The Scientific Revolution

What was the Scientific Revolution and how did it change European’s attitudes towards science?
What was the Scientific Revolution?

- The Scientific Revolution was a time of intense debate between science and religion.

- Helped to develop:
  - Modern scientific practices
  - New scientific thought
Education in the Middle Ages
The Power of the Roman Catholic Church
Faith or Science?
What was Europe life prior to the Scientific Revolution?

- Prior the Scientific Revolution, many Europeans were ignorant of basic earth science
  - Little education
  - Little knowledge

- Knowledge that did exist was controlled by the Roman Catholic Church
  - Their lessons were based on Scripture
How did the Church teach science?

- Most scientific teachings in the Church were based on Biblical theory & ancient Greek science

- Examples:
  - The earth is the center of the universe (geocentric theory)
  - Four major elements
  - God controls motion / laws of movement
The Major Elements
Captain Planet!!!!!
Divine Control of Motion
How did the Scientific Revolution start?

- Europeans were influenced by Ottoman and Renaissance scholars
  - Began to question Church authority

- European discoveries outside of Europe and the Reformation also fueled scientific questions
Ottoman Scientists
Who were some of the major figures of this new movement?

- **Galileo**
  - Invented the telescope

- **Nicholas Copernicus**
  - Heliocentric Theory: Earth revolves around the sun

- **Sir Isaac Newton**
  - Laws of Motion / Gravity

- **Sir Francis Bacon**
  - Scientific Method
Copernicus and his observations
An example of Copernicus' Heliocentric model from his observations with the sun (not the Earth, as the center of the universe)
Galileo’s experiments w/ telescopes
Galileo’s telescope
One of Galileo’s telescopes on display at the Franklin Institute in Philadelphia, PA
Sir Isaac Newton & “the apple”
According to legend, this is the apple tree under which Newton made his famous observations of gravity. It stands at Cambridge University in England.
Newton’s experiments with light
Zacharias Janssen & the microscope
Janssen’s early observation: cells
Experiments with alchemy
European Alchemy
How did the Church respond to these scientific challenges?

- The Church reacted with fear to these new challenges

- Scientists who criticized established Church science were brought before the Inquisition
  - Charged with heresy
  - Tortured
  - Executed / House arrest
Galileo in his trial before the Inquisition. Unable to convince the court, he was convicted and sentenced to house arrest for the rest of his life, forbidden to write or experiment.
How did the Scientific Revolution change European society?

- The Scientific Revolution had two (2) lasting effects:
- Changed the way people viewed science
  - Negatively to positively
- Continued to weaken the power of the Church
  - The debate continues today
Creationism v. Evolution
Abortion
Stem Cell Research