

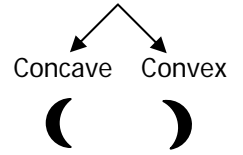
# Grade 8 - Unit 3 – Light and Optical Systems Concepts

## The Theory of Light

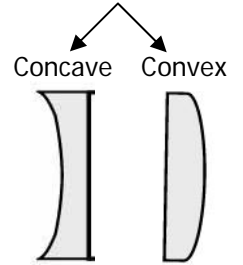
**LIGHT TRAVELS IN STRAIGHT LINES**  
**LIGHT CAN BE REFLECTED**  
**LIGHT CAN BEND**  
**LIGHT IS A FORM OF ENERGY**

## Devices Using Light

### Mirrors



### Lenses



Thoughts About Light

Archimedes (Warships)

Pythagoras (Eyes – Light Source)

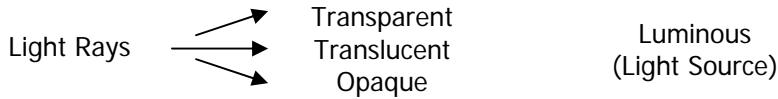
Euclid (Reflected)

Al-Haytham (Optics)

Sir Isaac Newton (Prism)

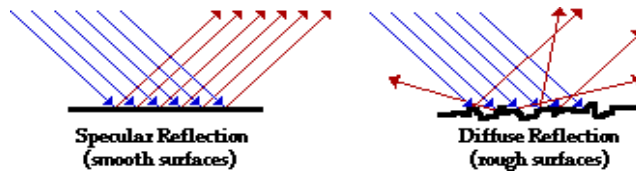
Ole Romer (Speed of Light)

Albert Michelson (Light Speed)



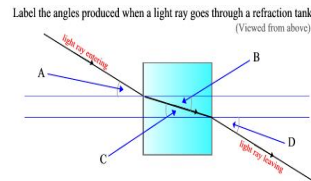
## REFLECTION

**LAW OF REFLECTION** – The Angle of Incidence, of the light hitting a plane mirror, equals the Angle of Reflection, of the light being reflected by the mirror.



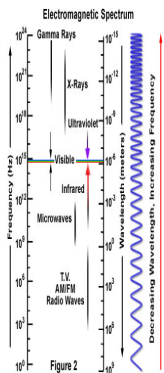
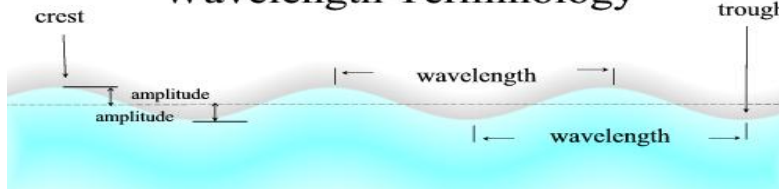
## REFRACTION

**LAW OF REFRACTION** – The Angle of Incidence of the light entering a medium of greater or less density will have an Angle of Refraction that will increase or decrease from the normal, because the light is bent (slows down or speeds up)



## Wave Model of Light

### Wavelength Terminology

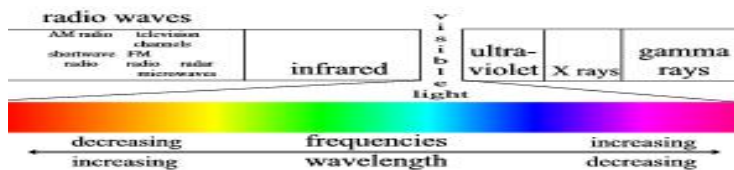


Light Sources

Natural Artificial

### Colours of Light ROYGBIV

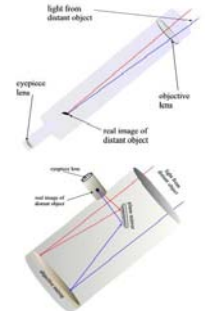
### The Electromagnetic Spectrum



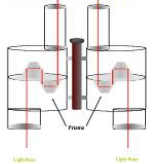
## Microscopes



## Telescopes



## Binoculars

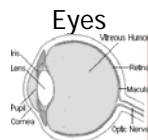


Television  
Computer  
Laser

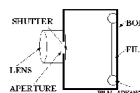
Analog Images

Digital Images (Pixels)

## Image Formation



## Camera



Stadium Image

Resolution

CCD