

Name: _____

Unit #1

The Scientific Revolution	
Where:	
When:	
Causes (historical circumstances):	
Effect:	
People:	

Excerpt from Western Civilizations: Judith J. Coffin and Robert C. Stacy

The natural philosophers, or scientists, of the 17th century had an immense task at hand. That task was nothing less than creating a new knowledge based on the observation of the world of Nature. Their observations were justified by mathematical proof, and all of this within a world which God had created but left to man to discover. A new world view emerged from this age -- mechanistic and materialistic -- a scientific world view which shapes our view of the cosmos today.

Questions:

1. What was the goal of 17th century philosophers or scientists?
2. How did these natural philosophers and scientists discover what was true?

Continue to the next page

Of course, the Church found the New Science at odds with its theology and in the early 17th century Galileo was brought to trial for teaching Copernican theory. He was tried as a heretic and found guilty. At his trial he recanted all of his opinions in a display that emphasized the correctness of the Church and the errors of the New Science. The revolution in science had to find a new home and it did in northern Europe, especially England, the Low Countries, Germany and France. There, it seemed, the spirit of philosophical and scientific enquiry was less restricted and more favorable to its growth. And there we find Leibniz, Descartes, Bacon and Isaac Newton.

Questions:

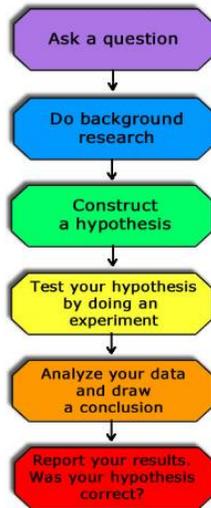
1. Which institution (be specific – think outside of what is specifically stated) was critical of the “New Science”?
2. Why was this institution critical of the “New Science”? (Try and include details not included in the reading.)
3. Where did the Scientific Revolution find a “new home”? Why?

Few of us today would doubt the revolutionary essence of modern science -- few of us question that something like a scientific revolution took place between Copernicus' *De Revolutionibus* (1543) and Newton's *Principia* (1687). But did all Europeans read these treatises at the time? The answer is no. Then how could the work of Copernicus and Newton have been so revolutionary? The answer, simply stated, is this: if Copernicus, Galileo, Newton and others could use Human Reason to unlock the mysteries of heavenly bodies, then it was a very short step indeed to apply that same Human Reason to the problems of man and society. And from that great realization, came the program and "faith" of the *philosophe* of the 18th century Enlightenment.

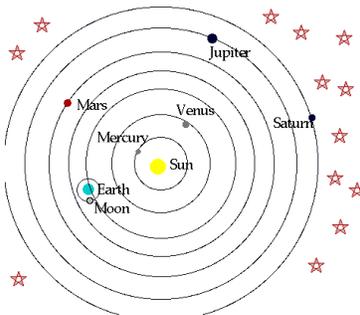
1. What made the works of scientists revolutionary?
2. How did the Enlightenment benefit from the Scientific Revolution?

Continue to the next page

➤ Scientific method:



➤ Heliocentric:



➤ Nicolaus Copernicus:

➤ Johannes Kepler:

➤ Galileo Galilei:

➤ Isaac Newton:

➤ Rene Descartes:

Continue to the next page

➤ How do they images below demonstrate the scientific method?



Vesalius, 1543, detail from title page.

Sir Francis Bacon was a leading scientist / thinker of the Scientific Revolution. Why do you think he said the following:

“By far the best proof is experience.”