Development of Science

Department of Economics and Foundation Course, R.A.P.C.C.E.

Prehistoric Era – Paleolithic Age

Neolithic Age -Tools

The Stonehenge

Urban Revolution: Egypt and Mesopotamia

- Invention of written language for communication record keeping and transmission of culture

- Number System based on 60 which gives us 60 minute hour and 360 degree minute circle.

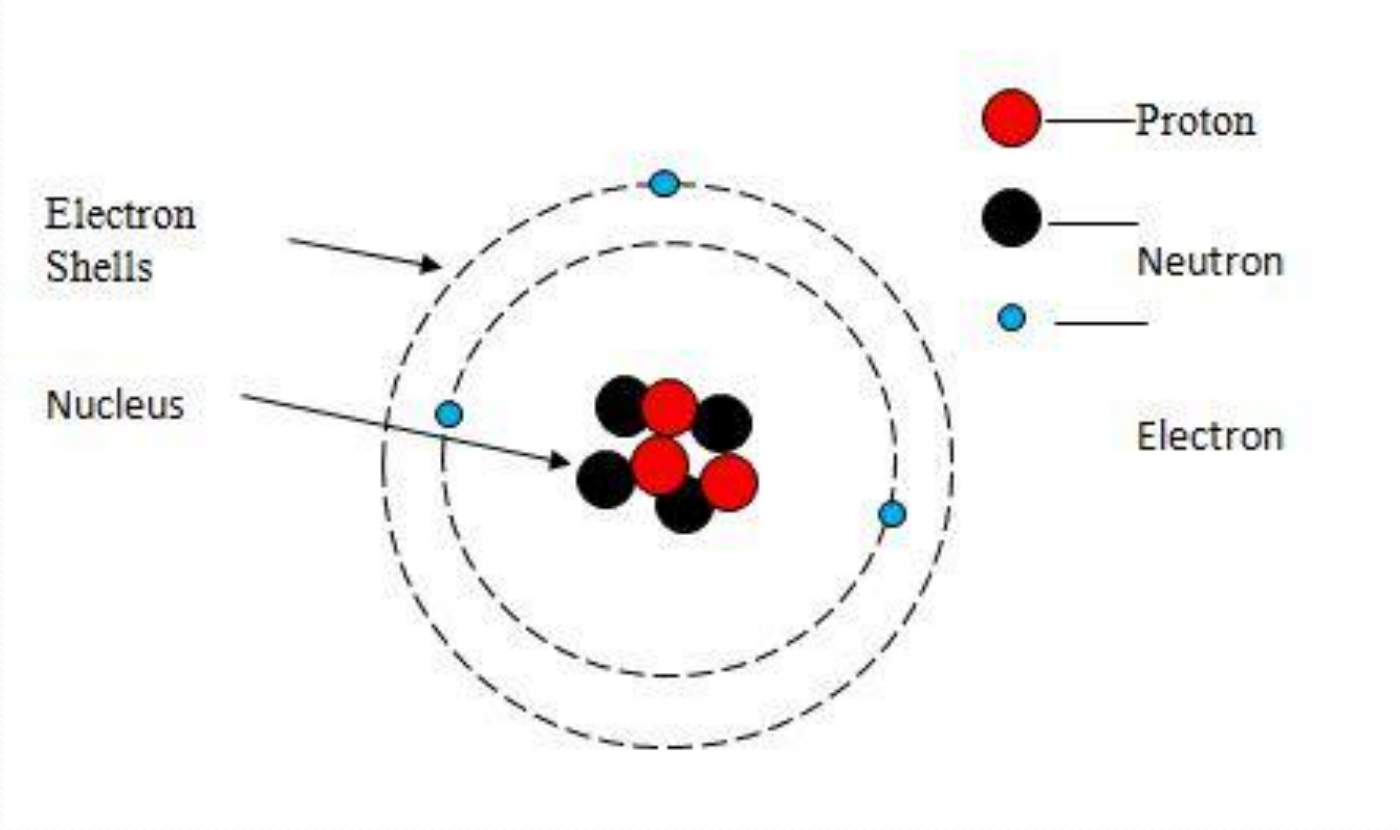
Sumerian Pottery

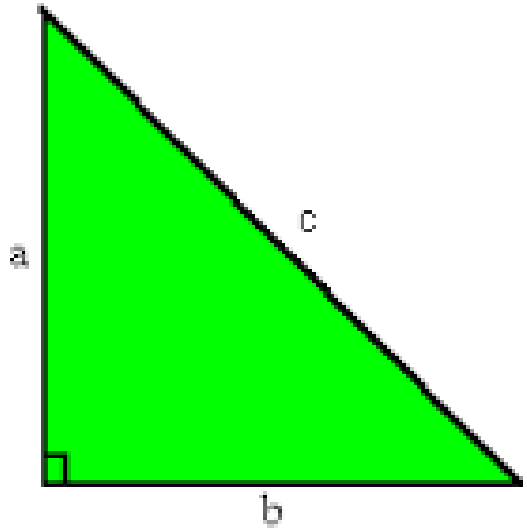
The Classical Era

- Early Greek Contributions

1. Thales of Miletus contributed to astronomy, geometry and cosmology.
2. Anaximander (5^{th} Century B.C.)
3. Philosophers Leucippus and Democritus
4. Hippocrates: Father of Medicine

Lithium Atom

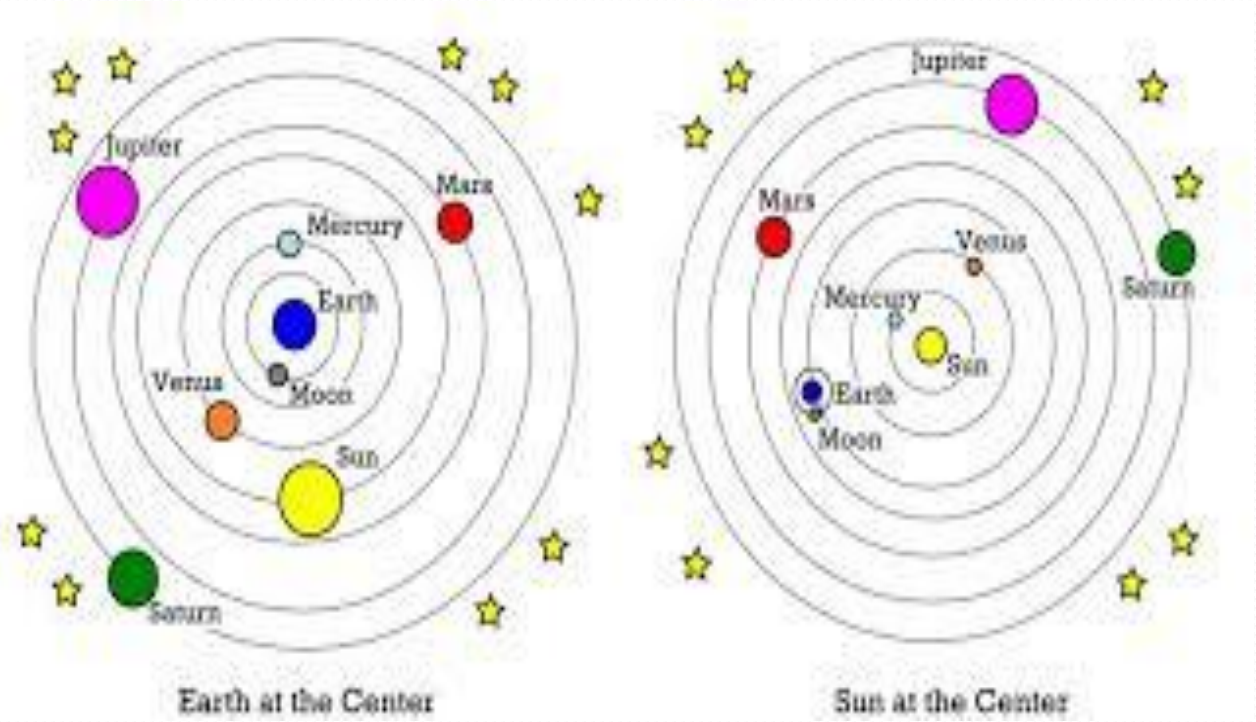



a
c
b
a^2 + b^2 = c^2

Alexandrian School

- Euclidian Geometry
- Aristarchus: Heliocentric Model of universe
- Ptolemy: Geocentric System

Geocentric and Heliocentric Models



The Middle Ages

- Early Middle Ages (AD 476-1000) : The Dark Ages
- King Charlmagne
- High Middle Ages (AD 1000-1300)
- Late Middle Ages (AD 1300-1450)
- Black Death (1348): obstacle to scientific progress

The Renaissance (1450-1600)

- Invention of Printing Press by Johann Gutenberg (1450) : Establishment of publishing houses
- Nicholas Copernicus: Heliocentric Model
- Galilio Galilei
- Johannes Kepler

Rejection of traditional paradigms

- Nicolas Copernicus: Proposed the heliocentric model
- Johannes Kepler: Discovered that Earth and planets evolve around the Sun in elliptical orbits rather than circular orbits

Age of Reason and Enlightenment (1600-1800)

- Superstitions, ignorance, abuses in Church and the State were criticised
- Provided base for American and French Revolutions
- Enlightenment means the belief that science can help improve living conditions and also our understanding of the world

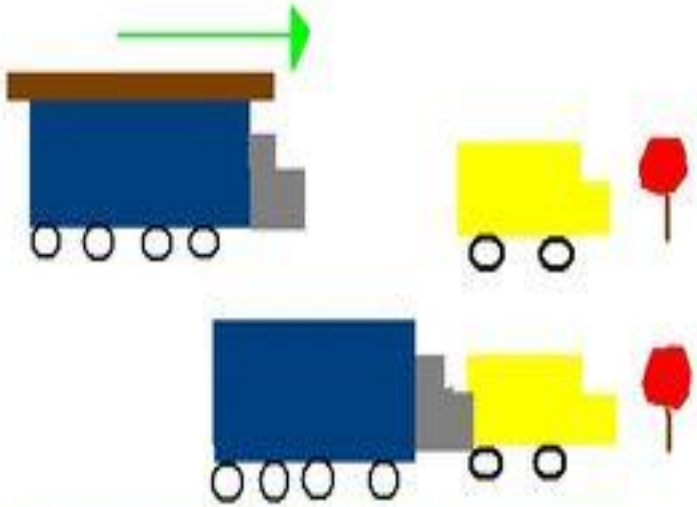
Discoveries and Innovations

- Isaac Newton: Founder of theoretical physics, three laws of motion, principle of gravity
- Antoni van Leeuwenhoek: Made glass bead lenses and used them to magnify the microscopic microbes
- Charles Darwin
- William Harvey demonstrated that blood circulates constantly through the heart and vessels.

Newton's Laws of Motion

Newton's First Law

An object at rest tends to stay at rest and an object in motion tends to stay in motion with the same speed and in the same direction unless acted upon by an unbalanced force.

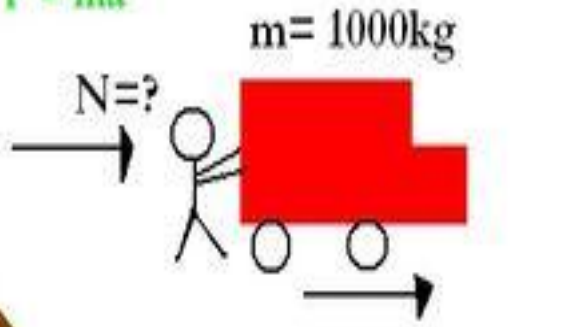


If the truck rams into the back of the car, the log will continue in motion and fly forward off the truck, and the car will be pushed forward as well, although it will stay at rest until the truck hits it or the driver accelerates.

Newton's Second Law

The acceleration of an object as produced by a net force is directly proportional to the magnitude of the net force, in the same direction as the net force, and inversely proportional to the mass of the object.

F = ma



F= 1000kg x 0.5m/s/s

F= 500N

Newton's Third Law

For every action, there is an equal and opposite reaction.

Thank You.....