

# CHAPTER 22 REVIEW



## SECTION 1- SCIENTIFIC REVOLUTION

- **IMPORTANCE**-leads to questioning EVERYTHING!!
  - Time period before: Renaissance, Exploration, and Reformation
  - In ancient times up to the 15<sup>th</sup> century, peoples beliefs were based on logic.
  - 4 humors
    - blood
    - flem
    - yellow bile
    - black bile
  - If sick→ imbalance of 4 humors
    - Bleed people out (leeches)
- Copernicus
  - Book- *On the Revolution on Heavenly Spheres*
  - Polish priest
  - Put in charge by church to develop new calendar
  - During his time-earth =center of the universe
  - During his study- didn't make sense mathematically
  - Copernicus ideas-goes against church doctrine.
  - Heliocentric theory (Copernican theory)
- Tycho Brahe
  - Every single night for 20 years studied and mapped the stars.
  - No telescope-naked eye
  - Notice: monitored particular comet, didn't go in circular path-goes against church doctrine.
- Galileo
  - Supported/paid/hired by Medici family (trying to be most powerful family-patrons of the sciences/Galileo)
  - One of 1<sup>st</sup> people to create/use microscope
  - 1610- *Starry Messenger*

1. Sun has spots(PROBLEM-church says everything perfect)
  2. Looks at Saturn-not perfect shape
  3. Moon-rough, not smooth-like earth (goes against church doctrine)
  4. Jupiter-sees it has 4 moons –moons revolve around Jupiter, not Earth→ against church doctrine.
- Church ok-only if theory, but Galileo puts his ideas forward as FACTS→ officially over the lie
  - 1632 2<sup>nd</sup> book- *Dialogue Concerning the Two World Systems*
    - Two world views:
      1. Earth is center (Geocentric)-Church
      2. Sun is the center-Heliocentric (Copernican view)-Science
    - Dialogue of 3 people discussing heliocentric vs. geocentric
    - Open discussion everyone read book
    - Brought before church to answer questions of heresy-deny what he says or killed
- Scientific Method
    - Definition: Logical procedure for testing ideas
    - 1. Observation
    - 2. Question
    - 3. Hypothesis
    - 4. Testing
    - 5. Collecting Data
    - 6. Analyze Data
    - 7. Conclusion
- Bacon & Descartes
- Bacon:
    - Generates knowledge to improve people's lives
    - Observe experiment and draw conclusions
    - People→find real truth of things
  - Descartes (mathematician)
    - Reject old assumption
    - Mathematics
    - Proof by logic
    - "I think therefore I am"
      - you can't believe in any of your senses, but you can trust your mind.
      - Believes is mind and ability to use it proves his existence.
  - 2 views of government
    - Hobbes (England)
    - *Leviathan* (1651)
    - Negative view of society-believes people are naturally wicked and selfish-you can't let people govern themselves
    - Social Contract- people will give up rights/power to the Leviathan( person in control/master)- so bigger ruler can control society and make it safe for you (king)
    - Believes Leviathan should absolute monarch.
  - Locke
    - Natural rights

- People are born free and equal
  - Life, liberty, and property (vote)
  - Government protects rights
    - Abuse of rights=overthrow
- Jean Jacques Rousseau
  - Civilization corrupts
  - \*\*\* “Man is born free, but everyone he is in chains.”
    - Once you become part of society you follow rules no matter what.
  - Free formed government
    - Individual freedom
    - People should be free & equal
    - Direct democracy (voting directly for someone)
    - People agree to be governed by each other
    - Social contract
      - Agreement among free people to form a government.
- Mary Wollstonecraft
  - Womens rights
  - Education
  - *A Vindication of the Rights of Woman* –to let people know how women benefit society if put in the educational process.
- Baron de Montesquieu
  - Separation of powers (England)
    - “power should be a check to power”
      - power balancing each other out
    - Checks and balances
    - Influence United States of America
- Voltaire
  - France
  - Writes about politics
  - Key ideas
    - Religious tolerance
    - As many religions as possible inside country
      - Society will progress better
    - \*\*\*Freedom of speech\*\*
- Beccaria
  - *On Crimes and Punishment*
  - No use of torture
  - Most info get when torture someone is false
  - Regular speedy trials
  - No capital punishment (death penalty)



## SECTION 2-THE ENLIGHTENMENT

- Challenge old ideas (scientific,govt., everything)
- Secularism-worldly, discovering what is really here on Earth
- Individualism-people able to study on their own
- Human reason- using human research and logic to find truths of world
- Paris Salons
  - Enabled anyone to discuss art, science, politics in a free and equal environment
  - Private gatherings of intellectuals
  - Spread ideas of writer, artists, philosophers, and scientists (spread word to family and friends)
    - Usually takes place in home
    - Men and women-middle class and up
- Diderot Encyclopedia
  - another way enlightenment spreads
  - 1. Book that incorporates information from scholars around the world
  - 2. Information angered both government (ideas go against them-Locke-over throw, Rousseau , Montesquieu) and church (new ideas in science)

## SECTION 3-

### Catherine the Great (Enlightened Despot)

- Abolish torture (Beccaria)
  - Innocent until proven guilty
  - Education of women (Wollstonecraft)
  - No religious persecution (Voltaire)
  - Music- Beethoven & Mozart
  - Architecture
    - neoclassical
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# Quick Re-cap:

- Old way of thinking:

**Aristotle**

**Plato**

**Church**

\*archaic way of thinking

- Scientists:

**Copernicus**-Heliocentric

**Tycho Brahe**-compiles 20 years worth info-other scientists can use it in the future

**Kepler**-elliptical orbits

**Galileo**-writing 1610 (telescope) planets and other things, writes another book→persecuted by church

**Isaac Newton**

**Bacon & Descartes**-scientific method

- Scientific Instruments: telescope, microscope, barometer, thermometer
- Medicine: small pox vaccine
- Chemistry: Boyles law

- Enlightenment

**Voltaire**

**Rousseau**

**Montesquieu**

**Wollstonecraft**

- Ideas 3 branches government→Montesquieu
- 1<sup>st</sup> amendment
- How enlightenment affects Declaration of Independence & Constitution.