Scientific Revolution and helped spread its impact. By the late Middle Ages, European scholars had translated many works by Muslim scholars. These scholars had compiled a storehouse of ancient and current scientific knowledge. Based on this knowledge, medieval universities added scientific courses in astronomy, physics, and mathematics.

During the Renaissance, scholars uncovered many classical manuscripts. They found that the ancient authorities often did not agree with each other. Moreover,
European explorers traveled to Africa, Asia, and the Americas. Such lands were inhabited by peoples and animals previously unknown in Europe. These discoveries opened Europeans to the possibility that there were new truths to be found. The invention of the printing press during this period helped spread challenging ideas—both old and new—more widely among Europe’s thinkers.

The age of European exploration also fueled a great deal of scientific research, especially in astronomy and mathematics. Navigators needed better instruments and geographic measurements, for example, to determine their location in the open sea. As scientists began to look more closely at the world around them, they made observations that did not match the ancient beliefs. They found they had reached the limit of the classical world’s knowledge. Yet, they still needed to know more.

**A Revolutionary Model of the Universe**

The first major challenge to accepted scientific thinking came in the field of astronomy. The Scientific Revolution started when a small group of scholars began to question the geocentric theory.

**The Heliocentric Theory** Although backed by a growing body of evidence, the geocentric theory did not accurately explain the movements of the sun, moon, and planets. This problem troubled a Polish cleric and astronomer named Nicolaus Copernicus (koh-PUR-nuh-kuhs). In the early 1500s, Copernicus became interested in an old Greek idea that the sun stood at the center of the universe. After studying planetary movements for more than 25 years, Copernicus reasoned that indeed, the stars, the earth, and the other planets revolved around the sun.

Copernicus’s heliocentric, or sun-centered, theory still did not completely explain why the planets orbited the way they did. He also knew that most scholars and clergy would reject his theory because it contradicted their religious views. Fearing ridicule or persecution, Copernicus did not publish his findings until 1543, the last year of his life. He received a copy of his book, *On the Revolutions of the Heavenly Bodies*, on his deathbed.

While revolutionary, Copernicus’s book caused little stir at first. Over the next century and a half, other scientists built on the foundations he had laid. A Danish astronomer, Tycho Brahe (TEE-koh bruh), carefully recorded the movements of the planets for many years. Brahe produced mountains of accurate data based on his observations. However, it was left to his followers to make mathematical sense of them.

After Brahe’s death in 1601, his assistant, a brilliant mathematician named Johannes Kepler, continued his work. After studying Brahe’s data, Kepler concluded that certain mathematical laws govern planetary motion. One of these laws showed that the planets revolve around the sun in elliptical orbits instead of circles, as was previously thought. Kepler’s laws showed that Copernicus’s basic ideas were true. They demonstrated mathematically that the planets revolve around the sun.

**Galileo’s Discoveries** In 1581, a 17-year-old Italian student named Galileo Galilei sat in a cathedral closely watching a chandelier swing on its chain. Aristotle had said that a pendulum swings at a slower rhythm as it approaches its resting place. Using his beating pulse, Galileo carefully timed the chandelier’s swings. Aristotle’s idea was wrong. Instead, each swing of the pendulum took exactly the same amount of time. Galileo had discovered the law of the pendulum.
In another study, Galileo found that a falling object accelerates at a fixed and predictable rate. Galileo also tested Aristotle's theory that heavy objects fall faster than lighter ones. According to legend, he dropped stones of different weights from the Leaning Tower of Pisa. He then calculated how fast each fell. Contrary to Aristotle's assumption, the objects fell at the same speed.

Later, Galileo learned that a Dutch lens maker had built an instrument that could enlarge far-off objects. Without seeing this device, Galileo successfully built his own telescope. After making some improvements, Galileo used his telescope to study the heavens in 1609.

Then in 1610, he published a series of newsletters called Starry Messenger, which described his astonishing observations. Galileo announced that Jupiter had four moons and that the sun had dark spots. He also noted that the earth's moon had a rough, uneven surface. His description of the moon's surface shattered Aristotle's theory that the moon and stars were made of a pure, perfect substance. Galileo's observations, as well as his laws of motion, also clearly supported the theories of Copernicus.

**Conflict with the Church** Galileo's findings frightened both Catholic and Protestant leaders because they went against church teaching and authority. If people believed the church could be wrong about this, they could question other church teachings as well.

In 1616, the Catholic Church warned Galileo not to defend the ideas of Copernicus. Although Galileo remained publicly silent, he continued his studies. Then, in 1632, he published Dialogue Concerning the Two Chief World Systems. This book presented the ideas of both Copernicus and Ptolemy, but it clearly showed that Galileo supported the Copernican theory. The pope angrily summoned Galileo to Rome to stand trial before the Inquisition.

Galileo stood before the court in 1633. Under the threat of torture, he knelt before the cardinals and read aloud a signed confession. In it, he agreed that the ideas of Copernicus were false.

**A Voice from the Past**

With sincere heart and unpretended faith I abjure, curse, and detest the aforesaid errors and heresies [of Copernicus] and also every other error contrary to the Holy Church, and I swear that in the future I will never again say or assert... anything that might cause a similar suspicion toward me.

*Galileo Galilei*, quoted in The Discoverers

Galileo was never again a free man. He lived under house arrest and died in 1642 at his villa near Florence. However, his books and ideas still spread all over Europe.

**The Scientific Method**

The revolution in scientific thinking that Copernicus, Kepler, and Galileo began eventually developed into a new approach to science called the scientific method. The *scientific method* is a logical procedure for gathering and testing ideas. It begins with a problem or question arising from an observation. Scientists next form a hypothesis, or unproved assumption. The hypothesis is then tested in an experiment or on the basis of data. In the final step, scientists analyze and interpret their data to reach a new conclusion. That conclusion either confirms or disproves the hypothesis.

The scientific method did not develop overnight. The work of two important thinkers of the 1600s, Francis Bacon and René Descartes, helped to advance the new approach. *Francis Bacon*, an English politician and writer, had a passionate interest in science. He believed that by better understanding the world, scientists would generate practical knowledge that would improve people's lives. In his writings, Bacon attacked medieval
Newton Explains the Law of Gravity

By the mid-1600s, the accomplishments of Copernicus, Kepler, and Galileo had laid the foundations for new scientific ideas. Newton helped to bring together their breakthroughs under a single theory of motion. His work was influenced by the old views of astronomy and physics. Newton studied mathematics and physics at Cambridge University. By the time he was 24, Newton had worked out laws for a planet's motion around the sun. His great discovery was that the same force that pulled the motion of the planets on the earth also pulled the motion of the planets around the sun. Newton provided an explanation for the constant law of motion and the law of universal gravitation, which linked the planets to the sun and the moon to the earth.

Scholars generally relied on ancient authorities, church teachings, and other sources to explain the physical world. Newton's work challenged those views. He reasoned that sense and reason to explain the physical world. This idea was later used in the French and the American Revolutions, where the people wanted to replace the old order with a new one. Scientists have shown that observation and experiment lead to the best conclusions. Newton's work has been important in the development of modern scientific methods and the scientific method. His approach is called empiricism, and he was a pioneer in the use of mathematics in the sciences.
He disproved the idea of Aristotle that one set of physical laws governed earth and another set governed the rest of the universe.

The key idea that linked motion in the heavens with motion on the earth was the law of universal gravitation. According to this law, every object in the universe attracts every other object. The degree of attraction depends on the mass of the objects and the distance between them.

In 1687, Newton published his ideas in a work called *Mathematical Principles of Natural Philosophy*—one of the most important scientific books ever written. The universe he described was like a giant clock. Its parts all worked together perfectly in ways that could be expressed mathematically. Newton believed that God was the creator of this orderly universe, the clockmaker who had set everything in motion.

**The Scientific Revolution Spreads**

After astronomers explored the secrets of the universe, other scientists began to study the secrets of nature on earth. Careful observation and the use of the scientific method eventually became important in many different fields.

**Scientific Instruments** Scientists developed new tools and instruments to make the precise observations that the scientific method demanded. The first microscope was invented by a Dutch maker of eyeglasses, Zacharias Janssen (YAHN-suhn), in 1590. In the 1670s, a Dutch drapery merchant and amateur scientist named Anton van Leeuwenhoek (LAY-vuhn-HUK) used a microscope to observe bacteria swimming in tooth scrapings. He also saw red blood cells for the first time. His examination of grubs, maggots, and other such organisms showed that they did not come to life spontaneously, as was previously thought. Rather, they were immature insects.

In 1643, one of Galileo's students, Evangelista Torricelli (TAWR-uh-CHEHL-lee), developed the first mercury barometer, a tool for measuring atmospheric pressure and predicting weather. In 1714, the Dutch physicist Gabriel Fahrenheit (FAHR-uhn-HYT) made the first thermometer to use mercury in glass. Fahrenheit's thermometer showed water freezing at 32°, A Swedish astronomer, Anders Celsius (SEHL-see-uhhs), created another scale for the mercury thermometer in 1742. Celsius's scale showed freezing at 0°.

**Medicine and the Human Body** During the Middle Ages, European doctors had accepted as fact the writings of an ancient Greek physician named Galen. However, Galen had never dissected the body of a human being. Instead, he had studied the anatomy of pigs and other animals. Galen assumed that human anatomy was much the same. Galen's assumptions were proved wrong by Andreas Vesalius, a Flemish physician. Vesalius dissected human corpses (despite disapproval of this practice) and published his observations. His book, *On the Fabric of the Human Body* (1543), was filled with detailed drawings of human organs, bones, and muscle.
An English doctor named William Harvey continued Vesalius’s work in anatomy. In 1628, he published *On the Motion of the Heart and Blood in Animals*, which showed that the heart acted as a pump to circulate blood throughout the body. He also described the function of blood vessels.

In the late 1700s, British physician Edward Jenner introduced a vaccine to prevent smallpox. Inoculation using live smallpox germs had been practiced in Asia for centuries. While beneficial, this technique was also dangerous. Jenner discovered that inoculation with germs from a cattle disease called cowpox gave permanent protection from smallpox for humans. Because cowpox was a much milder disease, the risks for this form of inoculation were much lower. Jenner used cowpox to produce the world’s first vaccination.

**Discoveries in Chemistry** Robert Boyle pioneered the use of the scientific method in chemistry. He is considered the founder of modern chemistry. In a book called *The Sceptical Chymist* (1661), Boyle challenged Aristotle’s idea that the physical world consisted of four elements—earth, air, fire, and water. Instead, Boyle proposed that matter was made up of smaller primary particles that joined together in different ways. Boyle’s most famous contribution to chemistry is Boyle’s law. This law explains how the volume, temperature, and pressure of gas affect each other.

Another chemist, Joseph Priestley, separated one pure gas from air in 1774. He noticed how good he felt after breathing this special air and watched how alert two mice were while breathing it. Wrote Priestley, “Who can tell but that, in time, this pure air may become a fashionable article of luxury? Hitherto only two mice and I have had the privilege of breathing it.” Meanwhile, in France, Antoine Lavoisier (lah-vwah-ZYAY) was performing similar experiments. In 1779, Lavoisier named the newly discovered gas oxygen.

Other scholars and philosophers applied a scientific approach to other areas of life. Believing themselves to be orderly, rational, and industrious, they thought of themselves as enlightened. They would become the leaders of a new intellectual and social movement called the Enlightenment.

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**Section 1 Assessment**

1. **TERMS & NAMES**
   - Identify:
     - Scientific Revolution
     - Nicolaus Copernicus
     - heliocentric theory
     - Johannes Kepler
     - Galileo Galilei
     - scientific method
     - Francis Bacon
     - René Descartes
     - Isaac Newton

2. **TAKING NOTES**
   Use a web diagram such as the one below to show the events and circumstances that led to the Scientific Revolution.

   ![Web Diagram](image)

   **Causes of the Scientific Revolution**

3. **DRAWING CONCLUSIONS**
   “If I have seen farther than others,” said Newton, “it is because I have stood on the shoulders of giants.” Who were the giants to whom Newton was referring? Could this be said of any scientific accomplishment? Explain.

4. **THEME ACTIVITY**
   **Science & Technology** Working in groups of three or four, create a Scientific Revolution Discovery Board. Use these categories: Astronomy, Science, Medicine, Chemistry, Biology. Include important people, ideas, accomplishments.
Lesson 2
Written Narrative to Fellow Teachers

**Lesson 2 Topic:** The Enlightenment in Europe  
**Unit Topic:** Enlightenment and Revolution, 1550 – 1789  
**High School** – World History Honors, Grade 9  
**Target group:** Mainstream class with integrated ELL students.

This lesson includes sheltered strategies, adjusting discourse, and student interaction. This lesson begins with daily class objectives (reading by the teacher and students too) which allow students to create an idea on what they are going to learn in this class. Then I applied an open discussion to build the students' background knowledge. I made modifications for English Language Learners by using the word wall, written definitions of the key words and phrases (for different levels), framing the main ideas and illustrating them with pictures. I highlighted the key words especially required for preproduction and early production level to facilitate understanding and memory. I applied modeling language for students level 1, 2 and 3 as a prompt to complete their reading and writing tasks. With regards to enhanced interaction, students will be placed in heterogeneous groups (wherever is possible). Assessment is done through oral discussions and written presentations. Rubrics for grading of oral discussions and written assignments should be modified for ELLs according to language proficiency of the students.
## Language Objectives, Content Objectives and Performance Indicators

High School – World History Honors, Grade 9  
Target group: Mainstream class with integrated ELL students.  
Unit Topic: Enlightenment and Revolution, 1550 – 1789  
Lesson 2 Topic: The Enlightenment in Europe

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) To explain Hobbes's and Locke's views on government.</td>
<td>1) By engaging in a class debate, students will orally be able to clarify the key ideas (Hobbes’s and Locke's views) of the Enlightenment on government and human nature.</td>
</tr>
<tr>
<td>2) To list important Enlightenment philosophers and concepts.</td>
<td>2) Working in groups of four or five, students will be able to create a chart listing five important philosophical concepts: reason, nature, happiness, progress and liberty.</td>
</tr>
<tr>
<td>3) To describe women's contributions to the Enlightenment.</td>
<td>3) Working in groups of four or five, students will orally be able to explain how women helped to spread the Enlightenment ideas.</td>
</tr>
<tr>
<td>4) To explain the impact of the Enlightenment on Western civilization.</td>
<td>4) Through the study and discussion, students will be able to write a paragraph describing the impact of the Enlightenment on Western civilization.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain/Topic</th>
<th>Fluent Bridging Level 5</th>
<th>Expanding Fluency Level 4</th>
<th>Speech Emerging Level 3</th>
<th>Early Production Level 2</th>
<th>Preproduction Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading, Speaking, Listening</strong></td>
<td>By engaging in a class discussion, students will discuss in full sentences about Hobbes and Locke's views on government and human nature.</td>
<td>By engaging in a class discussion, students will discuss about Hobbes and Locke's views on government and human nature by using phrases and short sentences.</td>
<td>By engaging in a class discussion, students will discuss about Hobbes and Locke's views on government and human nature by using language prompts provided by the teacher.</td>
<td>By engaging in a class discussion, students will discuss about Hobbes and Locke's views on government and human nature by giving one-two word responses to teacher questions.</td>
<td>Class discussion about Hobbes and Locke's views on government and human nature by pointing at the words on the classroom chart in response to teacher questions.</td>
</tr>
<tr>
<td><strong>Reading, Listening, Speaking &amp; Writing</strong></td>
<td>Working in groups of four or five, students will create and present a chart listing important Enlightenment philosophers and concepts using complete sentences.</td>
<td>Working in groups of four or five, students will create and present a chart listing important Enlightenment philosophers and concepts using phrases and short sentences.</td>
<td>Working in groups of four or five, students will create and present a chart listing important Enlightenment philosophers and concepts by using language prompts provided by teacher support.</td>
<td>Working in groups of four or five, students will assist in creation of a chart listing important Enlightenment philosophers and concepts by using words that are provided from a word bank.</td>
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<tr>
<td><strong>Reading Speaking, Listening</strong></td>
<td>Women's contributions to the Enlightenment. Working in groups of four or five, students will explain women's contribution to the Enlightenment using feedback from their peers, and expressing in full sentences.</td>
<td>Working in groups of four or five, students will explain women's contribution to the Enlightenment using feedback from their peers, and expressing in short sentences or phrases.</td>
<td>Working in groups of four or five, students will explain women's contribution to the Enlightenment using key words and phrases provided by the teacher.</td>
<td>Working in groups of four or five, students will assist to explain women's contribution to the Enlightenment using words from the classroom chart and L1 support.</td>
<td></td>
</tr>
<tr>
<td><strong>Reading, Speaking, Listening &amp; Writing</strong></td>
<td>Impact of the philosophers to create progress in their countries. In small groups, students will write a paragraph where they will identify and explain the impact of the philosophers to create progress in their countries using complete sentences.</td>
<td>In small groups, students will write a short paragraph where they will identify and explain the impact of the philosophers to create progress in their countries using key words and phrases provided by the teacher.</td>
<td>In small groups, students will write a list where they will identify and explain the impact of the philosophers to create progress in their countries using key words and phrases that are provided from the word bank, and L1 support.</td>
<td>In small groups, students will assist to write a list where they will identify the impact of the philosophers to create progress in their countries using key words and phrases that are provided from the word bank, and teacher support.</td>
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<tr>
<td>Function</td>
<td>Situation</td>
<td>Expression</td>
<td>Word/Phrase</td>
<td>Grammar</td>
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<tr>
<td>Identify and name.</td>
<td>Major ideas of the Enlightenment.</td>
<td>1 held and argued</td>
<td>1. Locke, Voltaire, Beccaria, Montesquieu, Wollstonecraft.</td>
<td>*Subjects</td>
<td></td>
</tr>
<tr>
<td>Identify</td>
<td>Major concepts of the Enlightenment.</td>
<td>2</td>
<td>2. natural rights, freedom of thoughts and expression, separation of powers, religious freedom, women's equality, abolition of torture.</td>
<td>*Direct objects</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Philosophers argued that</td>
<td>a. reason, nature, happiness, progress, liberty.</td>
<td>*Proper nouns.</td>
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<td></td>
<td></td>
<td>&quot;a&quot; was</td>
<td>b. finding the truth by using reason, gaining freedom by acting according to nature, making progress and advance by taking a scientific view, being good and</td>
<td>*Common nouns.</td>
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<td></td>
<td></td>
<td>b</td>
<td></td>
<td>*Subjects</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>*Common nouns</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>*Present participles</td>
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<td>that function like nouns.</td>
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</tbody>
</table>
Lesson Plan 2: The Enlightenment in Europe

High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.
Unit Topic: Enlightenment and Revolution, 1550 – 1789

Key: SW = Students will...; TW = Teacher...; SWBAT = Students will be able to ...; HOTS = Higher Order Thinking Skills


Hots: Why is it important to know the Enlightenment ideas?

Visuals/Resources/Supplementary Materials: Text book, word wall, world map, pictures, and handouts (modified text – for English language learners, and other sheets for different activities).

Activities with Modifications for Students who are English Language Learners:

Procedure (45 – 60 min. class)

1. Initiation – Students and teacher will read the daily class objectives. Then TW restate, “Today we are going to learn how people began to apply reason and scientific method to all aspects of society – government, religion, economics and education. In order for us to pay attention to important ideas, we'll be using open class discussion, group work, pictures, key vocabulary words and phrases, and different sheets to make them clear.” (3-5 minutes)

2. Connections to Prior Knowledge/Building Background (12-15 minutes)

a. – Access background knowledge of Enlightenment ideas on government can be done by asking students to explain or predict the difference between monarchy and government. A KWL chart on page 41 will be used for this activity. During this discussion, TW see if students know these concepts, or if they need more information to have a better idea.
b. Then TW introduce two views on government held by Thomas Hobbes and John Locke which are retrospective of the above concepts (monarchy and government).

c. Students will read silently the section “Two Views on Government” assigned to discuss about the key ideas of Hobbes and Locke, and then it will be a full class discussion about these ideas.

Level 5 and 4 will use the modified text, pages 54-55.
Level 3, 2 and 1 will use the modified text, pages 49-50.

3. Brainstorm on knowledge of the following concepts on the word wall (see pg. 42) illustrating with pictures (see pg. 47-48) and in the world map too. First TW ask students what they know about these concepts, and then students will get a handout to fulfill this activity helped by the teacher too (10-12 minutes).

Students of level 4 & 5 will use the handout “Terms and Names” on pg. 43.
Students of level 1, 2 and 3 will use the handout “Terms and Names” on pg. 44.

4. TW place students in groups of 4 or 5 (heterogeneously with students of different levels) naming them group A and group B. Group A will have the handout on pg. 45, and group B will have the handout on pg. 46. Then TW give students 7-10 minutes to create a chart listing 5 main philosophical concepts — assigned for group A, and 5 important philosophers with their major ideas — assigned for group B. After students will be done with their group work, they will share to the whole class. (10-12 minutes)

Students of level 4 & 5 included in group A will use the modified text, page 55.
Students of level 4 & 5 included in group B will use the modified text, pages 56-57.
Students of level 1, 2 and 3 included in group A will use the modified text, page 50.
Students of level 1, 2 and 3 included in group B will use the modified text, pages 51-52.

5. SW work in groups of 4 or 5 (heterogeneously with students of different levels) sharing their thoughts and ideas about women’s contributions to the Enlightenment and women’s rights (5 minutes).

Students of level 4 & 5 will use the modified text, page 58.
Students of level 1, 2 and 3 will use the modified text on pg. 53.

6. SW be placed in groups of 4 or 5 (heterogeneously with students of different levels) assigned to read first the section “Impact of the Enlightenment.” Through the study and discussion about this point, SW write a paragraph describing the impact of the Enlightenment on Western civilization (7-10 minutes).

Students of level 4 & 5 will use the modified text, pages 58-59.
Students of level 1, 2 and 3 will use the modified text on pg. 53.
7. – **Homework assignment**: The homework assignment is continuing of activity # 6., but here students will do it individually, and they will introduce it in the next class. Students of level 4 & 5 will write a whole paragraph through the study of the original text, pages 555-556 and their own internet sources. Students of level 1, 2 and 3 will write a list where they will identify and explain the impact of the Enlightenment using the modified text on pg. 53, and key words and phrases provided by the teacher, pg. 44.

**Assessment**: TW assess students during the activities, looking to see if students are explaining the key ideas held by Hobbes and Locke; if students are listing correctly five main philosophical concepts and five important philosophers with their major ideas; if they are explaining correctly the women’s contribution to the Enlightenment; and if they are explaining the impact of the Enlightenment on Western civilization. SW show their understanding of the concepts and express the areas in which they need clarification, as well as the questions they generate for homework.
A transparency chart like this should be made by the teacher. This chart will be used to access background knowledge of "monarchy & government." The chart should be completed during the whole class discussion and writing students responses on the transparency.
Lesson 2 Topic: The Enlightenment in Europe
Word wall for key words and phrases in the text.

Social Contract  Enlightenment  John Locke

Thomas Hobbes  Philosopher  Natural rights

Reason  Happiness  Nature

Progress  Separation of powers  Liberty

Religious freedom  Rousseau  Montesquieu

Freedom of thought and expression  Voltaire

Women's equality  wollstonecraft

Abolishment of torture  Beccaria
Modified Lesson Material
Terms & Names

Chapter 22: Enlightenment and Revolution, 1550-1789
Section 2: The Enlightenment in Europe, pages 551-556

Enlightenment – Age of Reason

Social Contract – an agreement people make with government.

John Locke – philosopher who wrote about government.

Natural Rights – life, liberty and property

Philosophes – social critics in France

Voltaire – writer who fought for tolerance, reason, freedom of religious belief, and freedom of speech.

Montesquieu – French writer concerned with government and political liberty.

Separation of powers – divided power among separate branches of government.

Jean Jacques Rousseau – enlightenment thinker who championed freedom.

Mary Wollstonecraft – author who wrote about women's rights.
Modified Lesson Material
Terms & Names

Chapter 22: Enlightenment and Revolution, 1550-1789
Section 2: The Enlightenment in Europe, pages 551-556

**Enlightenment** – Age of Reason

**Social Contract** – an agreement between people and government.

**John Locke** – wrote about government.

**Natural Rights** – life, liberty and property

**Philosophes** – social critics in France

**Voltaire** – fought for tolerance, reason and freedom

**Montesquieu** – concerned with government and political liberty.

**Separation of powers** – divided power

**Jean Jacques Rousseau** – championed freedom.

**Mary Wollstonecraft** – wrote about women's rights.
List five main philosophical concepts and explain the meaning of them.

<table>
<thead>
<tr>
<th>CONCEPT</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reason</td>
<td>Finding the truth by using reason.</td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

This chart will be as a modeling language for students to complete their task, especially for students level 1, 2, 3.
Group B

List five important philosophers and their major ideas.

<table>
<thead>
<tr>
<th>PHILOSOPHERS</th>
<th>IDEAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. John Locke</td>
<td>Held and argued &quot;natural rights.&quot;</td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
</tr>
</tbody>
</table>

This chart will be as a modeling language for students to complete their task, especially for students level 1, 2, 3.
Important Philosophies of the Enlightenment

Thomas Hobbes

John Locke

Voltaire

Montesquieu
Modification of text

Main Ideas

Chapter 22: Enlightenment and Revolution, 1550-1789.
Section 2: The Enlightenment in Europe, pages 551-556.

Main Idea: A revolution in intellectual activity changed Europeans' view of government and society.

Why It Matters Now: Freedoms and some forms of government in many countries are a result of the Enlightenment thinking.

Two Views on Government

*What were the views of Hobbes and Locke?*

The Enlightenment started from some key ideas holding by Thomas Hobbes and John Locke. They tried to apply reason and scientific method to laws that shaped human actions. They wanted to build a society based on ideas of Scientific Revolution.

Thomas Hobbes

Thomas Hobbes held and argued social contract theory – an agreement people make with government (people give up their rights to the government, so they could live in a safe and orderly way; best government was one in which the king is strong and can force all people to obey).
John Locke

John Locke held and argued **natural rights** theory – all people have three natural rights: life, liberty, property (the purpose of the government is to protect these rights; if they cannot, then the people have the right to overthrow the government).

The Philosophes Advocate Reason

*Who were the philosophes?*

**Philosophes** were French thinkers with 5 main **concepts**.

1. **Reason** concept was finding the truth by using reason.
2. **Nature** concept was being good and reasonable by being natural.
3. **Happiness** concept was acting according to nature.
4. **Progress** concept was making progress and advance by taking a scientific view.
5. **Liberty** concept was gaining freedom by using reason.
Voltaire held and argued the ideas: “Freedom of thoughts and expression” and “Religious freedom.”

Montesquieu held and argued the idea: “Separation of powers” (divided power among separate branches of government). His idea became the basis for the United States Constitution.
Rousseau

Rousseau disagreed with other Enlightenment thinkers. He argued that civilization corrupted people's natural goodness.

Beccaria

Beccaria held and argued the idea: "Abolishment of torture." He railed against common abuses of justice.
Women and the Enlightenment

*What were Enlightenment views about individuals?

Women writers tried to improve the status of women.

Wollstonecraft

Wollstonecraft held and argued the idea: “Women’s equality” (education, equal relationship between men and women in marriage, rights to participate in politics).

Impact of the Enlightenment

* What was the impact of the Enlightenment?

1. Enlightenment ideas strongly influenced American and French Revolutions.
2. They spread the idea of progress and importance of individuals.
3. They helped making society less religious and more worldly.
**SETTING THE STAGE**

The influence of the Scientific Revolution soon spread beyond the world of science. Philosophers admired Newton because he had used reason to explain the laws governing nature. People began to look for laws governing human behavior as well. They hoped to apply reason and the scientific method to all aspects of society—government, religion, economics, and education. In this way, the ideas of the Scientific Revolution paved the way for a new movement called the Enlightenment, or the Age of Reason. This movement reached its height in the mid-1700s.

**Two Views on Government**

The Enlightenment started from some key ideas put forth by two English political thinkers of the 1600s, Thomas Hobbes and John Locke. Both men experienced the political turmoil of England early in that century. However, they came to very different conclusions about government and human nature.

**Hobbes’s Social Contract**

Thomas Hobbes expressed his views in a work called *Leviathan* (1651). The horrors of the English Civil War convinced him that all humans were naturally selfish and wicked. Without governments to keep order, Hobbes said, there would be “war of every man against every man.” In this state of nature, as Hobbes called it, life would be “solitary, poor, nasty, brutish, and short.”

Hobbes argued that to escape such a bleak life, people gave up their rights to a strong ruler. In exchange, they gained law and order. Hobbes called this agreement, by which people created government, the social contract. Because people acted in their own self-interest, Hobbes said, the ruler needed total power to keep citizens under control. The best government was one that had the awesome power of a Leviathan (sea monster). In Hobbes’s view, such a government was an absolute monarchy, which could impose order and demand obedience.

**Locke’s Natural Rights**

The philosopher John Locke held a different, more positive, view of human nature. He believed that people could learn from experience and improve themselves. As reasonable beings, they had the natural ability to govern their own affairs and to look after the welfare of society. Locke criticized absolute monarchy and favored the idea of self-government.

According to Locke, all people are born free and equal, with three natural rights—life, liberty, and property. The purpose of government, said Locke, is to protect these rights. If a government fails to do so, citizens have a right to overthrow it. Locke
published his ideas in 1690, two years after the Glorious Revolution. His book, *Two Treatises on Government*, served to justify the overthrow of James II.

Locke's theory had a deep influence on modern political thinking. His statement that a government's power comes from the consent of the people is the foundation of modern democracy. The ideas of government by popular consent and the right to rebel against unjust rulers helped inspire struggles for liberty in Europe and the Americas.

**The Philosophes Advocate Reason**

The Enlightenment reached its height in France in the mid-1700s. Paris became the meeting place for people who wanted to discuss politics and ideas. The social critics of this period in France were known as *philosophes* (FIHL-uh-sah-fs), the French word for philosophers. The philosophers believed that people could apply reason to all aspects of life—just as Isaac Newton had applied reason to science. Five important concepts formed the core of their philosophy:

1. **Reason** Enlightened thinkers believed truth could be discovered through reason or logical thinking. Reason, they said, was the absence of intolerance, bigotry, or prejudice in one's thinking.

2. **Nature** The philosophers referred to nature frequently. To them, what was natural was also good and reasonable. They believed that there were natural laws of economics and politics just as there were natural laws of motion.

3. **Happiness** A person who lived by nature's laws would find happiness, the philosophers said. They were impatient with the medieval notion that people should accept misery in this world to find joy in the hereafter. The philosophers wanted well-being on earth, and they believed it was possible.

4. **Progress** The philosophers were the first Europeans to believe in progress for society. Now that people used a scientific approach, they believed, society and humankind could be perfected.

5. **Liberty** The philosophers envied the liberties that the English people had won in their Glorious Revolution and Bill of Rights. In France, there were many restrictions on speech, religion, trade, and personal travel. Through reason, the philosophers believed, society could be set free.

**Voltaire Combats Intolerance** Probably the most brilliant and influential of the philosophes was François Marie Arouet. Using the pen name Voltaire, he published more than 70 books of political essays, philosophy, history, fiction, and drama. Voltaire often used satire against his opponents. He made frequent targets of the clergy, the aristocracy, and the government. His sharp tongue made him enemies at the French court, and twice he was sent to prison. After his second jail term, Voltaire was exiled to England for two years. There, Voltaire came to admire the English government much more than his own. After he returned to Paris,
much of his work mocked the laws and customs of France. He even dared to raise doubts about the Christian religion. The French king and France’s Catholic bishops were outraged. In 1734, fearing another unpleasant jail term, Voltaire fled Paris.

Although he made powerful enemies, Voltaire never stopped fighting for tolerance, reason, freedom of religious belief, and freedom of speech. He used his quill pen as if it were a deadly weapon in a thinker’s war against humanity’s worst enemies—intolerance, prejudice, and superstition. Such attitudes were, he said, l’infinâme—infamous or evil things. He often ended his letters with a fighting slogan, “Écrasez l’infinâme!” (ay-crah-ZAY’ lahn-FAM). The phrase meant “Crush the evil thing!”

Montesquieu and the Separation of Powers Another influential French writer, the Baron de Montesquieu (MAHN-tuh-SKYO), devoted himself to the study of political liberty. An aristocrat and lawyer, Montesquieu studied the history of ancient Rome. He concluded that Rome’s collapse was directly related to its loss of political liberties.

Like Voltaire, Montesquieu believed that Britain was the best-governed country of his own day. Here was a government, he thought, in which power was balanced among three groups of officials. The British king and his ministers held executive power. They carried out the laws of the state. The members of Parliament held legislative, or lawmaking, power. The judges of the English courts held judicial power. They interpreted the laws to see how each applied to a specific case. Montesquieu called this division of power among different branches separation of powers.

Montesquieu oversimplified the British system (it did not actually separate powers this way). His idea, however, became a part of his most famous book, On the Spirit of Laws (1748). In his book, Montesquieu proposed that separation of powers would keep any individual or group from gaining total control of the government. “Power,” he wrote, “should be a check to power.” Each branch of government would serve as a check on the other two. This idea later would be called “checks and balances.”

Montesquieu’s book was admired by political leaders in the British colonies of North America. His ideas about separation of powers and checks and balances became the basis for the United States Constitution.

**Changing Idea: Government Powers**

<table>
<thead>
<tr>
<th>Old Idea</th>
<th>New Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monarch rules with absolute authority.</td>
<td>Separation of government powers among executive, legislative, and judicial branches.</td>
</tr>
</tbody>
</table>

**Rousseau: Champion of Freedom** A third great philosopher, Jean Jacques Rousseau (ruh-SOH), was passionately committed to individual freedom. The son of a poor Swiss watchmaker, Rousseau worked as an engraver, music teacher, tutor, and secretary. Eventually, Rousseau made his way to Paris and won recognition as a writer of essays. There he met and befriended other philosophers, although he felt out of place in the circles of Paris high society in which they traveled.

A strange, brilliant, and controversial figure, Rousseau strongly disagreed with other Enlightenment thinkers on many matters. Most philosophers believed that reason, science, and art would improve life for all people. Rousseau, however, argued that civilization corrupted people’s natural goodness. “Man is born free, and everywhere he is in chains,” he wrote. In the earliest times, according to Rousseau, people had lived as free and equal individuals in a primitive “state of nature.” As people became civilized, however, the strongest among them forced everyone else to obey unjust laws. Thus, freedom and equality were destroyed.

“Power should be a check to power.”
Baron de Montesquieu

“Man is born free, and everywhere he is in chains.”
Jean Jacques Rousseau

Enlightenment and Revolution 553
Rousseau believed that the only good government was one that was freely formed by the people and guided by the "general will" of society—a direct democracy. Under such a government, people agree to give up some of their freedom in favor of the common good. In 1762, he explained his political philosophy in a book called The Social Contract.

A VOICE FROM THE PAST
The heart of the idea of the social contract may be stated simply: Each of us places his person and authority under the supreme direction of the general will, and the group receives each individual as an indivisible part of the whole.

In order that the social contract may not be a mere empty formula, everyone must understand that any individual who refuses to obey the general will must be forced by his fellows to do so. This is a way of saying that it may be necessary to force a man to be free; freedom in this case being obedience to the will of all.

JEAN JACQUES ROUSSEAU, The Social Contract

Rousseau's view of the social contract differed greatly from that of Hobbes. For Hobbes, the social contract was an agreement between a society and its government. For Rousseau, it was an agreement among free individuals to create a society and a government.

Like Locke, Rousseau argued that legitimate government came from the consent of the governed. However, Rousseau believed in a much broader democracy than Locke had stood for. He argued that all people were equal and that titles of nobility should be abolished. Rousseau's ideas inspired many of the leaders of the French Revolution who overthrew the monarchy in 1789.

Beccaria Promotes Criminal Justice An Italian philosophe named Cesare Bonesana Beccaria (bay-kah-REE-ah) turned his thoughts to the justice system. He believed that laws existed to preserve social order, not to avenge crimes. In his celebrated book On Crimes and Punishments (1764), Beccaria railed against common abuses of justice. They included torturing of witnesses and suspects, irregular proceedings in trials, and punishments that were arbitrary or cruel. He argued that a person accused of a crime should receive a speedy trial, and that torture should never be used. Moreover, he said, the degree of punishment should be based on the seriousness of the crime. He also believed that capital punishment should be abolished.

Major Ideas of the Enlightenment

<table>
<thead>
<tr>
<th>Idea</th>
<th>Thinker</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rights—life, liberty, property</td>
<td>Locke</td>
<td>Fundamental to U.S. Declaration of Independence</td>
</tr>
<tr>
<td>Separation of powers</td>
<td>Montesquieu</td>
<td>France, United States, Latin American nations use separation of powers in new constitutions</td>
</tr>
<tr>
<td>Freedom of thought and expression</td>
<td>Voltaire</td>
<td>Guaranteed in U.S. Bill of Rights and French Declaration of the Rights of Man and Citizen; European monarchs reduce or eliminate censorship</td>
</tr>
<tr>
<td>Abolishment of torture</td>
<td>Beccaria</td>
<td>Guaranteed in U.S. Bill of Rights; torture outlawed or reduced in nations of Europe and the Americas</td>
</tr>
<tr>
<td>Religious freedom</td>
<td>Voltaire</td>
<td>Guaranteed in U.S. Bill of Rights and French Declaration of the Rights of Man and Citizen; European monarchs reduce persecution</td>
</tr>
<tr>
<td>Women's equality</td>
<td>Wollstonecraft</td>
<td>Women's rights groups form in Europe and North America</td>
</tr>
</tbody>
</table>

SKILLBUILDER: Interpreting Charts
1. What important documents reflect the influence of Enlightenment ideas?
2. In your opinion, which are the two most important Enlightenment ideas? Support your answer with reasons.
Beccaria based his ideas about justice on the principle that governments should seek the greatest good for the greatest number of people. His ideas influenced criminal law reformers in Europe and North America.

Women and the Enlightenment

The philosophes challenged many assumptions about government and society. But they often took a traditional view toward women. Rousseau, for example, developed many progressive ideas about education. However, he believed that a girl's education should mainly teach her how to be a helpful wife and mother. Other male social critics scolded women for reading novels because they thought it encouraged idleness and wickedness. Still, some male writers argued for more education for women and for women's equality in marriage.

Women writers also tried to improve the status of women. In 1694, the English writer Mary Astell published A Serious Proposal to the Ladies. Her book addressed the lack of educational opportunities for women. In later writings, she used Enlightenment arguments about government to criticize the unequal relationship between men and women in marriage. She wrote, “If absolute sovereignty best necessary in a state, how comes it to be so in a family? . . . If all men are born free, how is it that all women are born slaves?”

During the 1700s, other women picked up these themes. Among the most persuasive was Mary Wollstonecraft, who published an essay called A Vindication of the Rights of Woman in 1792. In the essay, she disagreed with Rousseau that women's education should be secondary to men's. Rather, she argued that women, like men, needed education to become virtuous and useful. Even if they are to be mothers, education will make them better mothers. Wollstonecraft also believed that women not only should be able to be nurses but also should be able to become doctors. She also argued for women's right to participate in politics.

Women made important contributions to the Enlightenment in other ways. In Paris and other European cities, wealthy women helped spread Enlightenment ideas through social gatherings called salons. (The importance of salons is discussed later in this chapter.)

One woman fortunate enough to receive education in the sciences was Emilie du Châtelet (shah-ley). Du Châtelet was an aristocrat trained as a mathematician and physicist. By translating Newton's work from Latin into French, she helped stimulate interest in science in France.

Impact of the Enlightenment

Over a span of a few decades, Enlightenment writers challenged long-held ideas about society. They examined such principles as the divine right of monarchs, the union of church and state, and unequal social classes. They held these beliefs up to the light of reason and found them unreasonable.

The philosophes mainly lived in the world of ideas. They formed and popularized new theories. Although they encouraged European monarchs to make reforms, they were not active revolutionaries. However, their theories eventually inspired the American and French revolutions and other revolutionary movements in the 1800s. Enlightenment thinking produced three other long-term effects that helped shape Western civilization.
Belief in Progress: The first effect was a belief in progress. Pioneers such as Galileo and Newton had discovered the key for unlocking the mysteries of nature in the 1500s and 1600s. With the door thus opened, the growth of scientific knowledge seemed to quicken in the 1700s. Scientists made key new discoveries in chemistry, physics, biology, and mechanics. The successes of the Scientific Revolution gave people the confidence that human reason could solve social problems. Philosophes and reformers urged an end to the practice of slavery. They also argued for more social equality and improvements in education. Through reason, a better society was possible.

A More Secular Outlook: A second outcome was the rise of a more secular, or worldly, outlook. During the Enlightenment, people began to openly question their religious beliefs and the teachings of the church. Before the Scientific Revolution, people accepted the mysteries of the universe as the mysteries of God. One by one, scientists discovered that these mysteries could be explained mathematically. Newton himself was a deeply religious man, and he sought to reveal God's majesty through his work. However, his findings caused some people to change the way they thought about God. Voltaire and other critics attacked some of the beliefs and practices of organized Christianity. They wanted to rid religious faith of superstition and fear and promote tolerance of all religions.

Importance of the Individual: Faith in science and in progress produced a third outcome—the rise of individualism. As people began to turn away from the church and royalty for guidance, they looked to themselves instead.

The philosophes encouraged people to use their own ability to reason in order to judge what is right or wrong. They also emphasized the importance of the individual in society. Government, they argued, was formed by individuals to promote their welfare. The British thinker Adam Smith extended the emphasis on the individual to economic thinking. He believed that individuals acting in their own self-interest created economic progress. Smith’s theory is discussed in detail in Chapter 25.

During the Enlightenment, reason took center stage. The greatest minds of Europe followed each other’s work with interest and often met to discuss their ideas. Some of the kings and queens of Europe were also very interested. As you will learn in Section 3, they sought to apply some of the philosophes’ ideas to create progress in their countries.

1. TERMS & NAMES

Identify
- Enlightenment
- social contract
- John Locke
- natural rights
- philosophes
- Voltaire
- Montesquieu
- separation of powers
- Jean Jacques Rousseau
- Mary Wollstonecraft

2. TAKING NOTES

In a chart like the one below, list the important ideas of Hobbes, Locke, Voltaire, Montesquieu, Rousseau, Baccaria, and Wollstonecraft.

<table>
<thead>
<tr>
<th>Thinker</th>
<th>Key Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
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</tbody>
</table>

Choose one of these thinkers and write a paragraph on how his or her ideas are influential today.

3. SYNTHESIZING

For each of the statements below, identify who said it and explain what it means. Then say how each viewpoint reflects Enlightenment ideas.

- “Power should be a check to power.”
- “Man is born free, and everywhere he is in chains.”
- “Let women share the rights and she will emulate the virtues of men.”

4. ANALYZING THEMES

Power and Authority
Compare the views of Hobbes, Locke, and Rousseau on government. How do their differing ideas reflect their understanding of human behavior?

THINK ABOUT
- how each philosopher viewed the "state of nature"
- what each considered the source of a government's authority
Lesson 3
Written Narrative to Fellow Teachers

Lesson 3 Topic: The Spread of Enlightenment Ideas
Unit Topic: Enlightenment and Revolution, 1550 – 1789
High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.

In this lesson I applied various strategies throughout. I started with lesson objectives to know students with key ideas for this lesson. I applied appropriate guides, modified texts, written definitions of the key words and phrases, highlighted words, background information, group work, class discussion and writing prompts. The teacher acts as a facilitator in helping students to organize the group or class discussion by providing handouts, modeling language, repetitions, language prompts or L1 support to conduct successful activities. Students also will do a research paper – as a form of encouraging ELLs to work independently. Assessment is done through oral discussions and written assignments. Rubrics for assigning a grade should be modified for ELLs according to language proficiency of the students.

A world map should be displayed in the classroom during all the time working on this unit, so students can refer to it when it is necessary. An overhead projector should be used for modeling and reviewing.
Language Objectives, Content Objectives and Performance Indicators

High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.
Unit Topic: Enlightenment and Revolution, 1550 – 1789
Lesson 3 Topic: The Spread of Enlightenment Ideas

<table>
<thead>
<tr>
<th>Content Objectives</th>
<th>Language Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) To explain how Enlightenment ideas spread throughout Europe.</td>
<td>1) During a whole group discussion, students will orally be able to refer Paris salons, Diderot’s Encyclopedia, and new ideas circulation spreading the Enlightenment ideas throughout Europe.</td>
</tr>
<tr>
<td>2) To describe changes in art, music, and literature during the Enlightenment.</td>
<td>2) Working in groups of four or five, students will be able to write a paragraph describing the new artistic styles, the great music composers, and entertaining stories which began to circulate during the Enlightenment; then presenting to the whole class.</td>
</tr>
<tr>
<td>3) To describe how Enlightenment ideas reformed monarchies in Prussia, Austria, and Russia.</td>
<td>3) Working in groups of four or five, students will be able to analyze the role of Enlightenment ideas in creating of a new government system in Prussia, Russia, and Austria, and then presenting to the whole class.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain/Topic</th>
<th>Fluent Bridging Level 5</th>
<th>Expanding Fluency Level 4</th>
<th>Speech Emerging Level 3</th>
<th>Early Production Level 2</th>
<th>Preproduction Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading, Speaking, Listening</strong> Philosophers, writers, artists, scientists who spread the Enlightenment ideas throughout Europe.</td>
<td>During a whole group discussion, students will describe Paris salons, Diderot’s Encyclopedia, and new ideas circulation spreading the Enlightenment ideas throughout Europe using complete sentences.</td>
<td>During a whole group discussion, students will describe Paris salons, Diderot’s Encyclopedia, and new ideas circulation spreading the Enlightenment ideas throughout Europe using phrases and short sentences.</td>
<td>During a whole group discussion, students will describe Paris salons, Diderot’s Encyclopedia, and new ideas circulation spreading the Enlightenment ideas throughout Europe using language prompts provided by the teacher.</td>
<td>During a whole group discussion, students will describe Paris salons, Diderot’s Encyclopedia, and new ideas circulation spreading the Enlightenment ideas throughout Europe by pointing to the picture clues and using L1 support.</td>
<td></td>
</tr>
<tr>
<td>Reading, Writing, Speaking &amp; Listening</td>
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<td>---------------------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Art and literature in the age of reason.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working in groups of four or five, students will write a paragraph describing the new artistic styles, the great music composers, and entertaining stories which began to circulate during the Enlightenment using complete sentences, and then presenting to the whole class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading, Speaking, Listening</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enlightenment ideas create a new American government system.</strong></td>
</tr>
<tr>
<td>Working in groups of four or five, students will describe the role of Enlightenment ideas in creating a new government system in Prussia, Russia, and Austria using complete sentences, and then presenting to the whole class.</td>
</tr>
</tbody>
</table>
## Functional/Notional Chart: Lesson 3: The Spread of Enlightenment Ideas

<table>
<thead>
<tr>
<th>Function</th>
<th>Situation</th>
<th>Expression</th>
<th>Word/Phrase</th>
<th>Grammar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and name.</td>
<td>The spread of the Enlightenment ideas throughout Europe.</td>
<td>1 spread</td>
<td>1. The Paris salons, Diderot's Encyclopedia, New ideas circulation.</td>
<td>* Subjects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 the Enlightenment ideas by</td>
<td>2. philosophers, writers, artists, scientists; a large set of books; newspapers, pamphlets and political songs.</td>
<td>* Prepositional objects</td>
</tr>
<tr>
<td>Identify and name.</td>
<td>New artistic styles under the influence of the Enlightenment.</td>
<td>a was</td>
<td>a. Baroque, Neoclassical.</td>
<td>* Proper nouns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>b. a grand, ornate style; a simple style that borrowed ideas from Greece and Rome;</td>
<td>* Common nouns</td>
</tr>
<tr>
<td>Identify and name.</td>
<td>Enlightened despots in Prussia, Austria, and Russia.</td>
<td>1 was</td>
<td>1. Frederick the Great, Catherine the Great, Joseph II.</td>
<td>* Subject noun predicates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2. the king of Prussia, a Russian ruler, Austrian.</td>
<td>* Subject noun predicates</td>
</tr>
</tbody>
</table>
Lesson Plan 3: The Spread of Enlightenment Ideas

High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.
Unit Topic: Enlightenment and Revolution, 1550 – 1789

Key: SW = Students will... ; TW = Teacher... ; SWBAT = Students will be able to ... ; HOTS = Higher Order Thinking Skills


Hots: What other ways could be used to spread the Enlightenment ideas?

Visuals/Resources/Supplementary Materials: Text book, word wall, world map, pictures, and handouts (modified text – for English language learners, and other sheets for different activities).

Activities with Modifications for Students who are English Language Learners:

Procedure (45-60 min. class)

1. Initiation – TW will read the daily class objectives, and SW restate them too. TW focus on the words “Enlightenment ideas; changes in art, music and literature; Enlightenment ideas reformed monarchies in Prussia, Austria and Russia.” He/she will ask students to repeat these words (a way to make students concentrate on them) which are the main key ideas for this class. (5-7 minutes)

2. Connections to Prior Knowledge/Building Background (12-15 minutes)

– Before starting this activity, TW ask students to state the name of their individual country in L2 or L1 to see if there is anyone from the countries that they are going to focus on this class. Then TW ask students to explain what they know about the people and concepts given on the word wall (see pg. 67) illustrating with pictures (see pages 70-72) and in the world map too. Also, students will get a handout which is helpful for them, and teacher’s support too to complete this activity.
Students of level 4 & 5 will use the handout “Terms and Names” on pg. 68.
Students of level 1, 2 and 3 will use the handout “Terms and Names” on pg. 69.

3a. – First, students will read individually and silently the section “A World of Ideas” assigned to discuss about the ways how the Enlightenment ideas spread from individual to individual. (5 minutes)
Level 5 and 4 will use the modified text, pages 81-82.
Level 3, 2 and 1 will use the modified text, pages 76-77.

3b. – Then, it will be a full class discussion about the question: “How did Enlightenment ideas spread from individual to individual?” ELLs will use the same materials as in 3b, key words and phrases given on the word wall (see pg. 67), language prompts provided by the teacher (depends on the situation), and L1 support when it is needed. (5 minutes)

4. – TW place students in groups of 4 or 5 (heterogeneously with students of different levels) naming them group A, B, and C. Group A will have the handout on pg. 73, group B will have the handout on pg. 74, and group C will have the handout on pg. 75. Then TW give students 7-10 minutes to discuss, to share their ideas and information, and then to write a paragraph describing the new artistic styles – assigned for group A, the great music composers – assigned for group B, and entertaining stories which began to circulate during the Enlightenment – assigned for group C. After students will be done with their group work, they will share to the whole class. Also, they can ask or add anything for any misunderstanding. (10-12 minutes)
To complete this activity:

Students of level 5 included in group A will use the original text, pages 559 & 560.
Students of level 5 included in group B will use the original text on pg. 559.
Students of level 5 included in group C will use the original text, page 559 & 561.
Students of level 4 included in group A will use the modified text, pages 82-83.
Students of level 4 included in group B will use the modified text, pages 82.
Students of level 4 included in group C will use the modified text, pages 82-84.
Students of level 1, 2 and 3 included in group A will use the modified text, page 77.
Students of level 1, 2 and 3 included in group B will use the modified text, page 78.
Students of level 1, 2 and 3 included in group C will use the modified text, page 78.

5a. – TW place students in groups of 4 or 5 (heterogeneously with students of different levels) naming them group A, B, and C. Then TW give students 5-7 minutes to discuss, share ideas and information on how Enlightenment ideas reformed monarchies in Prussia (Frederick the Great) – assigned for group A, Austria (Joseph II) – assigned for group B, and Russia (Catherine the Great) – assigned for group C.

Level 5 will use original text, pg. 561 – group A, pg. 561 & 562 – group B, and pg. 562 – group C.
Level 4 will use modified text, pg. 84 – group A, pg. 85 – group B, and pg. 85 – group C.
Level 1, 2 and 3 will use modified text, pg. 79 – group A, pg. 79 – group B, and pg. 80 – group C.
5b. – Then TW pick randomly 3 groups (A, B, C) to share their ideas to the whole class. Also, students can make questions, or they can add information regarding to the topic. (8-12 minutes – 5a. & 5b.)

6. – **Homework assignment:** SW pick a historical figure of the Enlightenment (one from this list: Hayden, Mozart, Beethoven, Frederick the Great, Joseph II, Catherine the Great), and they will write a research paper using different sources.

Students of level 5 will use the original text, pages 558-562 and their own internet sources. Students of level 4 will use the modified text, pages 81-85 and their own internet sources. Students of level 1, 2 and 3 will use the modified text, pages 76-80, pictures and other information from their own internet sources.
Lesson 3 Topic: The Spread of the Enlightenment Ideas
Word wall for key words and phrases in the text.

The Paris salons  Baroque

Diderot's Encyclopedia

New ideas circulation  Neoclassical

Enlightened

Frederick the Great  Despot

Catherine the Great

Classical music  Franz Joseph Haydn

Joseph II  Wolfgang Amadeus Mozart

Ludwig von Beethoven
Modified Lesson Material

Terms & Names

Chapter 22: Enlightenment and Revolution, 1550-1789

Section 3: The Spread of Enlightenment Ideas, pages 558-562

**Salon** - social gathering for discussing ideas or enjoying art.

**Encyclopedia** – first book leading scholars of Europe put articles and essays.

**Ideas circulation** – newspapers, pamphlets and political songs.

**Baroque** - grand, ornate style.

**Neoclassical** - simple style that borrowed ideas from classical Greece and Rome.

**Despot** - Cruel and aggressive dictator.

**Enlightened Despot** - ruler who supported Enlightenment ideas but did not give up power.

**Catherine the Great** - Russian ruler who took steps to reform and modernize Russia.

**Frederick the Great** – the king of Prussia from 1748 to 1786.

**Joseph II** – ruled Austria from 1780 to 1790.
Modified Lesson Material
Terms & Names

Chapter 22: Enlightenment and Revolution, 1550-1789

Section 3: The Spread of Enlightenment Ideas, pages 558-562

Salon - social gathering

Encyclopedia – first book leading scholars of Europe

Ideas circulation – newspapers, pamphlets and political songs.

Baroque - grand, ornate style.

Neoclassical - simple ornate style

Despot - dictator.

Enlightened Despot - supported Enlightenment ideas

Catherine the Great - Russian ruler

Frederick the Great – the king of Prussia

Joseph II – ruled Austria
ENCYCLOPÉDIE,
OU
DICTIONNAIRE RAISONNÉ
DES SCIENCES,
DES ARTS ET DES MÉTIERS.
PAR UNE SOCIÉTÉ DE GENS DE LETTRES.

Titre page of Encyclopedia
Frederick II (Frederick the Great)

Joseph II of Austria

Catherine the Great
Group A

Write a short paragraph where you will describe the **new artistic styles**
during the Enlightenment. (*Paragraph 1 & 2 under the “Art and Literature in the Age of Reason” section on pg. 559 and the information on pg. 560 and your internet sources will help you to complete this activity.*)

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Group B

Write a short paragraph where you will describe the **great music composers** during the Enlightenment. (*Paragraph "Classical Music" under the "Art and Literature in the Age of Reason" section on pg. 559 and your internet sources will help you to complete this activity.*)
Group C

Write a short paragraph where you will describe the entertaining stories which began to circulate during the Enlightenment. (Paragraph “Popularity of the Novel” under the “Art and Literature in the Age of Reason” section on pg. 559 and 561, and their own internet sources will help you to complete this activity.)
Main idea: Enlightenment ideas spread through the western world and influenced the arts and government.


A world of Ideas

*How did ideas spread from individual to individual?*

1. Ideas were spread in salons (large drawing rooms where women entertained philosophers, writers, artists, and intellects met to discuss ideas and enjoy artistic performances). Paris was the cultural center of Europe. Marie-Therese Geoffrin was the most influential of salon hostess.

Madame Geoffrin's salon in 1755.
2. Denis Diderot created an Encyclopedia (first book leading scholars of Europe put articles and essays) containing current ideas about science, art and government.

Title page of Encyclopedia

3. Ideas were also spread through ideas circulation (newspapers, pamphlets and political songs).

Art and Literature in the Age of Reason

*How did art and literature change?

- Under the influence of the Enlightenment, styles began to change.
1. During the 1600 & 1700, a grand and ornate style flourished in Europe. It was called **baroque**.
2. The new artistic style, **neoclassical** (simple style that borrowed ideas from classical Greece and Rome) emphasized order and balance. It was more elegant and original.

Baroque Style  The White House-Neoclassical Style
3. The Enlightenment led to classical music with famous composers like Haydn, Mozart, and Beethoven. Franz Joseph Haydn developed the sonata and the symphony. Amadeus Mozart wrote operas such as The magic Flute & The Marriage of Figaro. Beethoven wrote beautiful piano music, string quartets and string symphonies.

4. Writers also developed new styles and forms of literature. Novels, like “Tom Jones” and “Pamela” written by Henry Fielding and Samuel Richardson presented entertaining stories written in everyday English. They appealed to the middle class.

Enlightenment and Monarchy

*Who were the enlightenment despots?

The Enlightenment despots (absolute rulers) wanted to make their countries stronger and their own rule more effective.

1. Frederick II (Frederick the Great)
* Frederick the Great committed himself to reforming Prussia.

* Reforms included:
  - Allowing more religious freedom
  - Improving education
  - Reduced censorship
  - Reformed the criminal justice system and eliminated torture
  - Called himself “The first Servant of the State” – main goal to serve and strengthen the state.

2. Joseph II of Austria

The most radical royal reformer was Joseph II of Austria.
  - He introduced legal reforms and freedom of the press.
  - Religious tolerance – even for Jews and Protestants.
  - Got rid of serfdom and insisted that peasants get $.
3. Catherine the Great

- **Catherine the Great** ruled **Russia** with absolute authority. She also modernized and reformed the country.
- She was influenced by Beccaria, Montesquieu and Voltaire.
- She never helped the Russian peasants. She eventually gave the nobles absolute authority over their serfs.
- She expanded Russia and Russia soon became an international power.
The Spread of Enlightenment Ideas

MAIN IDEA
Enlightenment ideas spread through the Western world and profoundly influenced the arts and government.

WHY IT MATTERS NOW
An "enlightened" problem-solving approach to government and society prevails in modern civilization today.

SETTING THE STAGE
The philosophes' views often got them in trouble. In France it was illegal to criticize either the Catholic Church or the government. Many philosophes landed in jail or were exiled. Voltaire, for example, experienced both punishments. Nevertheless, Enlightenment ideas spread throughout Europe.

A World of Ideas
In the 1700s, Paris was the cultural and intellectual capital of Europe. Young people from around Europe—and also from the Americas—came to study, philosophize, and enjoy fine culture. The brightest minds of the age gathered there. From their circles radiated the ideas of the Enlightenment.

The Paris Salons
The buzz of Enlightenment ideas was most intense in the mansions of several wealthy women of Paris. There, in their large drawing rooms, these hostesses held regular social gatherings called salons. At these events, philosophers, writers, artists, scientists, and other great intellects met to discuss ideas and enjoy artistic performances.

The most influential of the salon hostesses in Voltaire's time was Marie-Thérèse Geoffrin (zhuh-frehn). Self-educated and from the well-to-do middle class, Madame Geoffrin was friends with both philosophes and heads of state. She corresponded with the king of Sweden and Catherine the Great of Russia.

Diderot's Encyclopedia
Madame Geoffrin also helped finance the project of a leading philosophe named Denis Diderot (DEE-uh-ROH). Diderot imagined a large set of books to which all the leading scholars of Europe would contribute articles and essays. This Encyclopedia, as he called it, would bring together all the most current and enlightened thinking about science, technology, art, government, and more. Diderot began publishing the first volumes in 1751.
The Enlightenment views expressed in the articles soon angered both the French government and the Catholic Church. Their censors banned the work. They said it undermined royal authority, encouraged a spirit of revolt, and fostered “moral corruption, irreligion, and unbelief.” Fearing arrest, some leading philosophes withdrew from the project and urged Diderot to quit. Diderot pressed on, however, and finally won permission to continue publishing the Encyclopaedia. New volumes came out regularly under his editorship until 1772.

**New ideas Circulate** The salons and the Encyclopaedia helped spread Enlightenment ideas to educated people all over Europe. The enlightened thinkers of Europe considered themselves part of an intellectual community. They shared their ideas through books, personal letters, visits back and forth, and magazine articles. As one writer of the day described the flurry of communication, “Never have new ideas had such rapid circulation at such long distance.”

Enlightenment ideas also eventually reached middle-class people through newspapers, pamphlets, and even political songs. Enlightenment ideas about government and equality attracted the attention of a growing literate middle class. This group had money but limited status and political power. With their money, middle-class people could afford to buy many books and support the work of artists. Through its purchasing power, this group had growing influence over European culture in the 1700s.

**Art and Literature in the Age of Reason**

The Enlightenment ideals of order and reason were reflected in the arts—music, literature, painting, and architecture. European art of the 1600s and early 1700s had been dominated by the style called baroque—a grand, ornate style. Monarchs had built elaborate palaces such as Versailles (see page 521). Musicians like the German composer Johann Sebastian Bach and the English composer George Frederick Handel had written dramatic organ and choral music. Artists had created paintings rich in color, detail, and ornate imagery.

Under the influence of the Enlightenment, styles began to change. The arts began to reflect the new emphasis on order and balance. Artists and architects worked in a simple and elegant style that borrowed ideas and themes from classical Greece and Rome. The style of the late 1700s is therefore called neoclassical (“new classical”). In music, the style of this period is called classical.

**Classical Music** Three composers in Vienna, Austria, rank among the greatest figures of the classical period in music. They were Franz Joseph Haydn, Wolfgang Amadeus Mozart, and Ludwig van Beethoven.

Haydn was particularly important in developing new musical forms, such as the sonata and symphony. Mozart was a gifted child who began composing music at the age of five and gave concerts throughout Europe as a youth. At 12, he wrote his first opera. Mozart’s great operas—The Marriage of Figaro, Don Giovanni, and The Magic Flute—set a new standard for elegance and originality. Although he lived only to age 35, he wrote more than 600 musical works.

Beethoven showed enormous range in his work. He wrote beautiful piano music, string quartets, and stirring symphonies. Beethoven’s earlier works were in the same classical style as Mozart’s. However, his later compositions began new trends, which carried music into the Age of Romanticism.

**Popularity of the Novel** Writers in the 18th century also developed new styles and forms of literature. A number of European authors began writing novels—lengthy works of prose fiction. These books were popular with a wide middle-class audience.

This detail of *Seated Woman with Book*, by French artist Jean-Baptiste Chardin, shows a middle-class woman whose interests include reading. In the 1700s, the middle class had more leisure time for such pursuits.
Art in the Age of Enlightenment

The Enlightenment influenced many European painters of the middle and late 1700s. Increasingly, artists looked for inspiration in the material world—in nature and human nature. Some artists showed an Enlightenment interest in science and social issues in their work. Others emphasized a new sensitivity toward individuals.

The Individual
The French painter Elisabeth-Louise Vigée-Le Brun was one of the most celebrated portrait artists of the late 1700s. She was the favorite painter of Queen Marie Antoinette of France. Her portraits bring out the personalities of her subjects. Her own energy, success, and independence also reflected the Enlightenment spirit. These qualities shine through this detail of a self-portrait with her daughter.

The Promise of Science
The English artist Joseph Wright of Derby was fascinated by science and its impact on people’s lives. The painting below, *Philosopher Giving a Lecture on the Orrery*, shows children and adults gazing into a miniature planetarium. The way Wright uses light in this picture makes a point about how science can educate and enlighten people.

Politics and Society
The English artist William Hogarth often used satire in his paintings. In the painting above, *Canvassing for Votes*, he comments on politi corruption. While the candidate flirts with the ladies on the balcony, his supporters offer a man money for his vote. Hogarth’s detailed, realistic portrayal of moralistic topics were meant to appeal to a wide middle-class audience.

Connect to History
Analyzing Issues Imagine you are a philosophe who moonlights as an art critic. For each of these paintings, write a brief statement about how it reflects Enlightenment ideas.

Connect to Today
Updating a Picture Choose one of the paintings on this page and think about how you might change it to depict politics, science, or people today. You might describe the modern version in words or using a sketch or other kind of artwork.
who liked the entertaining stories written in everyday language. Writers—including many women—turned out a flood of popular novels in the 1700s.

English novelists such as Samuel Richardson and Henry Fielding developed many of the features of the modern novel. Their works had carefully crafted plots, used suspense and climax, and explored their characters' thoughts and feelings. Richardson's *Pamela* is often considered the first true English novel. It told the story of a young servant girl who refused the advances of her master. In Fielding's comic masterpiece *Tom Jones*, the hero of the book is an orphan who has been kicked out of his adopted home. He travels all over England and overcomes numerous obstacles to win the hand of his lady.

A third popular English novelist was Daniel Defoe, author of the adventure novel *Robinson Crusoe*. Crusoe is a sailor stranded on a tropical island. Through his wits and the help of a native he calls Friday, Crusoe learns how to survive on the island and is eventually rescued.

**Enlightenment and Monarchy**

From the salons, artists' studios, and concert halls of Europe, the Enlightenment spirit also swept through Europe’s royal courts. Many philosophers, including Voltaire, believed that the best form of government was a monarchy in which the ruler respected the people’s rights. The philosophes tried to convince monarchs to rule justly. Some monarchs embraced the new ideas and made reforms that reflected the Enlightenment spirit. They became known as enlightened despot. Despot means absolute ruler.

The enlightened despots supported the philosophes’ ideas. But they also had no intention of giving up any power. The changes they made were motivated by two desires: they wanted to make their countries stronger and their own rule more effective. The foremost of Europe’s enlightened despots were Frederick II of Prussia, Holy Roman Emperor Joseph II of Austria, and Catherine the Great of Russia.

**Frederick the Great** Frederick II, the king of Prussia from 1740 to 1786, once wrote to Voltaire: "I must enlighten my people, cultivate their manners and morals, and make them as happy as human beings can be, or as happy as the means at my disposal permit." Frederick indeed committed himself to reforming Prussia. He granted many religious freedoms, reduced censorship, and improved education. He also reformed the justice system and abolished the use of torture. However, Frederick's changes only went so far. For example, he believed that serfdom was wrong, but he did nothing to end it. This was because he needed the support of wealthy landowners. As a result, he never challenged the power of the Junkers or tried to change the existing social order.

Perhaps Frederick’s most important contribution was his attitude toward being king. He called himself “the first servant of the state.” From the beginning of his reign, he made it clear that his goal was to serve and strengthen his country. This attitude was clearly one that appealed to the philosophes.

### Changing Idea: Relationship Between Ruler and State

<table>
<thead>
<tr>
<th>Old Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>The state and its citizens exist to serve the monarch—as Louis XIV reportedly said, “I am the state.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>The monarch exists to serve the state and support citizens' welfare—as Frederick the Great said, a ruler is only “the first servant of the state.”</td>
</tr>
</tbody>
</table>

**Joseph II** The most radical royal reformer was Joseph II of Austria. The son and successor of Maria Theresa, Joseph II ruled Austria from 1780 to 1790. He introduced legal reforms and freedom of the press. He also supported freedom of worship—even for Protestants, Orthodox Christians, and Jews. In his most radical reform, Joseph abolished serfdom and ordered that peasants be paid for their labor with cash. Not
surprisingly, the nobles firmly resisted this change. Like many of Joseph's reforms, it was undone after his death.

Catherine the Great  The ruler most admired by the philosophers was Catherine II, known as Catherine the Great. She ruled Russia from 1762 to 1796. The well-educated empress read the works of philosophers, and she exchanged many letters with Voltaire. She ruled with absolute authority, but she also took steps to modernize and reform Russia.

In 1767, Catherine formed a commission to review Russia's laws. She presented it with a brilliant proposal for reforms based on the ideas of Montesquieu and Beccaria. Among other changes, she recommended allowing religious toleration and abolishing torture and capital punishment. Her commission, however, accomplished none of these lofty goals. Catherine eventually put in place limited reforms, but she did little to improve the life of the Russian peasants. Her thinking about enlightened ideas changed after a massive uprising of serfs in 1773.

With great brutality, Catherine's army crushed the rebellion. Catherine had previously favored an end to serfdom. However, the revolt convinced her that she needed the nobles' support to keep her throne. Therefore, she gave the nobles absolute power over the serfs. As a result, Russian serfs lost their last traces of freedom.

Catherine Expands Russia  Peter the Great had fought for years to win a port on the Baltic Sea. Likewise, Catherine sought access to the Black Sea. In two wars with the Ottoman Turks, her armies finally won control of the northern shore of the Black Sea. Russia also gained the right to send ships through Ottoman-controlled straits leading from the Black Sea to the Mediterranean Sea.

Catherine also expanded her empire westward into Poland. In Poland, the king was relatively weak, and independent nobles held the most power. The three neighboring powers—Russia, Prussia, and Austria—each tried to assert their influence over the country. In 1772, these land-hungry neighbors each took a piece of Poland in what is called the First Partition of Poland. In further partitions in 1793 and 1795, they grabbed up the rest of Poland's territory. With these partitions, Poland disappeared from the map of Europe. It did not reappear as an independent country until after World War I.

By the end of her remarkable reign, Catherine had vastly enlarged the Russian empire. Meanwhile, as Russia was becoming an international power, another great power, Britain, faced a challenge in its 13 American colonies. Inspired by Enlightenment ideas, colonial leaders decided to cast off British rule and found an independent republic.

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Section Assessment

1. TERMS & NAMES
   Identify
   • salon
   • baroque
   • neoclassical
   • enlightened despot
   • Catherine the Great

2. TAKING NOTES
   Copy the concept web shown below and add to it examples that illustrate the concepts.
   
   Spread of Enlightenment Ideas
   
   monarchy

3. DRAWING CONCLUSIONS
   What advantages do you think salons had over earlier forms of communication in spreading new ideas? Justify your response with specific references to the text.

   THINK ABOUT
   • who hosted the salons and where they were held
   • who was invited to the salons
   • church and state influence on publishing and education

4. THEME ACTIVITY
   Power and Authority
   Imagine you are a public relations consultant for Frederick the Great, Joseph II, or Catherine the Great. The monarch you represent wants to be named "Most Enlightened Despot of the 1700s." Write a press release or design a poster or flyer that presents reasons why your client should be given this honor.
Wilby High School

Bi-Weekly Lesson/Unit Plan Design

<table>
<thead>
<tr>
<th>Name: Ron Napoli</th>
<th>Date:</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Unit Title: The Scientific Revolution</th>
<th>Length of Lesson/Unit: 4 to 5 days</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Understandings:</th>
<th>Essential Questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the mid-1500’s, scientists began to question accepted beliefs and make new theories based on experimentation.</td>
<td>What defines a turning point?</td>
</tr>
<tr>
<td></td>
<td>How does the individual influence world events?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A revolution in intellectual activity changes Europeans’ view of government and society.</th>
<th>How might advances in science and technology affect society?</th>
</tr>
</thead>
</table>

| An “enlightenment” problem-solving approach to government and society prevails in modern civilization today. |

Create: What are the student objectives?

Reflective Questions:

- How do the student objectives support the student in meeting the Wilby and State Standards?
- How do the student objectives reflect varied learning styles?

School Mission Student Expectations Codes:

CT = Complex Thinker
CC = Community Contributor
ECP = Effective Communicator/Producer
CCW = Collaborative/Cooperative Worker
KP = Knowledgeable Person
SDL = Self-Directed Learner
SIP = Skilled Information Processor

<table>
<thead>
<tr>
<th>Standards</th>
<th>Objectives</th>
<th>Student Expectations- see code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wilby Curriculum Objectives- based on CSDE Standards</td>
<td>The student will be able to list the circumstances that led to the Scientific Revolution. Students will describe the importance of the scientific method in different fields.</td>
<td></td>
</tr>
<tr>
<td>Literacy Objectives</td>
<td>Students will conduct a “chunking” activity using to compare and contrast John Locke and Thomas Hobbs views on government.</td>
<td></td>
</tr>
<tr>
<td>Numeracy Objectives</td>
<td>Students will infer a graph</td>
<td></td>
</tr>
<tr>
<td>Research Objectives</td>
<td>Students will research how major ideas of the Enlightenment impacted the found fathers view toward government.</td>
<td></td>
</tr>
<tr>
<td>Technology Objectives</td>
<td>Students will utilize tools and instruments in an interdisciplinary activity to understand how scientists had to make precise observations.</td>
<td></td>
</tr>
</tbody>
</table>

Reflective Questions to Consider:

- How do the assessments enable students to apply their knowledge and skills to the real world?
- How do the assessments enable students to show their understanding orally and/or in writing?
- How do the assessments reflect varied learning styles?

Performance Based Assessment:

Extended written product: essay, lab report, research paper
Visual Product: power point show, mural, movie
Oral performance: Oral report, dialogue, debate

Summative assessment (attached)

Collaborative Instruction: Distribute a copy of the United States Constitution to students. Place
Demonstration: skill performance in Phys. Ed
Reflective journal or learning log
Self Assessment using criteria

students into groups of four with a list of the following thinkers: Locke, Montesquieu, Voltaire, Beccaria, Wollstonecraft. Have them list each if their philosophical principals. Second have them highlight where each specific principal applies to the Constitution.

Science log (Interdisciplinary activity)

<table>
<thead>
<tr>
<th>Traditional Assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Response format (Multiple Choice, True-False Quizzes and Tests)</td>
</tr>
<tr>
<td>Written-oral responses to academic prompts (short answer format)</td>
</tr>
<tr>
<td>Homework</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative assessment (attached)</td>
</tr>
<tr>
<td>All homework assignments political cartoons are attached</td>
</tr>
</tbody>
</table>

Instructional Design:

Reflective Questions:
How does your instructional plan for the unit allow students to build background knowledge, identify new information, construct meaning and apply information? *(These questions should not be generic and repeated from week to week.)*

The Scientific Revolution

Distribute or review a KWL chart to modify unit and learning goals.

Introduce the essential questions and why they were selected for this unit.

Introduce the following concepts on the word wall:
- Scientific Revolution
- Nicolaus Copernicus
- Heliocentric theory
- Johannes Kepler
- Galileo Galilei
- Scientific Method
- Francis Bacon
- Rene Descartes
- Issac Newton

Discuss with students the Heliocentric Theory. Have them explain or predict conflicts with the Catholic Church.

Discuss Francis Bacon and Rene Descartes in the role of the Scientific method.

Have a min-lecture on Newton’s laws of gravity explains how the same physical laws govern motion on the earth and heavens.

Collaborative Instruction
Place students into groups of four and create a Scientific Revolution Discovery Board. Use the categories: Astronomy, Science, Medicine, Chemistry, and Biology. Include important people, ideas, and accomplishments. (collaborative rubric)

Have a share-out on the lesson.

Assign and distribute readings for the following lesson.

The Enlightenment in Europe

Re-introduce essential questions and their importance to the subject.

Review the following social studies concepts from the word wall:
- Enlightenment
The Spread of Enlightenment Ideas

At the beginning of class, have a copy of the Encyclopedia and Wikipedia on the PPT. Explain how this source of knowledge changes of time, but was a result on Enlightenment ideas.

Revisit essential question

Formative assessment

Introduce Catherine the Great (1729-1796)

American Revolution: The Birth of a Republic

Review the Catherine the Great as the leader of Russia (5min) (if needed)

- Declaration of Independence
- Thomas Jefferson
- Checks and Balances
- Federal System
- Bill of Rights

Ask students to record any information they may have on the concepts above. Then explain them to students and ask them if their predications are confirmed.

Ask students: How does the opening statement of the Declaration of Independence (p. 564) reflect enlightenment thinking?

Follow- activity (see attached options depending on the learning style of the class)

Review

Summative Assessment
**Reflective Questions:**
- What worked well and why in the unit?
- What didn’t work well and why?
- How would you change the unit?

<table>
<thead>
<tr>
<th>Date</th>
<th>Reflection</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All modifications and adaptations must be implemented made in conjunction with specific students IEP’s.</td>
<td>Continue with the process</td>
</tr>
<tr>
<td></td>
<td>The strategic system of grouping students working out well.</td>
<td>More time should be allocated</td>
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<tr>
<td></td>
<td>Summative assessment needs to be modeled for students</td>
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</tr>
<tr>
<td></td>
<td>87.3 was the class mean on the summative assessment</td>
<td></td>
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<tr>
<td></td>
<td>Upcoming class for the (577 students) need addition “chunking” lessons of primary source documents.</td>
<td></td>
</tr>
</tbody>
</table>
**Wilby High School**
**Weekly Lesson Plan**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Unit Title:</th>
<th>Week ____ of ____:</th>
</tr>
</thead>
</table>

**Reflective Questions:**
- What activities will students engage in to access prior knowledge? You may use the Essential Questions.

**Initiation:**

**Instructional Practices:**

**Reflective Questions:**
- How will the week's instruction reflect a range of instructional practices?
- How will you personalize your instructional activities to reflect student needs and interests?

I = Independent  S = Small Group  W = Whole Group

<table>
<thead>
<tr>
<th>Create: Which Objectives from the Unit will you focus on this week?</th>
<th>Perform: What Instructional Activities will students or teachers use to create understanding of the objectives?</th>
<th>Grouping: Indicate: I, S, W</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Respond:**

**Assessment:** Which Assessments from your Unit will you use this week?

**Reflective Questions:**
- How will you provide differentiated assessment opportunities?
- How do the assessments require students to apply their knowledge to the real world?
- How do the assessments measure the Unit Objectives and Essential Questions?

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Level of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I = Independent</td>
</tr>
<tr>
<td></td>
<td>S = Small Group</td>
</tr>
<tr>
<td></td>
<td>W = Whole Group</td>
</tr>
</tbody>
</table>

**Notes:**

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90
Grammar and Functions Checklist

Unit Topic: Enlightenment and Revolution, 1550 – 1789
High School – World History Honors, Grade 9
Target group: Mainstream class with integrated ELL students.

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Direct objects</td>
<td>1, 2</td>
</tr>
<tr>
<td>Proper nouns</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Common nouns</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Present participles functioning like nouns</td>
<td>2</td>
</tr>
<tr>
<td>Prepositional objects</td>
<td>3</td>
</tr>
<tr>
<td>Subject noun predicates</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functions</th>
<th>Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and name</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Identify</td>
<td>2</td>
</tr>
</tbody>
</table>
FLA 518: Sheltered ELL Strategies Checklist

Write the page numbers and any other identifying features to identify those parts of your lessons that employ the following strategies.

<table>
<thead>
<tr>
<th>SHELTERED STRATEGIES</th>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contextualize Lesson</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. A. Build and Activate Background Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.B. Develop Vocabulary</td>
<td>11,12,13,14</td>
<td>42,43,44</td>
<td>67,68,69</td>
</tr>
<tr>
<td>I. C. Use extensive Visuals, Realia, Manipulatives, &amp; Gestures</td>
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</table>
By the mid-18th century, new ideas about human society and government were sweeping across Europe. This intellectual movement, known as the Enlightenment, gave birth to revolutionary ideas like democracy and individual rights. The map at the right shows cities where Enlightenment ideas were flourishing in 1750.

Use the map to help you answer the questions below.

1. What city in Brandenburg-Prussia was an Enlightenment center?
2. Where had Enlightenment ideas spread outside Europe?
3. What effect do you think those ideas had on the place you identified in question 2?

For more information about the scientific revolution, the Enlightenment, and the American Revolution ...
Interact with History

It is the year 1633, and the Italian scientist Galileo Galilei faces a life-or-death dilemma. The Roman Inquisition, a court of the Catholic Church, has condemned him for holding an idea—that the earth revolves around the sun. The court has asked Galileo to publicly deny this idea. If he agrees, the court will show leniency. If he refuses, Galileo will likely face torture or a painful death.

The idea that the earth revolves around the sun had been put forth almost a century before by the Polish astronomer Copernicus. Galileo is firmly convinced that Copernicus was right. Galileo has been looking through a telescope at the planets and stars. What he has seen with his own eyes is proof enough of Copernicus’s theory.

The church has denounced Copernicus’s theory as dangerous to the faith. The idea that the earth is the center of the universe is part of church teachings. Church leaders have warned Galileo to stop defending the new theory. But Galileo has written a book that explains why Copernicus’s ideas make sense. Now he is on trial.

Put yourself in the place of Galileo as he weighs the choice the Inquisition has given him.

Would you deny an idea you know to be true?

EXAMINING the ISSUES

• By silencing Galileo, the church wanted to suppress an idea. Do you think this was an effective strategy? Can an idea have a life of its own?

• Are there times when an idea is too dangerous to be openly discussed or taught?

• Galileo faced persecution for teaching new ideas. Could this happen today?

Meet in small groups and discuss these questions. As you share ideas, recall other times in history when people expressed ideas that were different from accepted ones.

As you read this chapter, watch for the effects revolutionary ideas have on others.
The Scientific Revolution

MAIN IDEA

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

WHY IT MATTERS NOW

Scientists' questioning led to the development of the scientific method still in use today.

SETTING THE STAGE

The Renaissance inspired a spirit of curiosity in many fields. Scholars began to question ideas that had been accepted for hundreds of years. During the Reformation, religious leaders challenged accepted ways of thinking about God and salvation. While the Reformation was taking place, another revolution in European thought was also occurring. It challenged how people viewed their place in the universe.

The Roots of Modern Science

Before 1500, scholars generally decided what was true or false by referring to an ancient Greek or Roman author or to the Bible. Whatever Aristotle said about the material world was true unless the Bible said otherwise. Few European scholars questioned the scientific ideas of the ancient thinkers or the church by carefully observing nature for themselves.

The Medieval View

During the Middle Ages, most scholars believed that the earth was an unmoving object located at the center of the universe. According to that belief, the moon, the sun, and the planets all moved in perfectly circular paths around the earth. Beyond the planets lay a sphere of fixed stars, with heaven still farther beyond. Common sense seemed to support this view. After all, the sun appeared to be moving around the earth as it rose in the morning and set in the evening.

This earth-centered view of the universe, called the geocentric theory, was supported by more than just common sense. The idea came from Aristotle, the Greek philosopher of the fourth century B.C. The Greek astronomer Ptolemy expanded the theory in the second century A.D. In addition, Christianity taught that God had deliberately placed earth at the center of the universe. Earth was thus a special place on which the great drama of life took place.

A New Way of Thinking

Beginning in the mid-1500s, a few scholars published works that challenged the ideas of the ancient thinkers and the church. As these scholars replaced old assumptions with new theories, they launched a change in European thought that historians call the Scientific Revolution. The Scientific Revolution was a new way of thinking about the natural world. That way was based upon careful observation and a willingness to question accepted beliefs.

A combination of discoveries and circumstances led to the Scientific Revolution and helped spread its impact. By the late Middle Ages, European scholars had translated many works by Muslim scholars. These scholars had compiled a storehouse of ancient and current scientific knowledge. Based on this knowledge, medieval universities added scientific courses in astronomy, physics, and mathematics.

During the Renaissance, scholars uncovered many classical manuscripts. They found that the ancient authorities often did not agree with each other. Moreover,
European explorers traveled to Africa, Asia, and the Americas. Such lands were inhabited by peoples and animals previously unknown in Europe. These discoveries opened Europeans to the possibility that there were new truths to be found. The invention of the printing press during this period helped spread challenging ideas—both old and new—more widely among Europe’s thinkers.

The age of European exploration also fueled a great deal of scientific research, especially in astronomy and mathematics. Navigators needed better instruments and geographic measurements, for example, to determine their location in the open sea. As scientists began to look more closely at the world around them, they made observations that did not match the ancient beliefs. They found they had reached the limit of the classical world’s knowledge. Yet, they still needed to know more.

A Revolutionary Model of the Universe

The first major challenge to accepted scientific thinking came in the field of astronomy. The Scientific Revolution started when a small group of scholars began to question the geocentric theory.

The Heliocentric Theory

Although backed by authority and common sense, the geocentric theory did not accurately explain the movements of the sun, moon, and planets. This problem troubled a Polish cleric and astronomer named Nicolaus Copernicus (koh-PUR-nuh-koohs). In the early 1500s, Copernicus became interested in an old Greek idea that the sun stood at the center of the universe. After studying planetary movements for more than 25 years, Copernicus reasoned that indeed, the stars, the earth, and the other planets revolved around the sun.

Copernicus’s heliocentric, or sun-centered, theory still did not completely explain why the planets orbited the way they did. He also knew that most scholars and clergy would reject his theory because it contradicted their religious views. Fearing ridicule or persecution, Copernicus did not publish his findings until 1543, the last year of his life. He received a copy of his book, *On the Revolutions of the Heavenly Bodies*, on his deathbed.

While revolutionary, Copernicus’s book caused little stir at first. Over the next century and a half, other scientists built on the foundations he had laid. A Danish astronomer, Tycho Brahe (TEE-koh brah), carefully recorded the movements of the planets for many years. Brahe produced mountains of accurate data based on his observations. However, it was left to his followers to make mathematical sense of them.

After Brahe’s death in 1601, his assistant, a brilliant mathematician named Johannes Kepler, continued his work. After studying Brahe’s data, Kepler concluded that certain mathematical laws govern planetary motion. One of these laws showed that the planets revolve around the sun in elliptical orbits instead of circles, as was previously thought. Kepler’s laws showed that Copernicus’s basic ideas were true. They demonstrated mathematically that the planets revolve around the sun.

Galileo’s Discoveries

In 1581, a 17-year-old Italian student named Galileo Galilei sat in a cathedral closely watching a chandelier swing on its chain. Aristotle had said that a pendulum swings at a slower rhythm as it approaches its resting place. Using his beating pulse, Galileo carefully timed the chandelier’s swings. Aristotle’s idea was wrong. Instead, each swing of the pendulum took exactly the same amount of time. Galileo had discovered the law of the pendulum.
In another study, Galileo found that a falling object accelerates at a fixed and predictable rate. Galileo also tested Aristotle's theory that heavy objects fall faster than lighter ones. According to legend, he dropped stones of different weights from the Leaning Tower of Pisa. He then calculated how fast each fell. Contrary to Aristotle's assumption, the objects fell at the same speed.

Later, Galileo learned that a Dutch lens maker had built an instrument that could enlarge far-off objects. Without seeing this device, Galileo successfully built his own telescope. After making some improvements, Galileo used his telescope to study the heavens in 1609.

Then in 1610, he published a series of newsletters called *Starry Messenger*, which described his astonishing observations. Galileo announced that Jupiter had four moons and that the sun had dark spots. He also noted that the earth's moon had a rough, uneven surface. His description of the moon's surface shattered Aristotle's theory that the moon and stars were made of a pure, perfect substance. Galileo's observations, as well as his laws of motion, also clearly supported the theories of Copernicus.

**Conflict with the Church** Galileo's findings frightened both Catholic and Protestant leaders because they went against church teaching and authority. If people believed the church could be wrong about this, they could question other church teachings as well.

In 1616, the Catholic Church warned Galileo not to defend the ideas of Copernicus. Although Galileo remained publicly silent, he continued his studies. Then, in 1632, he published *Dialogue Concerning the Two Chief World Systems*. This book presented the ideas of both Copernicus and Ptolemy, but it clearly showed that Galileo supported the Copernican theory. The pope angrily summoned Galileo to Rome to stand trial before the Inquisition.

Galileo stood before the court in 1633. Under the threat of torture, he kneel before the cardinals and read aloud a signed confession. In it, he agreed that the ideas of Copernicus were false.

**A Voice from the Past**
With sincere heart and unpretended faith I abjure, curse, and detest the aforesaid errors and heresies [of Copernicus] and also every other error . . . contrary to the Holy Church, and I swear that in the future I will never again say or assert . . . anything that might cause a similar suspicion toward me.

GALILEO GALILEI, quoted in *The Discoverers*

Galileo was never again a free man. He lived under house arrest and died in 1642 at his villa near Florence. However, his books and ideas still spread all over Europe.

**The Scientific Method**
The revolution in scientific thinking that Copernicus, Kepler, and Galileo began eventually developed into a new approach to science called the scientific method. The **scientific method** is a logical procedure for gathering and testing ideas. It begins with a problem or question arising from an observation. Scientists next form a hypothesis, or unproved assumption. The hypothesis is then tested in an experiment or on the basis of data. In the final step, scientists analyze and interpret their data to reach a new conclusion. That conclusion either confirms or disproves the hypothesis.

The scientific method did not develop overnight. The work of two important thinkers of the 1600s, Francis Bacon and René Descartes, helped to advance the new approach. **Francis Bacon**, an English politician and writer, had a passionate interest in science. He believed that by better understanding the world, scientists would generate practical knowledge that would improve people's lives. In his writings, Bacon attacked medieval...
### Major Steps in the Scientific Revolution

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1572</td>
<td>Brahe discovers nova, or bright new star, which contradicts Aristotle's idea that universe is unchanging.</td>
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<tr>
<td>1609</td>
<td>Kepler publishes first two laws of planetary motion.</td>
</tr>
<tr>
<td>1610</td>
<td>Galileo publishes <em>Starry Messenger.</em></td>
</tr>
<tr>
<td>1543</td>
<td>Copernicus publishes heliocentric theory.</td>
</tr>
<tr>
<td>1590</td>
<td>Janssen invents microscope.</td>
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</table>

Nicolaus Copernicus began the Scientific Revolution with his heliocentric theory.

scholars for relying too heavily on the conclusions of Aristotle and other ancient thinkers. He also criticized the way in which both Aristotle and medieval scholars arrived at their conclusions. They had reasoned from abstract theories. Instead, he urged scientists to experiment. Scientists, he wrote, should observe the world and gather information about it first. Then they should draw conclusions from that information. This approach is called empiricism, or the experimental method.

In France, René Descartes (day-KAHRT) also took a keen interest in science. He developed analytical geometry, which linked algebra and geometry. This provided an important new tool for scientific research.

Like Bacon, Descartes believed that scientists needed to reject old assumptions and teachings. As a mathematician, however, his approach to gaining knowledge differed from Bacon's. Rather than using experimentation, Descartes relied on mathematics and logic. He believed that everything should be doubted until proved by reason. The only thing he knew for certain was that he existed—because, as he wrote, "I think, therefore I am." From this starting point, he followed a train of strict reasoning to arrive at other basic truths.

Modern scientific methods are based on the ideas of Bacon and Descartes. Scientists have shown that observation and experimentation, together with general laws that can be expressed mathematically, can lead people to a better understanding of the natural world.

### Changing Idea: Scientific Method

**Old Science**
- Scholars generally relied on ancient authorities, church teachings, common sense and reasoning to explain the physical world.

**New Science**
- In time, scholars began to use observation, experimentation, and scientific reasoning to gather knowledge and draw conclusions about the physical world.

### Newton Explains the Law of Gravity

By the mid-1600s, the accomplishments of Copernicus, Kepler, and Galileo had shattered the old views of astronomy and physics. Later, the great English scientist Isaac Newton helped to bring together their breakthroughs under a single theory of motion.

Newton studied mathematics and physics at Cambridge University. By the time he was 24, Newton was certain that all physical objects were affected equally by the same forces. Kepler had worked out laws for a planet's motion around the sun. Galileo had studied the motion of pendulums. Newton's great discovery was that the same force ruled the motions of the planets, the pendulum, and all matter on earth and in space.
He disproved the idea of Aristotle that one set of physical laws governed earth and another set governed the rest of the universe.

The key idea that linked motion in the heavens with motion on the earth was the law of universal gravitation. According to this law, every object in the universe attracts every other object. The degree of attraction depends on the mass of the objects and the distance between them.

In 1687, Newton published his ideas in a work called *Mathematical Principles of Natural Philosophy*—one of the most important scientific books ever written. The universe he described was like a giant clock. Its parts all worked together perfectly in ways that could be expressed mathematically. Newton believed that God was the creator of this orderly universe, the clockmaker who had set everything in motion.

**The Scientific Revolution Spreads**

After astronomers explored the secrets of the universe, other scientists began to study the secrets of nature on earth. Careful observation and the use of the scientific method eventually became important in many different fields.

**Scientific Instruments** Scientists developed new tools and instruments to make the precise observations that the scientific method demanded. The first microscope was invented by a Dutch maker of eyeglasses, Zacharias Janssen (YAHN-suhn), in 1590. In the 1670s, a Dutch drapery merchant and amateur scientist named Anton van Leeuwenhoek (LAY-vuhn-HUK) used a microscope to observe bacteria swimming in tooth scrapings. He also saw red blood cells for the first time. His examination of grubs, maggots, and other such organisms showed that they did not come to life spontaneously, as was previously thought. Rather, they were immature insects.

In 1643, one of Galileo’s students, Evangelista Torricelli (TAWR-uh-CHEHL-lee), developed the first mercury barometer, a tool for measuring atmospheric pressure and predicting weather. In 1714, the Dutch physicist Gabriel Fahrenheit (FAHR-uhn-HYT) made the first thermometer to use mercury in glass. Fahrenheit’s thermometer showed water freezing at 32°. A Swedish astronomer, Anders Celsius (SEHL-see-uhls), created another scale for the mercury thermometer in 1742. Celsius’s scale showed freezing at 0°.

**Medicine and the Human Body** During the Middle Ages, European doctors had accepted as fact the writings of an ancient Greek physician named Galen. However, Galen had never dissected the body of a human being. Instead, he had studied the anatomy of pigs and other animals. Galen assumed that human anatomy was much the same. Galen’s assumptions were proved wrong by Andreas Vesalius, a Flemish physician. Vesalius dissected human corpses (despite disapproval of this practice) and published his observations. His book, *On the Fabric of the Human Body* (1543), was filled with detailed drawings of human organs, bones, and muscle.
An English doctor named William Harvey continued Vesalius's work in anatomy. In 1628, he published *On the Motion of the Heart and Blood in Animals*, which showed that the heart acted as a pump to circulate blood throughout the body. He also described the function of blood vessels.

In the late 1700s, British physician Edward Jenner introduced a vaccine to prevent smallpox. Inoculation using live smallpox germs had been practiced in Asia for centuries. While beneficial, this technique was also dangerous. Jenner discovered that inoculation with germs from a cattle disease called cowpox gave permanent protection from smallpox for humans. Because cowpox was a much milder disease, the risks for this form of inoculation were much lower. Jenner used cowpox to produce the world's first vaccination.

**Discoveries in Chemistry** Robert Boyle pioneered the use of the scientific method in chemistry. He is considered the founder of modern chemistry. In a book called *The Sceptical Chymist* (1661), Boyle challenged Aristotle's idea that the physical world consisted of four elements—earth, air, fire, and water. Instead, Boyle proposed that matter was made up of smaller primary particles that joined together in different ways. Boyle's most famous contribution to chemistry is Boyle's law. This law explains how the volume, temperature, and pressure of gas affect each other.

Another chemist, Joseph Priestley, separated one pure gas from air in 1774. He noticed how good he felt after breathing this special air and watched how alert two mice were while breathing it. Wrote Priestley, "Who can tell but that, in time, this pure air may become a fashionable article of luxury? Hitherto only two mice and I have had the privilege of breathing it." Meanwhile, in France, Antoine Lavoisier (lah-vwah-ZYAY) was performing similar experiments. In 1779, Lavoisier named the newly discovered gas oxygen.

Other scholars and philosophers applied a scientific approach to other areas of life. Believing themselves to be orderly, rational, and industrious, they thought of themselves as enlightened. They would become the leaders of a new intellectual and social movement called the Enlightenment.

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**Section 1 Assessment**

1. **TERMS & NAMES**
   - Scientific Revolution
   - Nicolaus Copernicus
   - heliocentric theory
   - Johannes Kepler
   - Galileo Galilei
   - scientific method
   - Francis Bacon
   - René Descartes
   - Isaac Newton

2. **TAKING NOTES**
   - Use a web diagram such as the one below to show the events and circumstances that led to the Scientific Revolution.

   ![Diagram of causes of the Scientific Revolution]

3. **DRAWING CONCLUSIONS**
   - "If I have seen farther than others," said Newton, "it is because I have stood on the shoulders of giants." Who were the giants to whom Newton was referring? Could this be said of any scientific accomplishment? Explain.

4. **THEME ACTIVITY**
   - **Science & Technology** Working in groups of three or four, create a Scientific Revolution Discovery Board. Use these categories: Astronomy, Science, Medicine, Chemistry, Biology. Include important people, ideas, accomplishments.
2 The Enlightenment in Europe

MAIN IDEA
A revolution in intellectual activity changed Europeans' view of government and society.

WHY IT MATTERS NOW
 Freedoms and some forms of government in many countries today are a result of Enlightenment thinking.

SETTING THE STAGE The influence of the Scientific Revolution soon spread beyond the world of science. Philosophers admired Newton because he had used reason to explain the laws governing nature. People began to look for laws governing human behavior as well. They hoped to apply reason and the scientific method to all aspects of society—government, religion, economics, and education. In this way, the ideas of the Scientific Revolution paved the way for a new movement called the Enlightenment, or the Age of Reason. This movement reached its height in the mid-1700s.

Two Views on Government

The Enlightenment started from some key ideas put forth by two English political thinkers of the 1600s, Thomas Hobbes and John Locke. Both men experienced the political turmoil of England early in that century. However, they came to very different conclusions about government and human nature.

Hobbes's Social Contract Thomas Hobbes expressed his views in a work called Leviathan (1651). The horrors of the English Civil War convinced him that all humans were naturally selfish and wicked. Without governments to keep order, Hobbes said, there would be "war of every man against every man." In this state of nature, as Hobbes called it, life would be "solitary, poor, nasty, brutish, and short."

Hobbes argued that to escape such a bleak life, people gave up their rights to a strong ruler. In exchange, they gained law and order. Hobbes called this agreement, by which people created government, the social contract. Because people acted in their own self-interest, Hobbes said, the ruler needed total power to keep citizens under control. The best government was one that had the awesome power of a leviathan (sea monster). In Hobbes's view, such a government was an absolute monarchy, which could impose order and demand obedience.

Locke's Natural Rights The philosopher John Locke held a different, more positive, view of human nature. He believed that people could learn from experience and improve themselves. As reasonable beings, they had the natural ability to govern their own affairs and to look after the welfare of society. Locke criticized absolute monarchy and favored the idea of self-government.

According to Locke, all people are born free and equal, with three natural rights—life, liberty, and property. The purpose of government, said Locke, is to protect these rights. If a government fails to do so, citizens have a right to overthrow it. Locke
published his ideas in 1690, two years after the Glorious Revolution. His book, *Two Treatises on Government*, served to justify the overthrow of James II.

Locke's theory had a deep influence on modern political thinking. His statement that a government's power comes from the consent of the people is the foundation of modern democracy. The ideas of government by popular consent and the right to rebel against unjust rulers helped inspire struggles for liberty in Europe and the Americas.

**The Philosophes Advocate Reason**

The Enlightenment reached its height in France in the mid-1700s. Paris became the meeting place for people who wanted to discuss politics and ideas. The social critics of this period in France were known as *philosophes* (fuh-LEH-zay), the French word for philosophers. The philosophes believed that people could apply reason to all aspects of life—just as Isaac Newton had applied reason to science. Five important concepts formed the core of their philosophy:

1. **Reason**  Enlightened thinkers believed truth could be discovered through reason or logical thinking. Reason, they said, was the absence of intolerance, bigotry, or prejudice in one's thinking.

2. **Nature**  The philosophes referred to nature frequently. To them, what was natural was also good and reasonable. They believed that there were natural laws of economics and politics just as there were natural laws of motion.

3. **Happiness**  A person who lived by nature's laws would find happiness, the philosophes said. They were impatient with the medieval notion that people should accept misery in this world to find joy in the hereafter. The philosophes wanted well-being on earth, and they believed it was possible.

4. **Progress**  The philosophes were the first Europeans to believe in progress for society. Now that people used a scientific approach, they believed, society and humankind could be perfected.

5. **Liberty**  The philosophes envied the liberties that the English people had won in their Glorious Revolution and Bill of Rights. In France, there were many restrictions on speech, religion, trade, and personal travel. Through reason, the philosophes believed, society could be set free.

**Voltaire Combats Intolerance**  Probably the most brilliant and influential of the philosophes was François Marie Arouet. Using the pen name *Voltaire*, he published more than 70 books of political essays, philosophy, history, fiction, and drama.

Voltaire often used satire against his opponents. He made frequent targets of the clergy, the aristocracy, and the government. His sharp tongue made him enemies at the French court, and twice he was sent to prison. After his second jail term, Voltaire was exiled to England for two years. There, Voltaire came to admire the English government much more than his own. After he returned to Paris,
much of his work mocked the laws and customs of France. He even dared to raise doubts about the Christian religion. The French king and France’s Catholic bishops were outraged. In 1734, fearing another unpleasant jail term, Voltaire fled Paris.

Although he made powerful enemies, Voltaire never stopped fighting for tolerance, reason, freedom of religious belief, and freedom of speech. He used his quill pen as if it were a deadly weapon in a thinker’s war against humanity’s worst enemies—intolerance, prejudice, and superstition. Such attitudes were, he said, l’infâme—inamous or evil things. He often ended his letters with a fighting slogan, “Écrasez l’infâme!” (ay-crah-ZAY lahn-FAM). The phrase meant “Crush the evil thing!”

**Montesquieu and the Separation of Powers** Another influential French writer, the Baron de Montesquieu (MAHN-tuh-SKYOO), devoted himself to the study of political liberty. An aristocrat and lawyer, Montesquieu studied the history of ancient Rome. He concluded that Rome’s collapse was directly related to its loss of political liberties.

Like Voltaire, Montesquieu believed that Britain was the best-governed country of his own day. Here was a government, he thought, in which power was balanced among three groups of officials. The British king and his ministers held executive power. They carried out the laws of the state. The members of Parliament held legislative, or lawmaking, power. The judges of the English courts held judicial power. They interpreted the laws to see how each applied to a specific case. Montesquieu called this division of power among different branches **separation of powers**.

Montesquieu oversimplified the British system (it did not actually separate powers this way). His idea, however, became a part of his most famous book, *On the Spirit of Laws* (1748). In his book, Montesquieu proposed that separation of powers would keep any individual or group from gaining total control of the government. “Power,” he wrote, “should be a check to power.” Each branch of government would serve as a check on the other two. This idea later would be called “checks and balances.”

Montesquieu’s book was admired by political leaders in the British colonies of North America. His ideas about separation of powers and checks and balances became the basis for the United States Constitution.

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**Changing Idea: Government Powers**

<table>
<thead>
<tr>
<th>Old Idea</th>
<th>New Idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monarch rules with absolute authority.</td>
<td>Separation of government powers among executive, legislative, and judicial branches.</td>
</tr>
</tbody>
</table>

**Rousseau: Champion of Freedom** A third great philosopher, Jean Jacques Rousseau (roo-SOH), was passionately committed to individual freedom. The son of a poor Swiss watchmaker, Rousseau worked as an engraver, music teacher, tutor, and secretary. Eventually, Rousseau made his way to Paris and won recognition as a writer of essays. There he met and befriended other philosophes, although he felt out of place in the circles of Paris high society in which they traveled.

A strange, brilliant, and controversial figure, Rousseau strongly disagreed with other Enlightenment thinkers on many matters. Most philosophes believed that reason, science, and art would improve life for all people. Rousseau, however, argued that civilization corrupted people’s natural goodness. “Man is born free, and everywhere he is in chains,” he wrote. In the earliest times, according to Rousseau, people had lived as free and equal individuals in a primitive “state of nature.” As people became civilized, however, the strongest among them forced everyone else to obey unjust laws. Thus, freedom and equality were destroyed.
Rousseau believed that the only good government was one that was freely formed by the people and guided by the "general will" of society—a direct democracy. Under such a government, people agree to give up some of their freedom in favor of the common good. In 1762, he explained his political philosophy in a book called *The Social Contract*.

**A VOICE FROM THE PAST**

The heart of the idea of the social contract may be stated simply: Each of us places his person and authority under the supreme direction of the general will, and the group receives each individual as an indivisible part of the whole....

In order that the social contract may not be a mere empty formula, everyone must understand that any individual who refuses to obey the general will must be forced by his fellows to do so. This is a way of saying that it may be necessary to force a man to be free; freedom in this case being obedience to the will of all.

JEAN JACQUES ROUSSEAU, *The Social Contract*

Rousseau's view of the social contract differed greatly from that of Hobbes. For Hobbes, the social contract was an agreement between a society and its government. For Rousseau, it was an agreement among free individuals to create a society and a government.

Like Locke, Rousseau argued that legitimate government came from the consent of the governed. However, Rousseau believed in a much broader democracy than Locke had stood for. He argued that all people were equal and that titles of nobility should be abolished. Rousseau's ideas inspired many of the leaders of the French Revolution who overthrew the monarchy in 1789.

**Beccaria Promotes Criminal Justice** An Italian philosophe named Cesare Bonesana Beccaria (BAY-k-uh-REE-ah) turned his thoughts to the justice system. He believed that laws existed to preserve social order, not to avenge crimes. In his celebrated book *On Crimes and Punishments* (1764), Beccaria railed against common abuses of justice. They included torturing of witnesses and suspects, irregular proceedings in trials, and punishments that were arbitrary or cruel. He argued that a person accused of a crime should receive a speedy trial, and that torture should never be used. Moreover, he said, the degree of punishment should be based on the seriousness of the crime. He also believed that capital punishment should be abolished.

### Major Ideas of the Enlightenment

<table>
<thead>
<tr>
<th>Idea</th>
<th>Thinker</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rights—life, liberty, property</td>
<td>Locke</td>
<td>Fundamental to U.S. Declaration of Independence</td>
</tr>
<tr>
<td>Separation of powers</td>
<td>Montesquieu</td>
<td>France, United States, Latin American nations use separation of powers in new constitutions</td>
</tr>
<tr>
<td>Freedom of thought and expression</td>
<td>Voltaire</td>
<td>Guaranteed in U.S. Bill of Rights and French Declaration of the Rights of Man and Citizen; European monarchs reduce or eliminate censorship</td>
</tr>
<tr>
<td>Abolishment of torture</td>
<td>Beccaria</td>
<td>Guaranteed in U.S. Bill of Rights; torture outlawed or reduced in nations of Europe and the Americas</td>
</tr>
<tr>
<td>Religious freedom</td>
<td>Voltaire</td>
<td>Guaranteed in U.S. Bill of Rights and French Declaration of the Rights of Man and Citizen; European monarchs reduce persecution</td>
</tr>
<tr>
<td>Women's equality</td>
<td>Wollstonecraft</td>
<td>Women's rights groups form in Europe and North America</td>
</tr>
</tbody>
</table>

**SKILLBUILDER: Interpreting Charts**

1. What important documents reflect the influence of Enlightenment ideas?
2. In your opinion, which are the two most important Enlightenment ideas? Support your answer with reasons.
Women and the Enlightenment

The philosophes challenged many assumptions about government and society. But they often took a traditional view toward women. Rousseau, for example, developed many progressive ideas about education. However, he believed that a girl's education should mainly teach her how to be a helpful wife and mother. Other male social critics scolded women for reading novels because they thought it encouraged idleness and wickedness. Still, some male writers argued for more education for women and for women's equality in marriage.

Women writers also tried to improve the status of women. In 1694, the English writer Mary Astell published A Serious Proposal to the Ladies. Her book addressed the lack of educational opportunities for women. In later writings, she used Enlightenment arguments about government to criticize the unequal relationship between men and women in marriage. She wrote, "If absolute sovereignty be not necessary in a state, how comes it to be so in a family? . . . If all men are born free, how is it that all women are born slaves?"

During the 1700s, other women picked up these themes. Among the most persuasive was Mary Wollstonecraft, who published an essay called A Vindication of the Rights of Woman in 1792. In the essay, she disagreed with Rousseau that women's education should be secondary to men's. Rather, she argued that women, like men, need education to become virtuous and useful. Even if they are to be mothers, education will make them better mothers. Wollstonecraft also believed that women not only should be able to be nurses but also should be able to become doctors. She also argued for women's right to participate in politics.

Women made important contributions to the Enlightenment in other ways. In Paris and other European cities, wealthy women helped spread Enlightenment ideas through social gatherings called salons. (The importance of salons is discussed later in this chapter.)

One woman fortunate enough to receive education in the sciences was Emilie du Châtelet (shah-day). Du Châtelet was an aristocrat trained as a mathematician and physicist. By translating Newton's work from Latin into French, she helped stimulate interest in science in France.

Impact of the Enlightenment

Over a span of a few decades, Enlightenment writers challenged long-held ideas about society. They examined such principles as the divine right of monarchs, the union of church and state, and unequal social classes. They held these beliefs up to the light of reason and found them unreasonable.

The philosophes mainly lived in the world of ideas. They formed and popularized new theories. Although they encouraged European monarchs to make reforms, they were not active revolutionaries. However, their theories eventually inspired the American and French revolutions and other revolutionary movements in the 1800s. Enlightenment thinking produced three other long-term effects that helped shape Western civilization.
Belief in Progress  The first effect was a belief in progress. Pioneers such as Galileo and Newton had discovered the key for unlocking the mysteries of nature in the 1500s and 1600s. With the door thus opened, the growth of scientific knowledge seemed to quicken in the 1700s. Scientists made key new discoveries in chemistry, physics, biology, and mechanics. The successes of the Scientific Revolution gave people the confidence that human reason could solve social problems. Philosophers and reformers urged an end to the practice of slavery. They also argued for more social equality and improvements in education. Through reason, a better society was possible.

A More Secular Outlook  A second outcome was the rise of a more secular, or worldly, outlook. During the Enlightenment, people began to openly question their religious beliefs and the teachings of the church. Before the Scientific Revolution, people accepted the mysteries of the universe as the mysteries of God. One by one, scientists discovered that these mysteries could be explained mathematically. Newton himself was a deeply religious man, and he sought to reveal God's majesty through his work. However, his findings caused some people to change the way they thought about God.

Voltaire and other critics attacked some of the beliefs and practices of organized Christianity. They wanted to rid religious faith of superstition and fear and promote tolerance of all religions.

Importance of the Individual  Faith in science and in progress produced a third outcome—the rise of individualism. As people began to turn away from the church and royalty for guidance, they looked to themselves instead.

The philosophers encouraged people to use their own ability to reason in order to judge what is right or wrong. They also emphasized the importance of the individual in society. Government, they argued, was formed by individuals to promote their welfare. The British thinker Adam Smith extended the emphasis on the individual to economic thinking. He believed that individuals acting in their own self-interest created economic progress. Smith's theory is discussed in detail in Chapter 25.

During the Enlightenment, reason took center stage. The greatest minds of Europe followed each other's work with interest and often met to discuss their ideas. Some of the kings and queens of Europe were also very interested. As you will learn in Section 3, they sought to apply some of the philosophers' ideas to create progress in their countries.

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Section 2: Assessment

1. TERMS & NAMES
   - Enlightenment
   - social contract
   - John Locke
   - natural rights
   - philosopher
   - Voltaire
   - Montesquieu
   - separation of powers
   - Jean Jacques Rousseau
   - Mary Wollstonecraft

2. TAKING NOTES
   In a chart like the one below, list the important ideas of Hobbes, Locke, Voltaire, Montesquieu, Rousseau, Beccaria, and Wollstonecraft.

<table>
<thead>
<tr>
<th>Thinker</th>
<th>Key Idea</th>
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<td></td>
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</table>

Choose one of these thinkers and write a paragraph on how his or her ideas are influential today.

3. SYNTHESIZING
   For each of the statements below, identify who said it and explain what it means. Then say how each viewpoint reflects Enlightenment ideas.
   - "Power should be a check to power."
   - "Man is born free, and everywhere he is in chains."
   - "Let women share the rights and she will emulate the virtues of men."

4. ANALYZING THEMES
   Power and Authority
   Compare the views of Hobbes, Locke, and Rousseau on government. How do their differing ideas reflect their understanding of human behavior?

   THINK ABOUT
   - how each philosopher viewed the "state of nature"
   - what each considered the source of a government's authority

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556 Chapter 22
European Values

Writers and artists of the Enlightenment often used satire to comment on European values. Using wit and humor, they ridiculed ideas and customs for the purpose of improving society. Satire allowed artists to explore human faults and failings in a way that is powerful but not preachy. In the two literary excerpts and the drawing below, notice how the writer or artist makes his point.

LITERATURE

Voltaire

Voltaire wrote Candide (1759) to attack a philosophy called Optimism, which held that all is right with the world. The hero of the story, a young man named Candide, encounters the most awful disasters and human evils as he travels far and wide. In this passage, Candide has met a slave in Surinam, a Dutch colony in South America. The slave explains why he is missing a leg and a hand.

"When we're working at the sugar mill and catch our finger in the grinding-wheel, they cut off our hand. When we try to run away, they cut off a leg. I have been in both of these situations. This is the price you pay for the sugar you eat in Europe...."

"The Dutch fetishes [i.e., missionaries] who converted me to Christianity tell me every Sunday that we are all the sons of Adam, Whites and Blacks alike. I'm no genealogist, but if these preachers are right, we are all cousins born of first cousins. Well, you will grant me that you can't treat a relative much worse than this."

LITERATURE

Jonathan Swift

The narrator of Gulliver's Travels (1726), an English doctor named Lemuel Gulliver, takes four disastrous voyages that leave him stranded in strange lands. In the following passage, Gulliver tries to win points with the king of Brobdingnag—a land of giants—by offering to show him how to make guns and cannons. The reaction of the king, who is above such things, shows how Swift felt about the inhuman side of the human race.

[I told the king that] a proper quantity of this powder [gunpowder] rammed into a hollow tube of brass or iron... would drive a ball of iron or lead with such violence and speed, as nothing was able to sustain its force. That, the largest balls thus discharged, would not only destroy whole ranks of an army at once; but batter the strongest walls to the ground; sink down ships with a thousand men in each, to the bottom of the sea; and when hinged together by a chain, would cut through masts and rigging; divide hundreds of bodies in the middle, and lay all waste before them....

The king was struck with horror at the description I had given of those terrible engines... He was amazed how so impotent and goryavelling an insect as I [these were his expressions] could entertain such inhuman ideas, and in so familiar a manner as to appear wholly unmoved at all the scenes of blood and desolation, which I had painted as the common effects of those destructive machines; whereof, he said, some evil genius, enemy to mankind, must have been the first contriver [inventor].

ENGRaving

Francisco Goya

The Spanish artist Francisco Goya issued a series of engravings called Los Caprichos (Caprices) in 1799. In them, he criticized a range of "human errors and vices," and also satirized Spanish politics and society. In the image shown here, titled "Out Hunting for Lions," Goya attacks superstition. He wrote this caption for the image:

"The teeth of a man who has been hunting are indispensable for casting a spell. Without this ingredient, hunting succeeds. A pity that people believe such nonsense."
The Spread of Enlightenment Ideas

**Main Idea**
Enlightenment ideas spread through the Western world and profoundly influenced the arts and government.

**Why It Matters Now**
An "enlightened" problem-solving approach to government and society prevails in modern civilization today.

**Setting the Stage**
The philosophers' views often got them in trouble. In France it was illegal to criticize either the Catholic Church or the government. Many philosophers landed in jail or were exiled. Voltaire, for example, experienced both punishments. Nevertheless, Enlightenment ideas spread throughout Europe.

**A World of Ideas**
In the 1700s, Paris was the cultural and intellectual capital of Europe. Young people from around Europe—and also from the Americas—came to study, philosophize, and enjoy fine culture. The brightest minds of the age gathered there. From their circles radiated the ideas of the Enlightenment.

**The Paris Salons**
The buzz of Enlightenment ideas was most intense in the mansions of several wealthy women of Paris. There, in their large drawing rooms, these hostesses held regular social gatherings called salons. At these events, philosophers, writers, artists, scientists, and other great intellects met to discuss ideas and enjoy artistic performances.

The most influential of the salon hostesses in Voltaire's time was Marie-Thérèse Geoffrin (zhuh-frehn). Self-educated and from the well-to-do middle class, Madame Geoffrin was friends with both philosophers and heads of state. She corresponded with the king of Sweden and Catherine the Great of Russia.

**Diderot's Encyclopedia**
Madame Geoffrin also helped finance the project of a leading philosophe named Denis Diderot (DEE-dub-Roh). Diderot imagined a large set of books to which all the leading scholars of Europe would contribute articles and essays. This Encyclopedia, as he called it, would bring together all the most current and enlightened thinking about science, technology, art, government, and more. Diderot began publishing the first volumes in 1751.
The Enlightenment views expressed in the articles soon angered both the French government and the Catholic Church. Their censors banned the work. They said it undermined royal authority, encouraged a spirit of revolt, and fostered "moral corruption, irresponsibility, and unbelief." Fearing arrest, some leading philosophers withdrew from the project and urged Diderot to quit. Diderot pressed on, however, and finally won permission to continue publishing the *Encyclopedia*. New volumes came out regularly under his editorship until 1772.

**New Ideas Circulate** The salons and the *Encyclopedia* helped spread Enlightenment ideas to educated people all over Europe. The enlightened thinkers of Europe considered themselves part of an intellectual community. They shared their ideas through books, personal letters, visits back and forth, and magazine articles. As one writer of the day described the flurry of communication, "Never have new ideas had such rapid circulation at such long distance."

Enlightenment ideas also eventually reached middle-class people through newspapers, pamphlets, and even political songs. Enlightenment ideas about government and equality attracted the attention of a growing literate middle class. This group had money but limited status and political power. With their money, middle-class people could afford to buy many books and support the work of artists. Through its purchasing power, this group had growing influence over European culture in the 1700s.

**Art and Literature in the Age of Reason**

The Enlightenment ideals of order and reason were reflected in the arts—music, literature, painting, and architecture. European art of the 1600s and early 1700s had been dominated by the style called baroque—a grand, ornate style. Monarchs had built elaborate palaces such as Versailles (see page 521). Musicians like the German composer Johann Sebastian Bach and the English composer George Frederick Handel had written dramatic organ and choral music. Artists had created paintings rich in color, detail, and ornate imagery.

Under the influence of the Enlightenment, styles began to change. The arts began to reflect the new emphasis on order and balance. Artists and architects worked in a simple and elegant style that borrowed ideas and themes from classical Greece and Rome. The style of the late 1700s is therefore called neoclassical ("new classical"). In music, this style of this period is called classical.

**Classical Music** Three composers in Vienna, Austria, rank among the greatest figures of the classical period in music. They were Franz Joseph Haydn, Wolfgang Amadeus Mozart, and Ludwig van Beethoven.

Haydn was particularly important in developing new musical forms, such as the sonata and symphony. Mozart was a gifted child who began composing music at the age of five and gave concerts throughout Europe as a youth. At 12, he wrote his first opera. Mozart's great operas—*The Marriage of Figaro*, *Don Giovanni*, and *The Magic Flute*—set a new standard for elegance and originality. Although he lived only to age 35, he wrote more than 600 musical works.

Beethoven showed enormous range in his work. He wrote beautiful piano music, string quartets, and stirring symphonies. Beethoven's earlier works were in the same classical style as Mozart's. However, his later compositions began new trends, which carried music into the Age of Romanticism.

**Popularity of the Novel** Writers in the 18th century also developed new styles and forms of literature. A number of European authors began writing novels—lengthy works of prose fiction. These books were popular with a wide middle-class audience.
Art in the Age of Enlightenment

The Enlightenment influenced many European painters of the middle and late 1700s. Increasingly, artists looked for inspiration in the material world—in nature and human nature. Some artists showed an Enlightenment interest in science and social issues in their work. Others emphasized a new sensitivity toward individuals.

The Individual
The French painter Elisabeth-Louise Vigée-Le Brun was one of the most celebrated portrait artists of the late 1700s. She was the favorite painter of Queen Marie Antoinette of France. Her portraits bring out the personalities of her subjects. Her own energy, success, and independence also reflected the Enlightenment spirit. These qualities shine through this detail of a self-portrait with her daughter.

The Promise of Science
The English artist Joseph Wright of Derby was fascinated by science and its impact on people’s lives. The painting below, *Philosopher Giving a Lecture on the Orrery*, shows children and adults gazing into a miniature planetarium. The way Wright uses light in this picture makes a point about how science can educate and enlighten people.

Politics and Society
The English artist William Hogarth often used satire in his paintings. In the painting above, *Canvassing for Votes*, he comments on political corruption. While the candidate flirts with the ladies on the balcony, his supporters offer a man money for his vote. Hogarth’s detailed, realistic style and moralistic topics were meant to appeal to a wide middle-class audience.

Connect to History
Analyzing Issues Imagine you are a philosophe who moonlights as an art critic. For each of these paintings, write a brief statement about how it reflects Enlightenment ideas.

Connect to Today
Updating a Picture Choose one of the paintings on this page and think about how you might change it to depict politics, science, or people today. You might describe the modern version in words or using a sketch or other kind of artwork.
who liked the entertaining stories written in everyday language. Writers—including many women—turned out a flood of popular novels in the 1700s.

English novelists such as Samuel Richardson and Henry Fielding developed many of the features of the modern novel. Their works had carefully crafted plots, used suspense and climax, and explored their characters' thoughts and feelings. Richardson's Pamela is often considered the first true English novel. It told the story of a young servant girl who refused the advances of her master. In Fielding's comic masterpiece Tom Jones, the hero of the book is an orphan who has been kicked out of his adopted home. He travels all over England and overcomes numerous obstacles to win the hand of his lady.

A third popular English novelist was Daniel Defoe, author of the adventure Robinson Crusoe. Crusoe is a sailor stranded on a tropical island. Through his wits and the help of a native he calls Friday, Crusoe learns how to survive on the island and is eventually rescued.

## Enlightenment and Monarchy

From the salons, artists' studios, and concert halls of Europe, the Enlightenment spirit also swept through Europe's royal courts. Many philosophes, including Voltaire, believed that the best form of government was a monarchy in which the ruler respected the people's rights. The philosophes tried to convince monarchs to rule justly. Some monarchs embraced the new ideas and made reforms that reflected the Enlightenment spirit. They became known as enlightened despots. Despot means absolute ruler.

The enlightened despots supported the philosophes' ideas. But they also had no intention of giving up any power. The changes they made were motivated by two desires: they wanted to make their countries stronger and their own rule more effective. The foremost of Europe's enlightened despots were Frederick II of Prussia, Holy Roman Emperor Joseph II of Austria, and Catherine the Great of Russia.

### Frederick the Great

Frederick II, the king of Prussia from 1740 to 1786, once wrote to Voltaire: "I must enlighten my people, cultivate their manners and morals, and make them as happy as human beings can be, or as happy as the means at my disposal permit." Frederick indeed committed himself to reforming Prussia. He granted many religious freedoms, reduced censorship, and improved education. He also reformed the justice system and abolished the use of torture. However, Frederick's changes only went so far. For example, he believed that serfdom was wrong, but he did nothing to end it. This was because he needed the support of wealthy landowners. As a result, he never challenged the power of the Junkers or tried to change the existing social order.

Perhaps Frederick's most important contribution was his attitude toward being king. He called himself "the first servant of the state." From the beginning of his reign, he made it clear that his goal was to serve and strengthen his country. This attitude was clearly one that appealed to the philosophes.

## Changing Idea: Relationship Between Ruler and State

### Old Idea

The state and its citizens exist to serve the monarch—as Louis XIV reportedly said, "I am the state."

### New Idea

The monarch exists to serve the state and support citizens' welfare—as Frederick the Great said, a ruler is only "the first servant of the state."

### Joseph II

The most radical royal reformer was Joseph II of Austria. The son and successor of Maria Theresa, Joseph II ruled Austria from 1780 to 1790. He introduced legal reforms and freedom of the press. He also supported freedom of worship—even for Protestants, Orthodox Christians, and Jews. In his most radical reform, Joseph abolished serfdom and ordered that peasants be paid for their labor with cash. Not
surprisingly, the nobles firmly resisted this change. Like many of Joseph’s reforms, it was undone after his death.

**Catherine the Great** The ruler most admired by the philosophes was Catherine II, known as Catherine the Great. She ruled Russia from 1762 to 1796. The well-educated empress read the works of philosophers, and she exchanged many letters with Voltaire. She ruled with absolute authority, but she also took steps to modernize and reform Russia.

In 1767, Catherine formed a commission to review Russia’s laws. She presented it with a brilliant proposal for reforms based on the ideas of Montesquieu and Beccaria. Among other changes, she recommended allowing religious toleration and abolishing torture and capital punishment. Her commission, however, accomplished none of these lofty goals.

Catherine eventually put in place limited reforms, but she did little to improve the life of the Russian peasants. Her thinking about enlightened ideas changed after a massive uprising of serfs in 1773. With great brutality, Catherine’s army crushed the rebellion. Catherine had previously favored an end to serfdom. However, the revolt convinced her that she needed the nobles’ support to keep her throne. Therefore, she gave the nobles absolute power over the serfs. As a result, Russian serfs lost their last traces of freedom.

**Catherine Expands Russia** Peter the Great had fought for years to win a port on the Baltic Sea. Likewise, Catherine sought access to the Black Sea. In two wars with the Ottoman Turks, her armies finally won control of the northern shore of the Black Sea. Russia also gained the right to send ships through Ottoman-controlled straits leading from the Black Sea to the Mediterranean Sea.

Catherine also expanded her empire westward into Poland. In Poland, the king was relatively weak, and independent nobles held the most power. The three neighboring powers—Russia, Prussia, and Austria—each tried to assert their influence over the country. In 1772, these land-hungry neighbors each took a piece of Poland in what is called the First Partition of Poland. In further partitions in 1793 and 1795, they grabbed up the rest of Poland’s territory. With these partitions, Poland disappeared from the map of Europe. It did not reappear as an independent country until after World War I.

By the end of her remarkable reign, Catherine had vastly enlarged the Russian empire. Meanwhile, as Russia was becoming an international power, another great power, Britain, faced a challenge in its 13 American colonies. Inspired by Enlightenment ideas, colonial leaders decided to cast off British rule and found an independent republic.

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**Section 3: Assessment**

1. **TERMS & NAMES**
   - Identify:
     - salon
     - baroque
     - neoclassical
     - enlightened despot
     - Catherine the Great

2. **TAKING NOTES**
   Copy the concept web shown below and add to it examples that illustrate the concepts.

   ![Concept Web](image)

   - Spread of Enlightenment Ideas
   - Art and literature
   - Circulation of ideas

3. **DRAWING CONCLUSIONS**
   What advantages do you think salons had over earlier forms of communication in spreading new ideas? Justify your response with specific references to the text.

   **THINK ABOUT**
   - who hosted the salons and where they were held
   - who was invited to the salons
   - church and state influence on publishing and education

4. **THEME ACTIVITY**
   **Power and Authority**
   Imagine you are a public relations consultant for Frederick the Great, Joseph II, or Catherine the Great. The monarch you represent wants to be named “Most Enlightened Despot of the 1700s.” Write a press release or design a poster or flyer that presents reasons why your client should be given this honor.
Rozeta Koxha  
FLA 518 – Dr. Verplaetse  
May 17, 2010

Final Reflective Narrative

Unit Topic: Enlightenment and Revolution, 1550 – 1789  
High School – World History Honors, Grade 9  
Target group: Mainstream class with integrated ELL students.

When I started this course, I was asking myself: “What does Sheltered Content Instruction mean?” In fact this is the title of one of the books that we used for this course, and I was faced with it every class, but without meaning for few classes in a row. It took time for me to find out the answer of this question, and now I feel much more comfortable to be in front of the students and to make content comprehensible for the English language learners in their classrooms.

My experience of using Sheltered Content Instructions starts with this unit. When I was creating my unit, I tried to apply sheltered instructions for ELLs of different levels wherever was possible. This started with the preparation of unit goals – language structures that should be used. Then I continued with learning objectives for every lesson which include content and language objectives designated with performance indicators – activities to achieve objectives through the lesson which are not applicable for mainstream classes.

Modification of the lesson plans put me in the right track of Sheltered Content Instruction which was not so easy for me to apply sheltered strategies in the right way. After too many class activities, group work, peer tutoring and professor’ s instructions, I saw myself under the umbrella of Sheltered Content Instruction.
In my modified lesson plans, I applied different sheltered strategies such as:

* Speaking clearly and slowly which is very needed for preproduction and early production level.

* Repetitions or recitations which facilitate oral and written language (listening, speaking, reading and writing).

* Focusing on background knowledge which involve students to generate questions or tell what they know before studding a unit or a chapter.

* Highlighting the key words especially required for preproduction and early production level to facilitate understanding and memory.

* Modeling language/L1 support as a prompt for students to complete their tasks

* Using the word wall, written definitions of the key words and phrases (for different levels), framing the main ideas and illustrating them with pictures which can improve comprehension skills for learning a new language.

* Open class discussions, group work for students interaction.

I think that all the above learning strategies or others that may be I did not stated, will be helpful to make content comprehensible for ELLs in my unit.