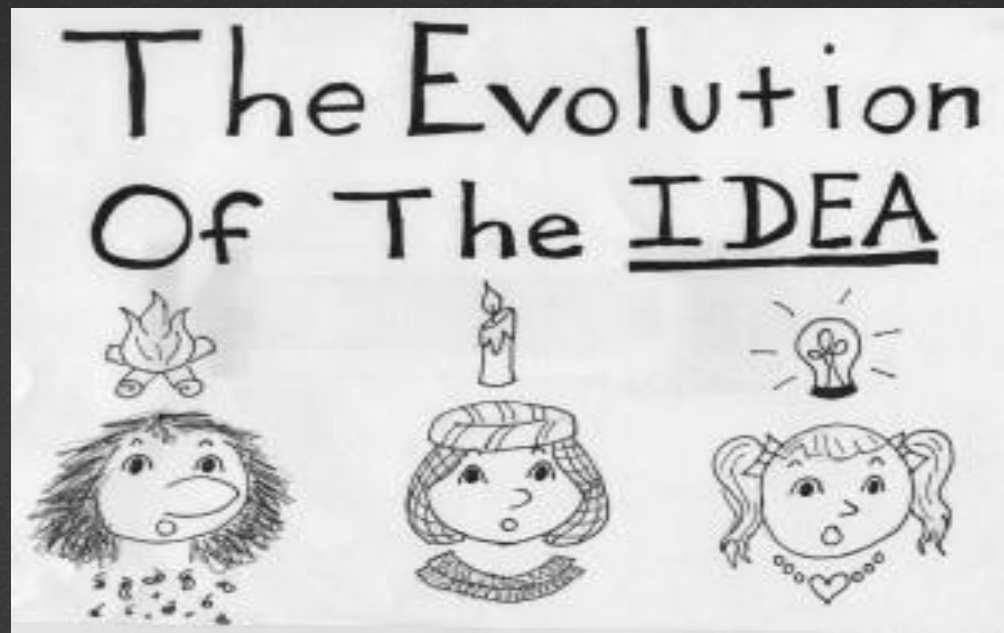
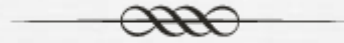


Scientific Revolution

1550-1700

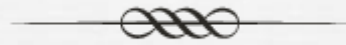


1550-1700



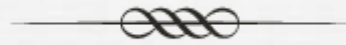
- ☛ The Scientific Revolution was not a revolution in the sense of a sudden eruption ushering in radical change, but a century-long process of discovery in which scientists built on the findings of those who had come before.
- ☛ It takes time to change a mode of thinking... A LOT of time.

Why was this a long process?

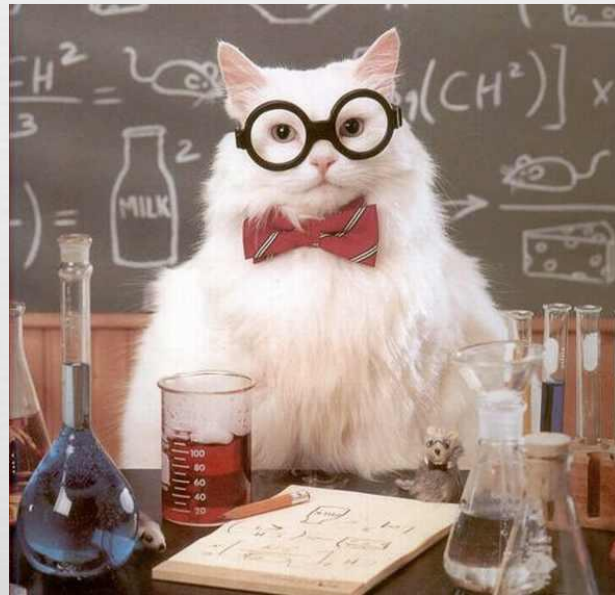


- ☛ Education in this era was mainly for the rich.
- ☛ People looked to the church for guidance, and the church was able to tell people what to believe.
- ☛ Many rejected the discoveries of the Scientific Revolution because they were hard to comprehend.
- ☛ The Revolution would prove that their goals or traditions were no longer valid, and this was not something they took lightly.

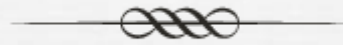
A New Way of Thinking



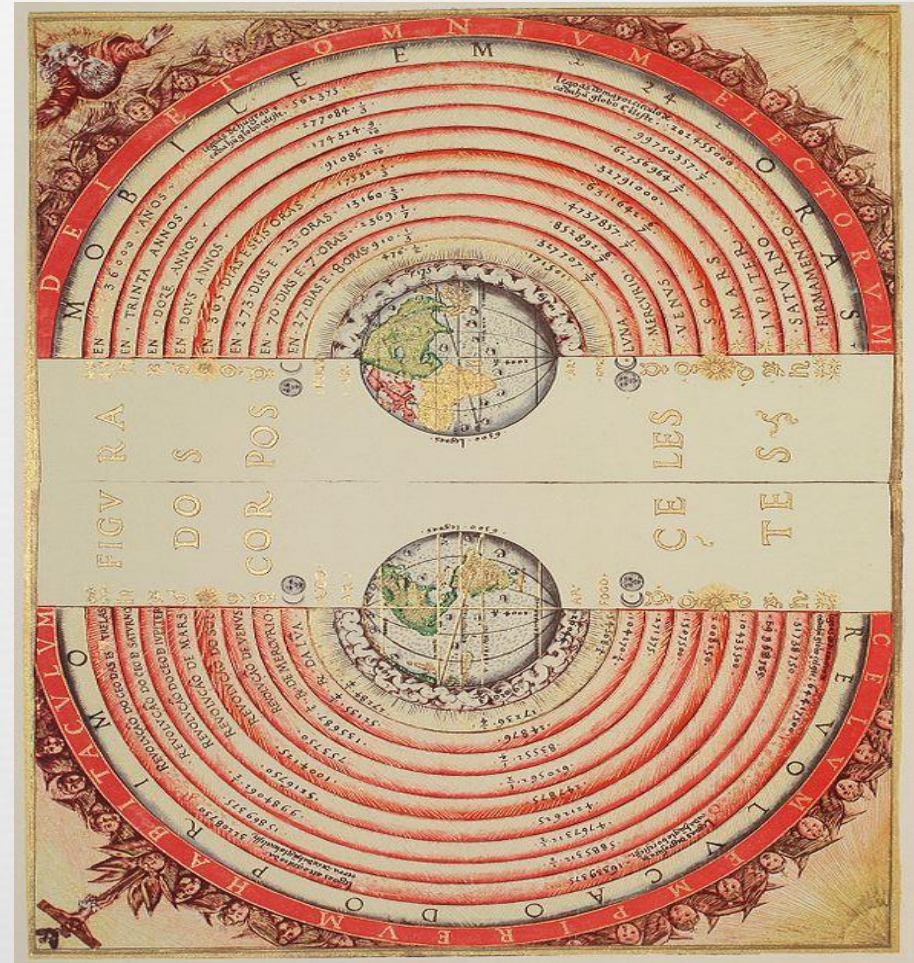
- Renaissance prompts new ways of thinking (1300-1600).
- Scientific Revolution—new way of viewing the natural world—based on observation and inquiry.
- New discoveries and overseas exploration open up thinking.
- Scholars make new developments in astronomy & mathematics



Roots of Modern Science

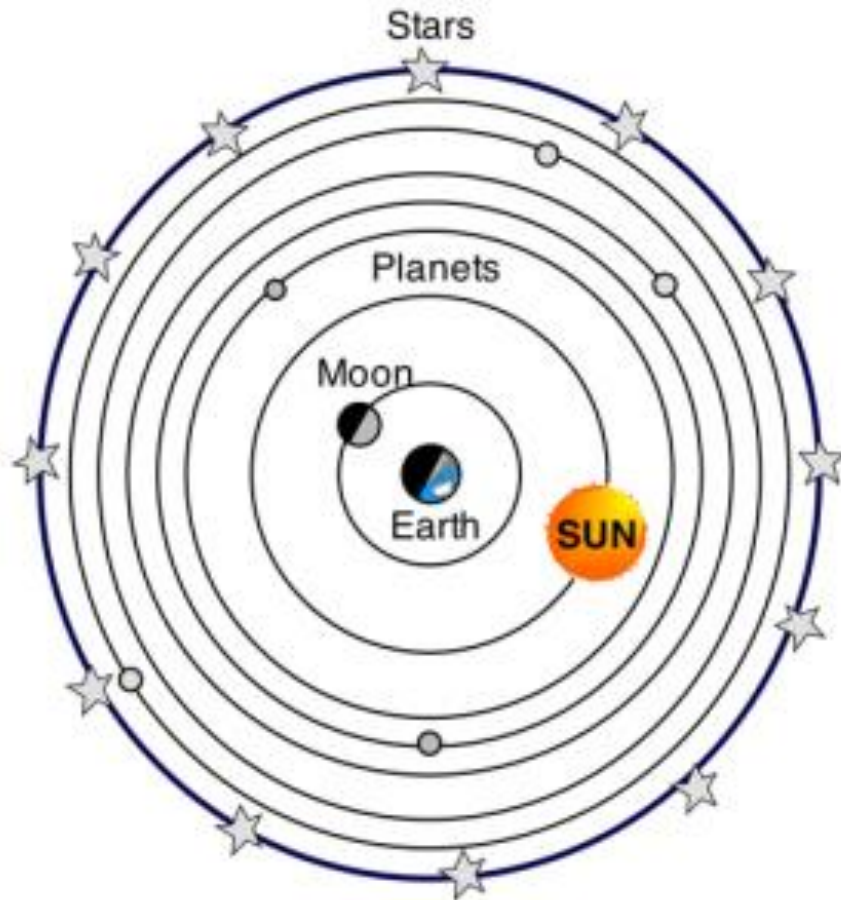


- ☛ The Medieval View
 - ☛ Most knowledge in the Middle Ages comes from the Bible and Greek/Roman sources.
 - ☛ Supports **geocentric theory**—moon, sun, planets revolve around Earth.

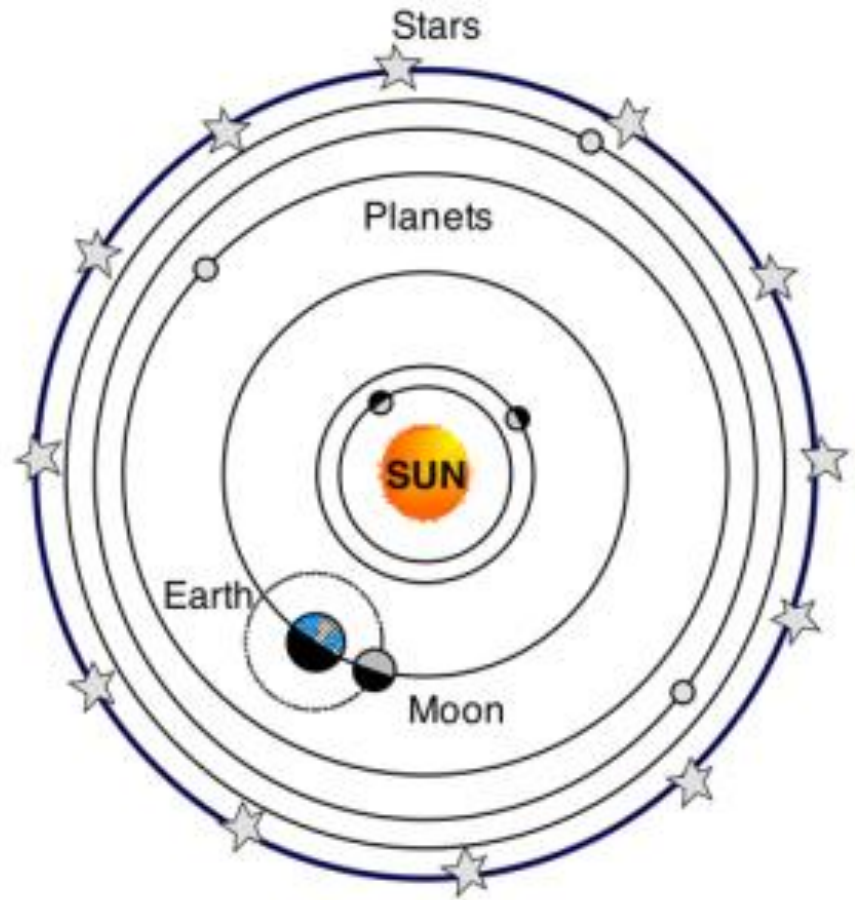


Geo- Earth

Helio- Sun

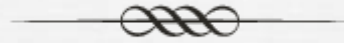


Geocentric Theory



Heliocentric Theory

The Scientific Method



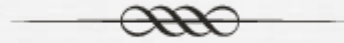
☞ A Logical Approach

- ☞ Revolution in thinking leads to development of scientific method—a series of steps for forming and testing scientific theories.

☞ Francis Bacon and Rene Descartes

- ☞ Thinkers Bacon and Descartes helped to create the scientific method.
- ☞ Bacon urges scientists to experiment before drawing conclusions using induction and reasoning.
- ☞ Descartes advocates using logic and math to reason out basic truths: deduction.

Important People



☞ Copernicus

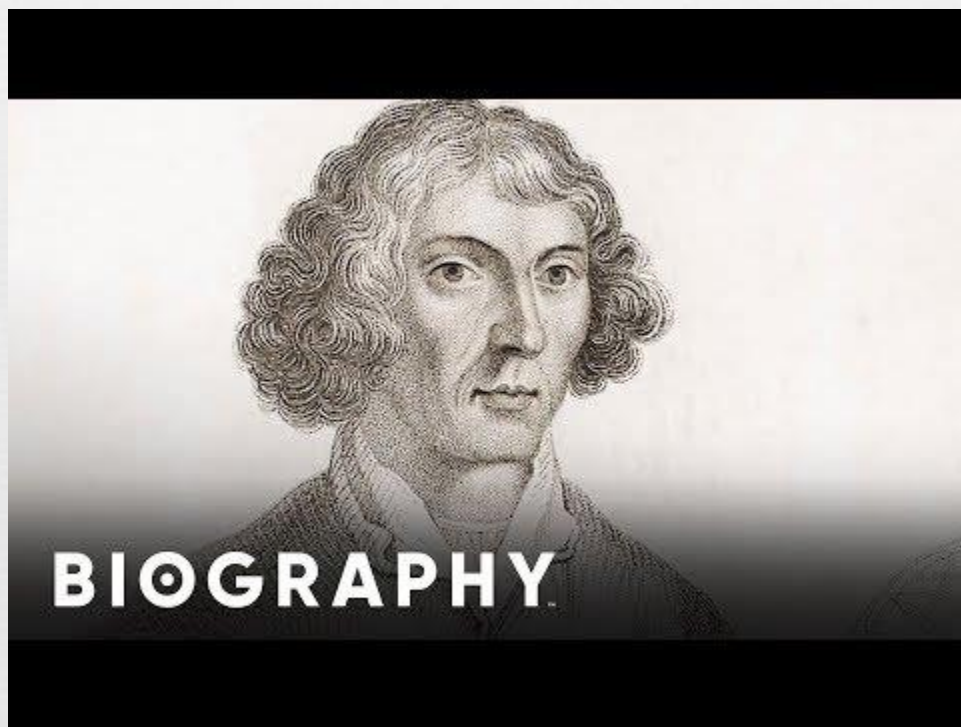
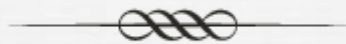
☞ Kepler

☞ Galileo

☞ Descartes

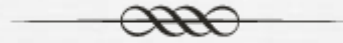
☞ Newton

☞ Bacon

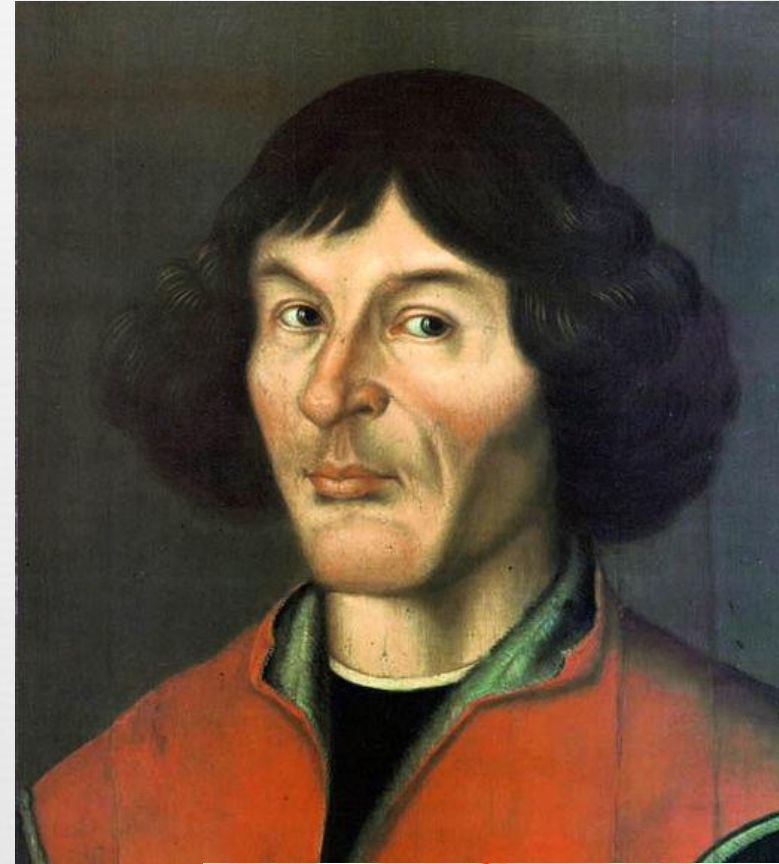


Nicolaus Copernicus

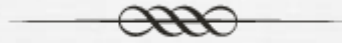
1473-1543



- ☞ Astronomer & Mathematician
- ☞ Develops Heliocentric Theory
 - ☞ Planets revolve around the sun.
 - ☞ Later scientists mathematically prove Copernicus to be correct.
- ☞ Rejected by other scholars of his time and the Catholic Church

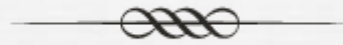


Nicolaus Copernicus



Johannes Kepler

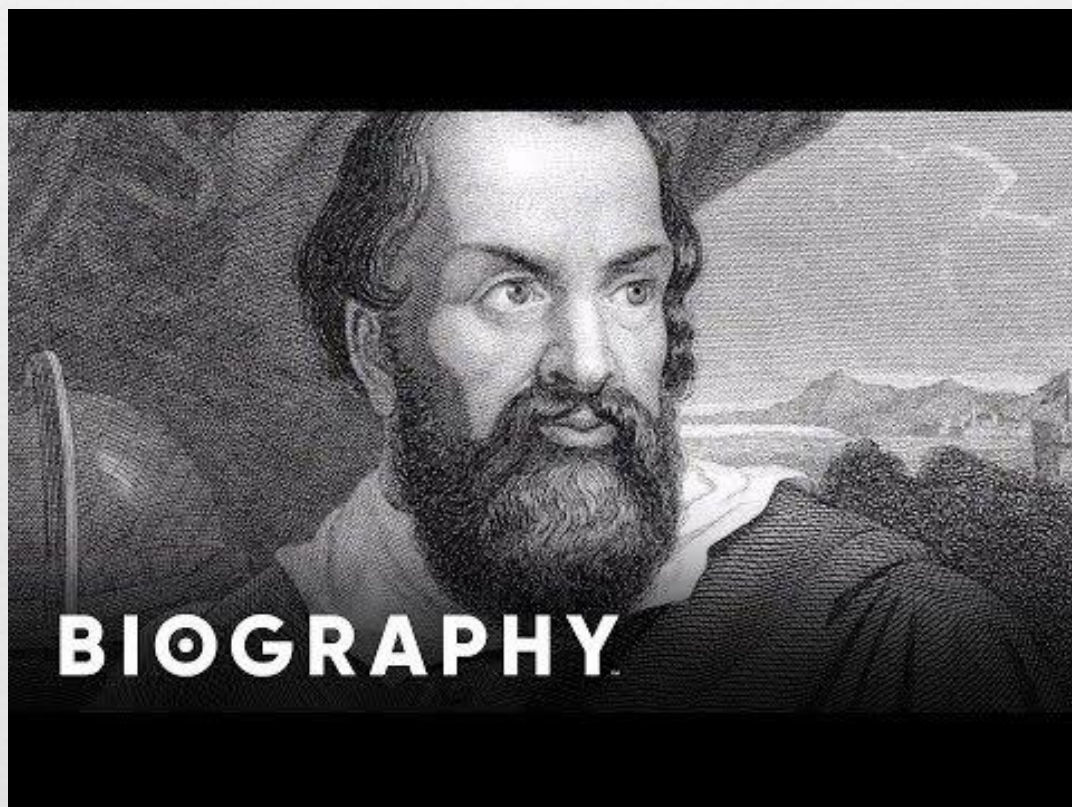
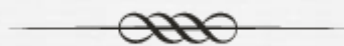
1571-1630



- ☛ Astronomer & Mathematician
- ☛ Known for his Laws of Planetary Motion (orbits):
 - ☛ Heliocentric-based
- ☛ Tides influenced by the Moon
- ☛ Deeply religious (Protestant)
- ☛ Criticized by the Catholic Church

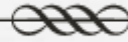


Jo. Kepler

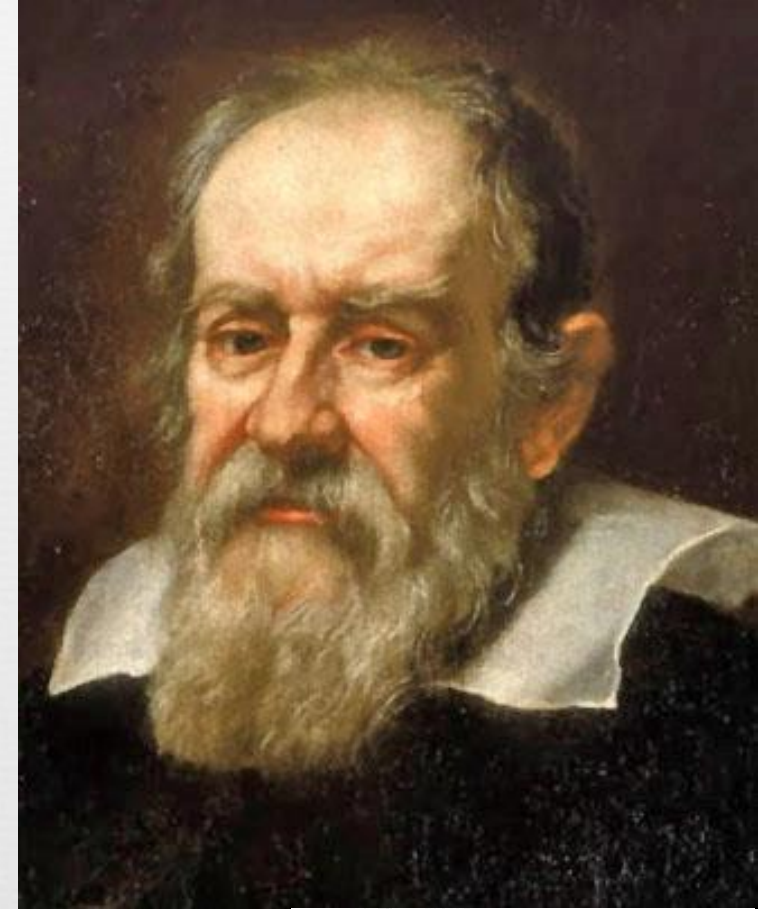


Galileo Galilei

1564-1642



- ☞ Astronomer, Physicist, Philosopher & Mathematics
- ☞ Law of Constant Acceleration
 - ☞ used experiment/evidence
- ☞ Built his own telescope
 - ☞ discovered moons and planetary surface details
- ☞ Church attacks Galileo's work, fears it will weaken people's faith.
- ☞ Pope forces Galileo to declare his and other new findings are wrong.



Galileo Galilei



Galileo So turns out the earth... goes around the sun. Who knew?

400 years ago · [Comment](#) · [Like](#)



Copernicus likes this.



The Church hahaha wut you smokin' bro

1 hour ago · [Like](#)



Galileo Nothing. It's an observable fact.

57 minutes ago · [Like](#)



The Church haha riiiiight seriously cut it out bro ur makin crazy talk

42 minutes ago · [Like](#)



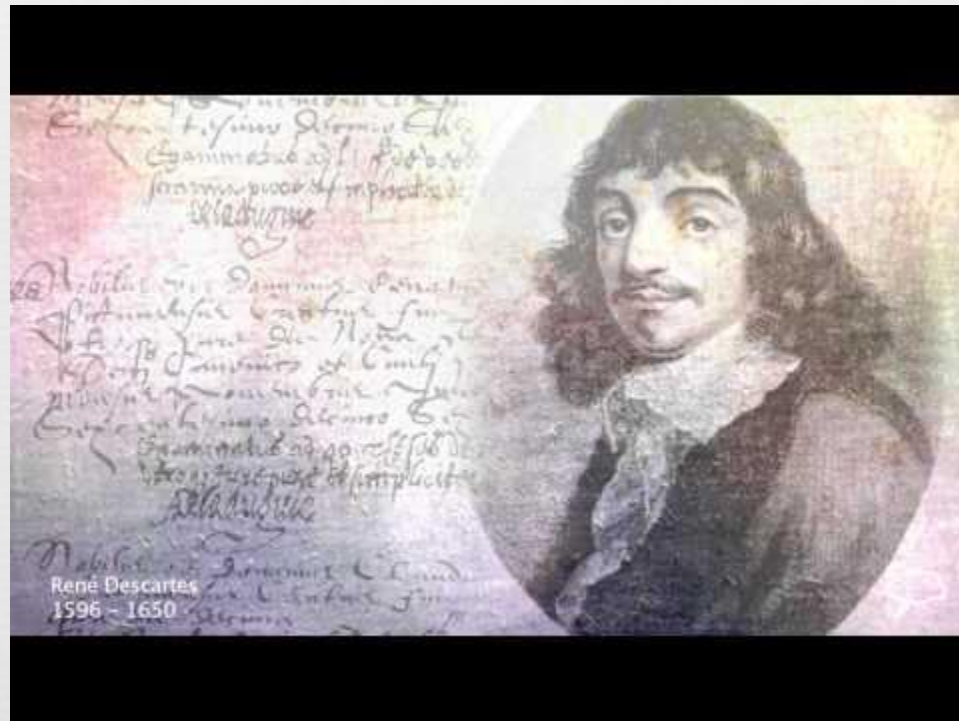
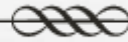
Galileo No I'm not, "bro". Want to see my proof?

36 minutes ago · [Like](#)



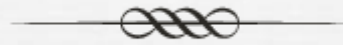
The Church YOU SHUT YOUR MOUTH. YOU SHUT IT RIGHT NOW.

29 minutes ago · [Like](#)



Rene Descartes

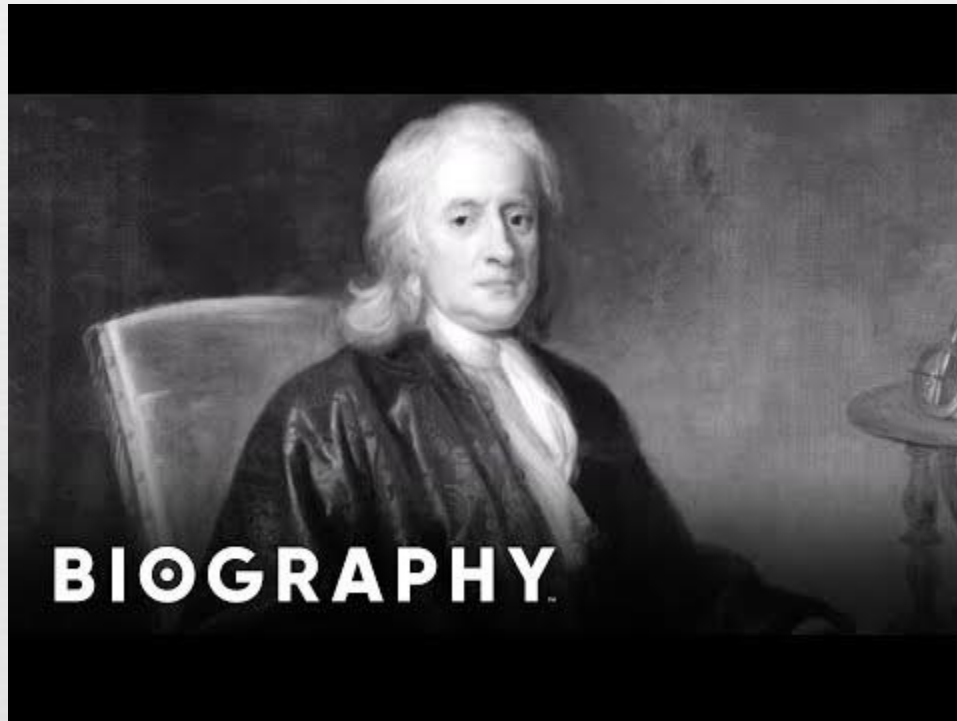
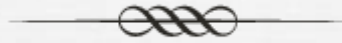
1596-1650



- ☞ Philosopher & Mathematician
- ☞ “Father of modern philosophy”
- ☞ Truth can be reached through reason (critical thinking)
- ☞ Thoughts are the backing foundation of scientific method

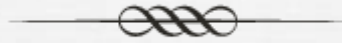


Rene Descartes



Isaac Newton

1642-1727



- ☞ Scientist, Physicist & Philosopher
- ☞ Develops Theory of Motion & Law of Gravity
 - ☞ Motion in space and earth linked by the law of universal gravitation
- ☞ Studied light and color
- ☞ Experiment and Observation (scientific method)



Is. Newton



Francis Bacon

1561-1626

- ☛ Philosopher, statesman, scientist, orator and author.
- ☛ Served as Attorney General and Lord Chancellor of Eng.
- ☛ Father of scientific method
 - ☛ died following his practices when he contracted pneumonia while studying effects of freezing on the preservation of meat.



Fra Bacon



Activity



- ☛ Assume that you have just been chosen to serve on a panel charged with naming someone to appear on the cover of *Time Magazine* as “The Most Outstanding Medieval Scientist.”
- ☛ If your only choices are the people covered and represented in this presentation (Copernicus, Kepler, Galileo, Descartes, Bacon, and Newton), who would you nominate?
- ☛ Sketch your cover and include short captions justifying your selection.