NAME: _____

Global History III
Scientific Revolution

Revolutions in Science and Philosophy

Gabrielle woke up early, eager to begin the day. At the convent school where she had spent the last six years, she had never wanted to get up. She had felt hemmed in by all the rules. The lessons on how to conduct herself in society and how to manage a household bored her. Why couldn't she have been taught about science, mathematics, and philosophy? But school was behind her. Now that she was back home in Paris, each day brought something new. She wondered if she would have a chance to talk to Monsieur Herve, her brother's tutor, as she had last evening.

What wonderful ideas he had. Gabrielle especially agreed that human nature was basically good. All one needed was liberty to develop into a kind and generous person. She remembered how spiteful 3 some of the girls at the school had been. The strict rules at the school had doubtless warped their spirits. Gabrielle had never been ill-natured. She had been disobedient toward the school authorities instead. Now she felt quite proud of her defiance. Monsieur Herve said that people had a right to rebel against tyranny.

This young woman of the 18th century is just becoming aware of new ideas about human nature and society. These new ideas clashed with what was taught in traditional schools. People now began to question established forms of government. As the century wore on, some groups joined together to overthrow restrictive governments. They hoped to replace the governments with ideal societies. These ideas and political movements developed from a new way of studying nature.

Directions: Answer the following question on separate paper.

1. Why do you think Gabrielle appears to be having trouble in the convent school?
2. Why might Gabrielle be having an even bigger problem relating to adults than many teenagers today?
3. Why do you think it was especially unusual for Gabrielle to speak with her brother's tutor, Monsieur Herve?
4. Why had Gabrielle become proud of her defiance?
5. How has Gabrielle actually experienced two very different lives during her brief lifetime?

NAME: _____ Global History III
Scientific Revolution

THE SCIENTIFIC REVOLUTION

For many centuries, scientists had accepted the writings of ancient scholars and the teachings of religious leaders about science and nature. Early in the Renaissance, scientists began to use new methods to study nature. Conclusions based on observation and experimentation became the basis for scientific theories.

Statements put forth as facts were accepted as truth only after they had been tested in experiments. These tests and their results were written down so that other scientists could repeat them. Gradually, the *scientific method* of observation, experimentation, and drawing conclusions came into common use. It led to advances in the fields of chemistry, physics, mathematics, astronomy, and medicine. This method made such major changes in the study and understanding of nature that it is said to have caused a *scientific revolution.*

The Renaissance and the Scientific Method

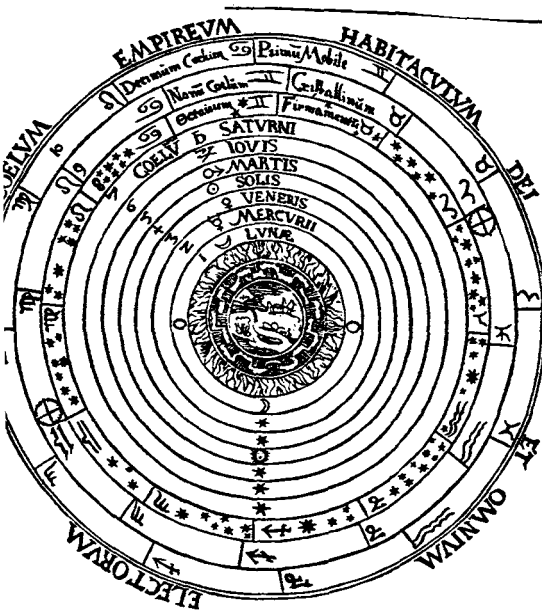
Renaissance explorers, such as Columbus and Magellan, had demonstrated that the earth is larger and more varied than Europeans had previously thought. Similarly, Renaissance scientists changed their ideas of what the heavens were like. The new understanding of the universe came about as the result of applying the scientific method to observations and theories.

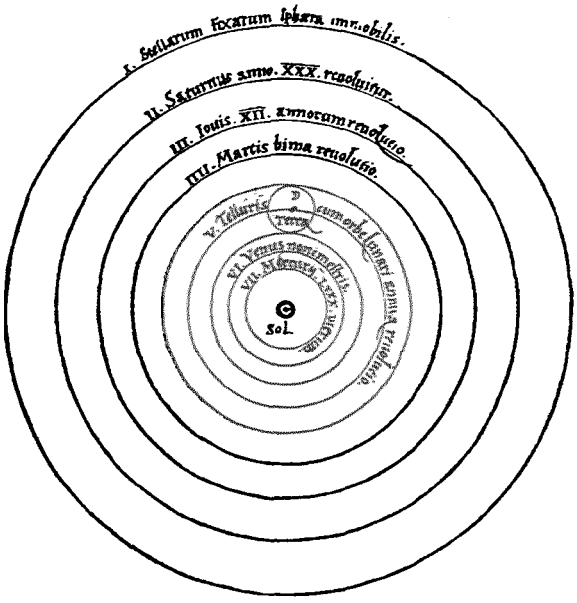
People of the Middle Ages acquired concepts of the everyday world from Christian teachings. Ideas also came from the philosophic and scientific theories of the Greek philosopher Aristotle. Christian theologians believed that the biblical account of creation was literally true. God's realm was, of course, the most important part of the universe. But it was somewhere beyond and above the solar system. Earth, being the home of human beings created by God, was the focus of God's attention. Therefore, the religious leaders and scientists of the Middle Ages thought that the earth was the center of the solar system. Aristotle's theory that the solar system *is geocentric* supported this belief. A geocentric solar system is one in which the sun and all the planets revolve around earth, which does not move.

Copernicus. Interestingly enough, the first person who challenged this view of the solar system was a devout clergyman from Poland called Nicolaus Copernicus (lived 1473-1543). Copernicus was an astronomer as well as an authority on church law. In his astronomical studies, he had read the theories of the astronomer

Ptolemy, who lived during the 2nd century A.D. in Alexandria, Egypt. Ptolemy had developed rules based on the geocentric model of the solar system. The rules helped other astronomers follow the paths of the planets in their revolutions around the earth.

These rules were so complicated and sometimes so inaccurate





Copernicus began to feel that God could not have made a geocentric solar system. If God had done so, Copernicus thought, He would not have been perfect. Copernicus turned to a model of the solar system that had been proposed by Aristarchus, a Greek astronomer who lived in the 200s B.C. This was a *heliocentric* model in which the earth and all the other planets revolved around the sun. Copernicus found that the heliocentric model explained the pathways of the planets better than the geocentric model. For nearly 40 years, Copernicus studied and tested Aristarchus's assertion that the solar system is heliocentric. Finally, he wrote a book, *On the Revolutions of Heavenly Bodies,* that discussed the theory. It was published in 1543, the year Copernicus died.

Although Copernicus had written his book to demonstrate the perfection of God's creation, it outraged religious leaders. Not only did it contradict the Bible, it gave human beings an insignificant place in the universe. Most scientists of the time complained that Copernicus's theory lacked common sense. "If the earth is spinning around the sun," they asked, "why doesn't everything fall off it?" A century passed before scientists began to consider the heliocentric solar system a possibility.

Directions: Answer the following question based on the reading.

1. If Copernicus was such a religious man, why did he believe that a geocentric system was correct? _____
_____
_____
_____

2. Why do you think other religious men condemned the ideas of Copernicus if he was proving that God created a more perfect system? _____
_____
_____
_____

3. If people were so upset by the heliocentric model of the solar system that Copernicus proposed, why did it eventually replace the geocentric version? _____
_____
_____
_____
_____
_____

SCIENTIFIC REVOLUTION

I. Scientific Revolution
- A. began during the Renaissance and continued during the Age of Kings
  1. rejected traditional authority
  2. rejected Church teachings
  3. favored direct observation of nature
- B. Scientific Method
  1. observed nature
  2. made hypotheses - educated guesses
  3. tested hypotheses through experiments

II. Outstanding Scientists
- A. Nicholas Copernicus (1473-1543)
  1. the sun was the center of the universe
  2. went against what the Catholic Church taught
- B . Galileo Galilei (15 64-1642)
  1. used a telescope to conform Copernicus' theory
  2. Church banned his book
- C. Sir Isaac Newton (1642-1727)
  1. Principia Mathematica
  2. Law of gravity

The Age of Enlightenment

From Mr Ott's Classroom Wiki

Background

The Enlightenment developed as an extension of the Scientific Revolution. During the Scientific Revolution, Europeans discarded traditional beliefs and began using reason to explain the world around them. While the Scientific Revolution focused on the physical world, the Enlightenment attempted to explain the purpose of government, and describe the best form of it. The most influential Enlightenment thinkers were Thomas Hobbes, John Locke, Voltaire, Baron de Montesquieu, and Jean Jacques Rousseau.

Hobbes

Thomas Hobbes based his theories on government on his belief that man was basically greedy, selfish, and cruel. In his book, Leviathan, Hobbes states that life would be a state of constant warfare without a strong government to control man's natural impulses. He believed people would enter into a Social Contract to escape from this. In the Social Contract, people would exchange most of their freedoms for the safety of organized society. Once people entered into this contract, there was no release. Hobbes did not believe in revolutions, and supported the idea of absolute monarchs.

Locke

Locke also based his theories on his assessment of human nature. However, Locke believed that people could be reasonable and moral. In his book, Two Treatises of Government, Locke explained that all men have Natural Rights, which are Life, Liberty, and Property, and that the purpose of government was to protect these rights. Furthermore, Locke states that if government did not protect these rights, and became abusive, then the people had a right to revolution. Locke supported a limited government that protected people's natural rights.

Montesquieu

Baron de Montesquieu was an Enlightenment thinker from France who wrote a book called, The Spirit of the Laws in 1748. In his book, Montesquieu describes what he considers to be the best government. He states that government should divide itself according to its powers, creating a Judicial, Legislative, and Executive branch. Montesquieu explained that under this system each branch would Check and Balance the others, which would help protect the people's liberty. The ideas of Separation of Powers and Checks and Balances can be seen in the government of the United States.

Voltaire

Voltaire was a French intellectual who wrote and lectured about freedom of speech. Voltaire is best known for saying, "I do not agree with a word that you say, but I will defend to the death your right to say it." He believed that freedom of speech was the best weapon against bad government. He also spoke out against the corruption of the French government, and the intolerance of the Catholic Church.

Jean Jacques Rousseau

Rousseau wrote a book called, The Social Contract, where he stated that people were basically good, and that society, and its unequal distribution of wealth, were the cause of most problems. Rousseau believed that

government should be run according to the will of the majority, which he called the General Will. He claimed the General Will would always act in the best interest of the people.

Impact/Results

Enlightenment ideas helped to stimulate people's sense of individualism, and the basic belief in equal rights. This in turn led to the Glorious Revolution is Britain, the American Revolution, the French Revolution, and the Latin American Revolutions. Some of these revolutions resulted in government based upon the ideas of the Enlightenment.

Elsewhere, a few monarchs retained absolute control of their countries while also enacting reform based on Enlightenment ideas. These monarchs are called Enlightened Despots. In Austria, Maria Teresa and her son Joseph II both introduced reforms based on Enlightenment ideas. They reduced the tax load on the peasants, provided free education, and ended censorship in their empire. In Russia, Catherine the Great introduced similar reforms. She enacted laws for religious toleration and free education, and also sought the advice of nobles and peasants in the running of government. However, these reforms seldom outlived the monarchs who had enacted them.

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WHEN did this even happen?

WHAT happened during this event?

WHERE did this event occur?

THE ENLIGHTENMENT

WHY is this event important?

WHO are the <u>major</u> historical figures associated with this event?

WHO were some more major historical figures associated with this event?

Name: _____ Date: _____ BETA – Mr. Ott
Global History & Geography

Aim: How did Thomas Hobbes and John Locke differ on the nature of humans and the purpose of government?

Natural Laws=

	Thomas Hobbes	John Locke
Wrote?		
Ideas on Human Nature		
The Purpose of Government		
The Best Form of Government		

Name: _____ Date: _____ BETA - Mr. Ott
Global History & Geography

Two Views of the Social Contract

In the 1600s, two English thinkers, Thomas Hobbes and John Locke, set forth ideas that were to become key to the Enlightenment. Both men lived through the upheavals that shook England early in the century. Yet they came to very different conclusions about human nature and the purpose and nature of government.

"Nasty, brutish, and short." Thomas Hobbes set out his ideas in a work titled *Leviathan.* Hobbes argued that people were naturally cruel, greedy, and selfish. If not strictly controlled, they would fight, rob, and oppress one another. Life in the "state of nature" without laws or other control - would be "solitary, poor, nasty, brutish, and short."

To escape that "brutish" life, said Hobbes, people entered into a social contract, an agreement by which they gave up the state of nature for an organized society. Hobbes believed that only a powerful government could ensure an orderly society. Such a government was an absolute monarchy, which could impose order and compel obedience. Not surprisingly, Hobbes had supported the Stuart kings in their struggle against Parliament.

Natural rights. John Locke had a more optimistic view of human nature. People were basically reasonable and moral, he said. Further, they had **natural rights,** or rights that belonged to all humans from birth. These included the right to life, liberty, and property.

In Two Treatises of *Government,* Locke argued that people formed governments to protect their natural rights. The best kind of government, he said, had limited power and was accepted by all citizens. Thus, unlike Hobbes, Locke rejected absolute monarchy and sided with Parliament in its struggle against the Stuarts.

Locke then set out a radical idea. A government, he said, has an obligation to those it governs. If a government fails its obligations or violates people's natural rights, the people have the right to overthrow the government. This right to revolution would echo through Europe, in Britain's North American colonies, and around the world in the centuries that followed.

HOW DID ENLIGHTENMENT THINKERS DIFFER ON THE ROLE OF GOVERNMENT

"Two View of the Social Contract". Answer the questions below. If statement is false, rewrite it correctly in the space provided.

1. Thomas Hobbes and John Locke were both French scientists. T / F _____
_____

2. Hobbes argued in his book, Leviathan, that people were born cruel ,greedy and evil. T/F
_____
_____

3. "Social contract" means that people give up some of their freedom in exchange for an orderly society to live in. T / F _____
_____

4. Hobbes believed that without a strong government, such as an absolute monarch, people would simply live together peacefully. T / F _____
_____

5. Do you agree with statement #2? Explain why. _____
_____
_____

6. "Most people riot and loot stores during any type of emergency situation (blackouts, natural disasters)." Would Locke agree with this statement? _____ because _____
_____
_____

7. According to John Locke, the government gives citizens their rights to life, property and liberty. T / F _____
_____

8. According to the Two Treatises on Government, the government has no obligation to protect the rights of its citizens. T / F _____
_____

9. The rule of Louis XIV would have been supported by John Locke. T / F _____
_____

10. "When a government fails to protect the rights of its citizens, the people must revolt against that government." T / F _____
_____
_____

Name: _____ Date: _____ BETA - Mr. Ott
Global History & Geography

How did Enlightenment Ideas Influence the American System of Government?

Document # 1

"People choose a government to make laws that will protect their property and freedom. Whenever the government tries to take away their property and freedom, the government has really declared war on the people. Since the government is no longer protecting the people, the people have the right to disobey the government's laws and to establish a new government that will protect their rights."

John Locke, English Enlightenment writer (1690)

Based on this document, what is the main responsibility of any government? _____
_____
_____
_____

Document #2

"Governments are formed by people to protect their rights to life, liberty, and the pursuit of happiness. Whenever a government attempts to take away rather than protect these rights, the people have a right to abolish or change that government. It is not only their right but their duty to throw off such a government..."

(1776) U.S Declaration of Independence

Based on this document, what responsibility do the people have to their country?
_____
_____
_____
_____

Document #3

"In every government there should be three branches of power: the legislative (to make laws), the executive (to carry out the law) and the judiciary (to interpret the law). Without this separation of powers there would be no liberty."

-Baron Montesquieu, French Enlightenment writer

Based on this document, why should government power be separated into three different parts?_____
_____
_____

Complete the following sentences.
The President of the United States_____ the laws.(Executive Branch)
The Senate and Congress_____the laws. (Legislative Branch)
The Supreme Court _____ the laws (Judicial Branch)

Document #4

"No one- not even a king-has the right to go against the will of the people as a whole. If a ruler was tyrannical and ignored the will of the people, people had the right to demand their freedom."

-Jean Rousseau, French Enlightenment Writer

Based on this document, who ultimately should make all the decisions in any society? _____
_____
_____

Question: Should uneducated and illiterate people be allowed to vote? Explain your answer _____
_____
_____
_____
_____