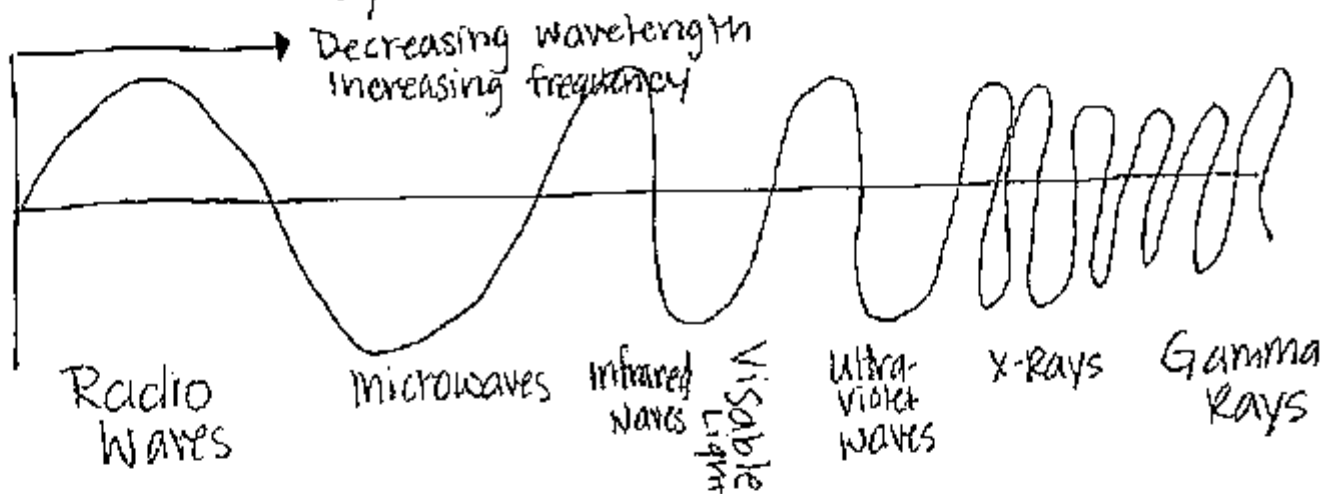


# Light Waves

Light - is a type of energy produced by the vibration of electrically charged particles  
\* does not need a medium to travel

Electromagnetic Spectrum - different type of light waves, most cannot be seen by humans



Visible Light - the only part of the spectrum we can see

\* includes the rainbow  
red, orange, yellow, green, blue, indigo, violet

longer wavelength shorter wavelength

## Light Properties

- spreads out in all directions from source
- straight lines - rays
- travels at speed of light 186,282 miles/sec.
- can travel in a vacuum

Reflection - shine a light on a surface  
↳ the light bounces back

Law of Reflection - light will always be reflected  
by a surface at the same angle at  
which it hits the surface

Transmission - light passes through material

Transparent - light passes through easily ex. water  
↳ can see through because light passes  
through

Translucent - transmits some but not all light

Opaque - matter does not transmit any light

Refraction - When light moves from one  
medium to another it changes  
direction slightly

ex. Spoon in water looks broken  
↳ light travels through water and  
air at different speeds

Absorption - absorbing light energy converts  
it to other energy

\* objects get their color from absorption  
ex. red apple → red is reflected all other colors are  
absorbed

White → all colors are reflected

Black → all colors are ~~not~~ absorbed