

UNIT 4 STUDY GUIDE:

Scientific Revolution & Enlightenment

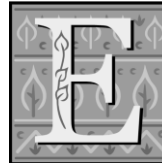


THE HELIOCENTRISM DEBATE:

Ptolemy (Ancient Roman)	Copernicus (Polish)	Kepler (German)	Galileo (Italian)
Geocentric Theory	Heliocentric Theory		
<u>TRADITION</u>	<u>HYPOTHESIS</u>	<u>MATHEMATICAL PROOFS</u>	<u>EMPIRICISM</u>
Astrology (Superstition)	Astronomy (Science)		

E _____

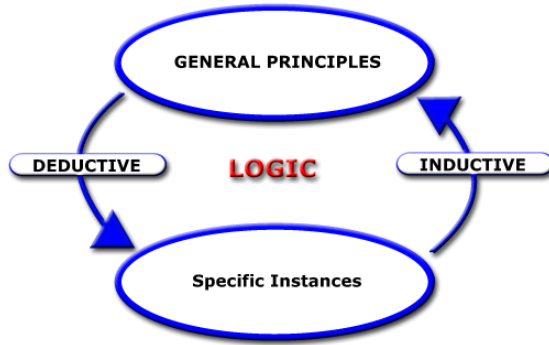
The “natural philosophers” of the early modern period believed that true knowledge comes from experience. The *scientific method* was designed as a system for collecting empirical evidence.



Experience
Experimentation
Evidence

“Natural Philosophers” of the Scientific Revolution		
Philosopher	Country of Origin	Contribution(s)
Descartes		REVIEW ON YOUTUBE
Bacon		
Newton		
Vesalius		
Pascal		

The Scientific Method and Inductive Reasoning



Deductive Reasoning (Aristotle & Descartes)	Inductive Reasoning (Bacon)

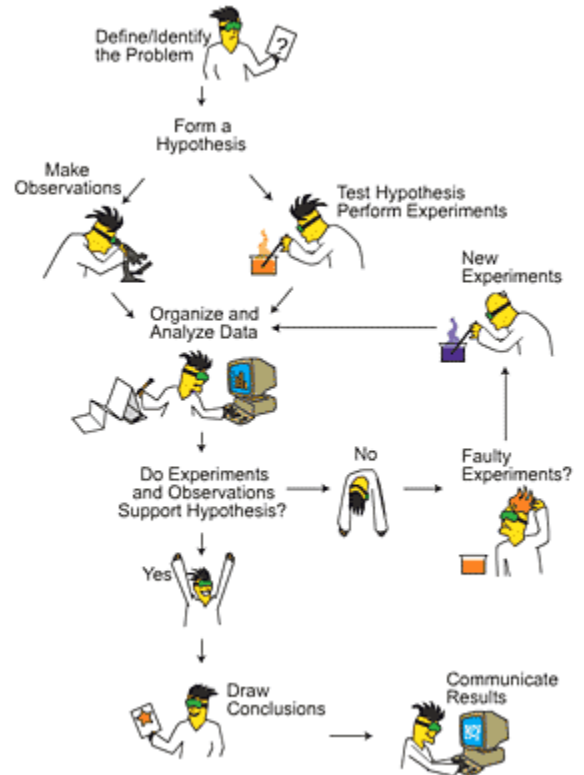


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Sir Francis _____ and Rene _____ were instrumental in formulating the *scientific method*, which created a fixed system of scientific inquiry that was accepted by natural philosophers throughout Europe.

_____ Academies

Absolute monarchs established Royal _____ in order to promote scientific inquiry. These monarchs were not interested in scientific advancement for its own sake, but in the possibilities scientific inquiry had to produce wealth (alchemy) and new military technologies.



**Wealth
Warmaking
Weaponry**

The [British] Agricultural Revolution

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The application of _____ principles and _____ capitalism to agriculture

E _____	I _____	S _____ Breeding
Replaced the _____, where the whole community would plant crops and graze their livestock.	Jethro _____ The _____, which mechanized sowing, was Tull's most famous invention.	The process of breeding animals with desirable characteristics together to produce genetically superior livestock

The Enlightenment

[ENLIGHTENMENT RAP ON YOUTUBE](#)

VALUES OF THE ENLIGHTENMENT				
REASON	SCIENCE	PROGRESS	LIBERTY	TOLERATION

What is Enlightenment? Immanuel Kant, a German *philosophe*, defined “enlightenment” as an individual’s escape from _____ - a sort of self-imposed intellectual childhood. Enlightened individuals are capable of thinking for themselves.

According to Kant, the only thing necessary to escape from *nonage* is _____.
Two institutions dominant in France at the time limited freedom of inquiry:

Freedom-limiting Institutions

in the eyes of the philosophes:



Most *philosophes* were **anticlerical** (against the influence of a hierarchical, institutional Church organization – not necessarily against the general concept of religion) in their thinking.

“And his hand would plait the priest’s entrails, For want of a rope, to strangle kings.” -- Diderot



Natural Religion (e.g., _____)	Revealed Religion (e.g., _____)
Knowledge of God comes from:	Knowledge of God comes from:
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The religion of *Deism*, which boasted such illustrious adherents as Voltaire, Thomas Paine, and Thomas Jefferson, was a natural religion. The metaphysics of Deism are fairly easily explained:

 <p>God exists. He created an orderly universe and made it possible for human beings to understand him through the use of observation and reason.</p>	<ul style="list-style-type: none"> • Sacred texts claiming to contain the revealed word of God • Religious dogmas derived from said texts • Miracles, prophecies and religious "mysteries" 
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Although enlightened ideals spread throughout Europe, _____ was the epicenter of the Enlightenment.

The French “ <i>Philosophes</i> ”		
<i>Philosophe</i>	Notable Published Work(s)	Contribution(s) to Enlightened Thinking
Voltaire		
Diderot		
Montesquieu		
Rousseau		

Enlightened Absolutism

Absolute monarchs in Central and Eastern Europe took an interest in the ideals of the Enlightenment, seeing in them an opportunity to modernize and consolidate their states.



The Enlightened Despots

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(Prussia)	(Austria)	(Russia)
A ruler is the _____ of the state.	The _____ ambitious, but the _____ successful of the enlightened despots. Lifted restrictions on _____s. (Religious Group)	Raised to the throne after participating in a conspiracy to assassinate her husband Purchased _____’s library and paid him to be the librarian _____’s Rebellion

“Only one ruler in the world says: ‘Argue as much as you please, but obey!’” – Kant

Although the enlightened absolutists promoted religious toleration, education, and other benevolent reforms, they tended to promote these ideals only to the point to which the ideals furthered their goals. Ultimately, the enlightenment ideal of freedom would prove incompatible with absolute rule.

The Program of the Enlightened Absolutists:

- Religious Toleration
- Free Speech and Press
- Private Property Rights
- Patronage of the Arts and Sciences
- ~~Rebellion~~