Light as a Wave: Part 2

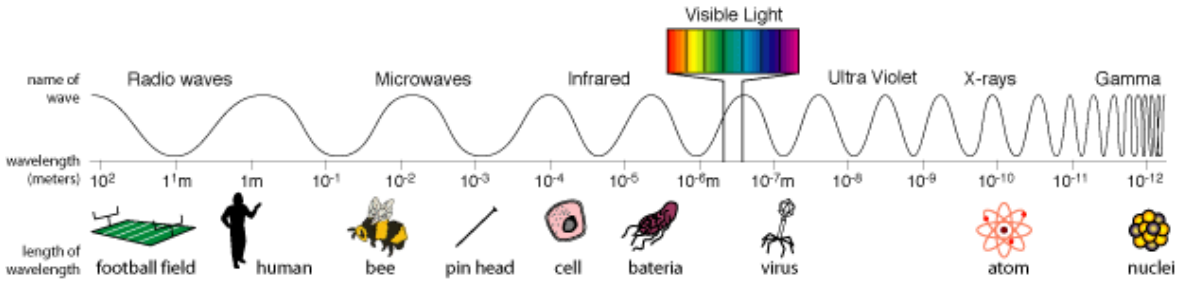
SNC2D

Light will travel _____ in _____ media (e.g. glass), but the speed in air is still effectively *c*.

The Spectrum:

The wavelength (and therefore the frequency of a light wave will depend on the _____ of the disturbance in the EM fields.

Visible light is actually a very _____ part of the EM spectrum.



Very short (i.e. _____) wavelengths would be generated by very small-scale transitions (i.e. in the _____).

Short wavelengths are associated with _____ frequencies (and high energies):

_____ light rays, originally called deoxidizing or _____ rays for their chemical reactivity, can cause _____.

_____ light is felt as _____.

_____ are emitting infrared radiation.

We use longer-wavelength _____ to _____

and still-longer-wavelength _____ waves to _____.

In the visible spectrum, wavelength translates to _____.

Red light has the _____, _____.

Violet light has the _____, _____.

Practice Question: What is the frequency of red light?

Resonance

Different atoms and molecules have different natural frequencies of vibration and will

_____ and _____ different frequencies of light.

(When light is _____, the wave energy is converted to the _____

energy of the particles.)

"White" light is the _____ of all frequencies. The perceived colour of an object

illuminated with white light therefore depends on which frequencies are _____.

Example: A shirt that appears black is _____ all colours (and therefore all that

_____ of the light waves).

A shirt that appears white is _____ all colours.

White light can also be produced by combining only three colours. These colours are called

_____ colours, and in physics are _____.

Secondary colours are formed by the _____ of 2 primary colours.

_____ + _____ = _____

_____ + _____ = _____

_____ + _____ = _____