

The Enlightenment

Why Did it Happen?



in the 1500s, people believed the earth was flat

by the 1600s, the seeking of knowledge led to the questioning of old assumptions and then to a breakthrough in Western thought

transformations of religious thought:

deism: religious philosophy based on reason and the idea of natural law

methodism: religious movement that stressed the value of personal religious experience through community work
(these people and their ideas later spread to America)



which all contributed to the movement that became known as
the Age of Enlightenment

this cultural movement of intellectuals that emphasized using reason rather than tradition

thinkers of the Enlightenment who spread exciting new ideas were known as **philosophes**

Causes of the Scientific Revolution

the Renaissance stimulated scientific thinking

there was a desire to solve navigational problems during the Age of Exploration

by the 14th & 15th centuries science emerged as a distinct area of study in leading universities

scholars then had a place for thinking, research, and writing



Science and Society

As science assumed greater significance, the question of the role of the Roman Catholic Church in a changing culture became important. While the church opposed the views of many scientists, it benefited from new discoveries that made Renaissance art and architecture possible.

Science and the Church

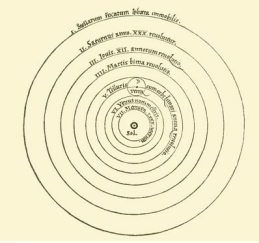
- Church most powerful institution in Europe, Middle Ages
- Primary resource for knowledge, learning
- Cathedral schools, universities trained people to run the church

Conflicts

- Most scientists did not want to challenge role of Christianity
- Church explained world through inspiration, revealed truth
- Science explained world through logical reasoning

The church feared reason as an enemy of faith, but eventually began to embrace some of the achievements of the Scientific Revolution.

The Scientific Revolution



Nicholas Copernicus
(1473-1543)

started his scientific career in Poland in 1492
upheld the common belief of a round earth that rotated on its axis as it revolved around the sun
kept his ideas secret = wouldn't be persecuted

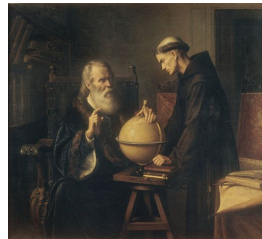


Tycho Brahe
(1546 – 1601)

found evidence in the late 1500s that supported Copernicus' heliocentric theory
set up an astronomical observatory
carefully observed the sky every night for years accumulated data about the movement of the stars and planets



Johannes Kepler
(1571-1630):
astronomer and mathematician;
elliptical orbits



Galileo Galilei
(1564-1642)

mathematician; telescope;
discovered moons orbiting Jupiter:
that all heavenly bodies revolve around the sun
Catholic Church put him on trial;
forced to recant

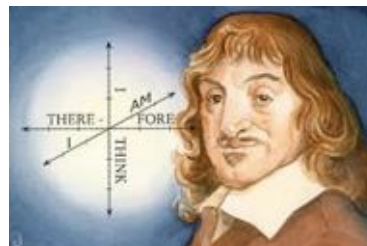
The Scientific Revolution



Francis Bacon
(1561-1626)
philosopher;
scientific method

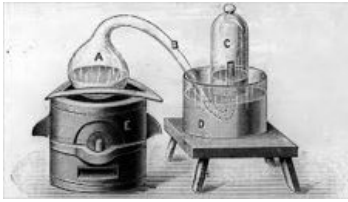


Rene Descartes
(1596-1650)
French philosopher and mathematician - believed truth must be reached through reason
Discourse on Method (1637):
"I think, therefore I am."



What similarities existed between their ideas?

The Scientific Revolution



Joseph Priestly

(1733-1803)

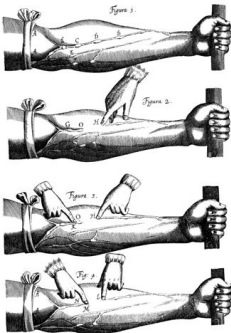
English chemist and clergyman
discovered oxygen and studied the existence of carbon dioxide

Antoine Lavoisier

(1743-1794)

French scientist who discovered the nature of combustion

*Marie Lavoisier, his wife, learned English and Latin so she could translate scientific essays and books for him
she also drew the illustrations for his books*



William Harvey

(1578-1657)

English doctor who proved
that blood circulates through
the body via the heart and
veins

*Andreas Vesalius (1514-1564):
medical student; dissections*

Robert Hooke

(1635-1703)

English scientist who
used the newly invented
microscope to find cells
in vegetable tissue



Effects of the Scientific Revolution



Challenges to Religion:

the universe worked like a machine according to natural laws (without the intervention of God)

Decline in Belief in Magic, Demons, and Witchcraft:

educated classes denied the existence of demons and the power of witchcraft

Questions about Humanity's Role in the Universe:

the importance of humanity reduced: inhabitants of a tiny planet circling the sun

Gave Humanity Control of Nature:

through science and technology, they could improve human life

Challenges to Established Views of Women:

The new scientific ideas concluded that both men and women made equal contribution to reproduction