

Renaissance & Enlightenment

Renaissance

1350 - 1550 - rebirth of classical learning
Renaissance intellectuals believed in Dark Ages
recovery from 14th century

The Italian Renaissance

The Renaissance begins in Italy
access to classical works and wealthy patrons
focus will be on individual instead of community spirituality

Politics and Diplomacy

Italy was divided into a series of city-states
constant fighting lead to creation of ambassador system
originally seen as ambassadors of Church and peace
granted protection as a result

Machiavelli

advisor to republican council in Florence
exiled after Medici's return to power
writes the Prince and The Discourses
"ends justifies the means"
changes the nature of politics ever since

Humanism

movement based on the study of Greek/Roman classics
Petrarch viewed as father of Italian humanism
believed middle ages had no learning
focused on individuality rather than spirituality
Printing dramatically affected the spread of the Renaissance
1450 - printing press with movable type invented
Johannes Gutenberg
1456 - Gutenberg Bible is completed
thousands of copies printed
gives masses more knowledge

Artistic Renaissance

painters focused on nature/humanity
structure and movement particularly important
perspective/space/lighting are discovered
Patrons were important as source of revenue
Lorenzo the Magnificent was the most generous
artists became celebrities in society
Sandro Botticelli - *Primavera*
emotions begin to appear to characterize people
Donato Donatello
David is finest statue since Rome
Portraits became a very popular art form
nobles viewed them as legacy

Raphael was the master
able to reflect personality in work
Portrait of Pope Julius II
School of Athens in Vatican

Leonardo Da Vinci
studied astronomy, anatomy, classics for his art
designed many new inventions
Last Supper masterpiece of character in painting
known as "the Divine One"
Mona Lisa show psychological mastery
seems to change emotions based on viewer

Michelangelo
Pieta
His *David* considered best sculpture ever created
Creation of Adam in Sistine Chapel shows diversity
3 years to create 5800 sq. ft painting

Northern Renaissance
nobles visiting from the North demanded similar work
some bought works in Italy and brought them home
artists begin to learn and copy Italian techniques
Jan Van Eyck
set new standards for detail in his paintings
Northern artists put more emotion and religion in their work
Music began to leave the church and develop independently

Renaissance leads to the Scientific Revolution

Science had remained remarkably uniform since Aristotle & Galen
their theories supported the Christian view of the universe
Renaissance brought some ancient critics back to light
17th century thinkers realized not everyone agreed with Aristotle
Renaissance artists also brought focus back to observation of nature
Criticism of Roman Catholic Church encouraged thinkers to challenge all
If religion is wrong, why not the science based on it?

Revolution in Astronomy

Aristotle and Ptolemy had developed an accepted universe system
Earth was center of Universe
planets, sun, and stars revolved around Earth
revolved in perfect circles
Gods lived beyond the stars
"Heavenly Bodies" were made of different solid substance

Nicolaus Copernicus

Polish astronomer is the first to disagree with ancient system
1543 - *On the Revolution of Heavenly Spheres* published
so controversial, waited for death to publish
first astronomer to argue that sun is center of universe
still believes in perfect circles and heavenly bodies

Tycho Brahe

state astronomer for King Frederick II of Denmark
spent 20 years observing stars and recording their positions
laid foundation for the work of Kepler

Johannes Kepler

became Brahe's assistant shortly before he died
will become imperial mathematician to Rudolf II of Austria
Kepler will publish three laws of planetary motion based on Brahe

1. planets orbit in the shape of an ellipse, not circle
2. speed of planet increases closer to sun
denies divine perfect motion
3. planets with larger orbits revolve slower

Galileo Galilei

Italian astronomer, inventor, and mathematician
first to develop the telescope to study the stars
1610 - publishes *The Starry Messenger*
discovered mountains and craters on moon, moons around Jupiter
destroys Aristotle's notion of perfect heavenly bodies
planets clearly made of physical matter like Earth
agrees with Copernicus' sun-centered universe theory
Galileo taken to face Roman Inquisition
forced to recant belief in sun-centered universe
Church feared destruction of theological universe
Galileo agrees to not discuss Copernicanism
1632 – publishes (in Italian) *Two Chief World Systems: Ptolemaic and Copernican*
argued for Copernican system
Galileo placed under house arrest for remainder of life
Galileo also made two contributions to laws of motion

1. proved that a body accelerated when force was applied
2. proved that uniform motion is as likely as uniform rest

Isaac Newton

English scientist will tie together work of previous scientists
invented calculus
1686 - publishes *Principia*
last serious scientific work written in Latin
proved mathematical laws of gravitation
est. three principles of motion

1. a body in motion remains in motion
2. a body at rest remains at rest
3. for action, an equal and opposite reaction

Newton demonstrated his laws applied to planetary bodies
created a brand new model for the universe
Newton believed that God created system and was everywhere

Rene Descartes

fundamentally changes the way humankind is perceived

1637 - publishes *Discourse on Method*
argues that all senses are not reliable
"I think therefore I am"

Only reason can be used to determine truth, not faith or Scripture
Cartesian Dualism

argued that mind and matter are two separate substances
both created by God, but separate

all matter can be understood by reason and examination
condemned by Church, place on Index of Forbidden Books

The SR brings science in direct conflict with religion

Witchcraft Craze

"witches" & "warlocks" were burned at the stake

anyone who practiced "dark" arts of religion

usually defined as working with Satan

standards of proof were notoriously weak

thousands executed in Europe and New World

The Enlightenment

The Scientific Revolution had far reaching affects

higher literacy rates spread new discoveries throughout Europe

18th century philosophes rejected 17th century religious base

wanted to see reason applied to religion and Bible

Travel literature supported fact that there were many options

Newton and Locke provided new universal foundation

Newton described a universe described purely by reason

Heavenly bodies no longer exist

Locke argued that all people are born with blank minds

knowledge is attained solely through experience

Reason can be used to fill in all knowledge gaps

not just of physical world, but all knowledge

Thomas Hobbes

gov. created to defend man against himself

John Locke

gov. is contract between ruler and subjects

people have right to revolt

Philosophes

Group of intellectuals who pushed the growth of reason/secularism

mostly educated upper-middle class

wanted to use new philosophy to change the world to a better place

called for religious toleration and freedom of expression

constantly hiding from state and religious authorities

Paris will be center of the Enlightenment

Philosophes tried to find "natural laws" in all areas of knowledge

Diderot

French writer who decided to compile knowledge

publishes *Encyclopedia* in 28 volumes

many philosophes made contributions
much information was very controversial
French Gov. forced him underground

Montesquieu

French Noblemen
1748 - publishes *The Spirit of Laws*
argues for checks and balances in government
power split between executive/legislative/judicial

Voltaire

French writer and philosopher
argued for complete freedom of expression
"I do not agree with what you say, but I will defend to the
death your right to say it."
Condemned religious fanaticism as destructive
argued that God created world but is not active

Deism

Jean-Jacques Rousseau

1762 - publishes *The Social Contract*
submitted that men were happy & free in natural state
argued that government evolved to protect private property
admitted that it was impossible to return to natural state
therefore, men must take back their liberty
direct democracy

Economics

Mercantilists

Argued that wealth (precious metals) is finite
Neither created nor destroyed
Thus being rich required exports
Importing sent money elsewhere
Promoted domestic industry
Raised trade barriers

Physiocrats argued that Mercantilists were wrong
wealth is not finite based on gold and silver
wealth is based land, agriculture, and mining
argued that economics is natural and should not be
influenced by government

Adam Smith

Scottish philosopher - "father of economics"
1776 - publishes "Wealth of Nations"
Laissez-faire economics
based on laws of supply and demand
natural forces
"free hand of the market"
trade is always beneficial
Government should never interfere in economy