

PowerPoint[®] Presentations in World History

The Scientific Revolution

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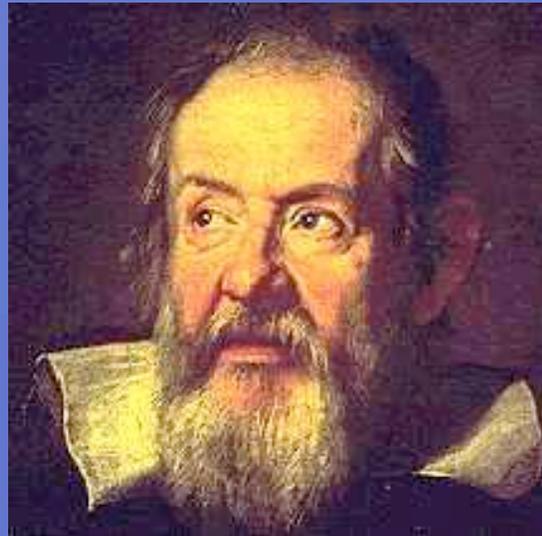
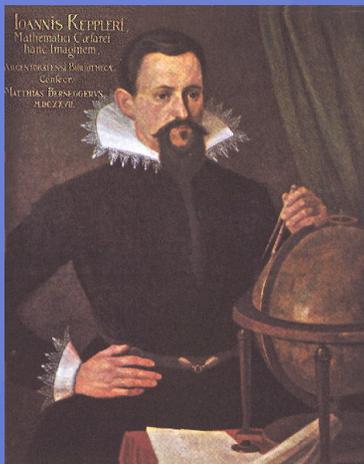
Scientific Revolution



The Scientific Revolution

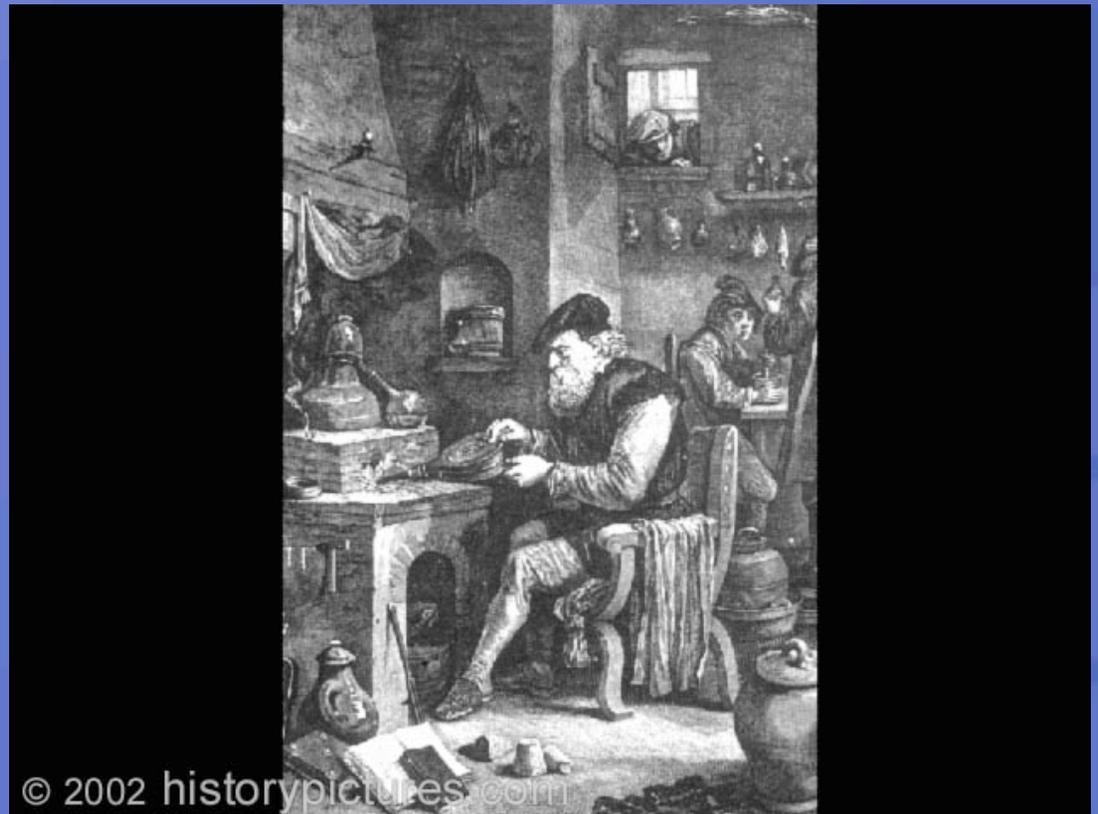
What Was the Scientific Revolution?

- A revolution in human understanding and knowledge about the physical universe
- 17th century
- Began with Kepler, Galileo
- Ended with Newton



“Science” Before the Scientific Revolution

- Based almost entirely on reasoning
- Experimental method or observation wasn't used at all
- Science in medieval times
 - Alchemy
 - Astrology



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A medieval alchemist

Factors Leading to the Scientific Revolution



- Rise of universities
- Contact with non-Western societies
- The Renaissance
- Exploration

Rationalism



René Descartes

- Reason, not tradition, is the source of all knowledge
- René Descartes (1596–1650)
- French philosopher and mathematician
- *Cogito ergo sum* (“I think, therefore, I am”)
- Deductive reasoning

Empiricism

- The belief that experience is the only true source of knowledge
- Roger Bacon
- Shift toward empiricism a hallmark of the Scientific Revolution
- Helped lead to the development of the scientific method



Roger Bacon

Francis Bacon and the Scientific Method



- 1561–1626
- English philosopher and empiricist
- Inductive reasoning
- Argued for experimental methodology

The Scientific Method

Science as a multiple-step process:

1. Observe an object or phenomenon

2. Develop a theory that explains the object or phenomenon

3. Test the theory with experiments

Roots of Scientific Thought: Aristotle

- 4th century BCE Greek philosopher and scientist
- Wrote several scientific works
- His work laid the foundation for scientific study through the medieval era
- Gravity/Theory of falling objects
- Astronomy: Crystal spheres



Roots of Scientific Thought: Ptolemy



- 2nd century CE Greek astronomer, mathematician, and geographer
- The *Almagest* (*Syntaxis*)
- Geocentric (earth-centered) model of the universe
- Motion of the planets