**Light & the Electromagnetic Spectrum Notes**

**1. Light**

***\*Draw light rays leaving a source***

* Light is a form of \_\_\_\_\_\_\_\_ that travels as an electromagnetic wave.
  + Electromagnetic waves are made of \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ fields.
  + EM waves can travel through \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.
* Light travels in a \_\_\_\_\_\_\_\_\_\_ line



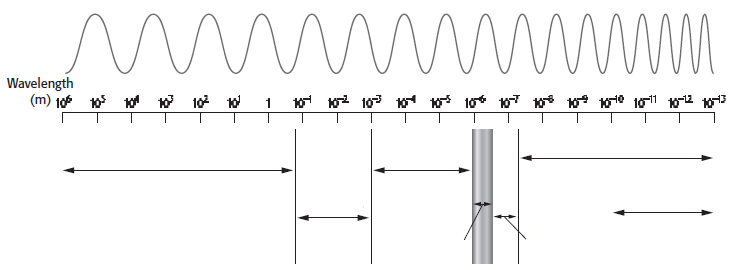
* + Draw light leaving a source: use straight \_\_\_\_\_\_\_\_ with \_\_\_\_\_\_\_\_\_\_ at end to show \_\_\_\_\_\_\_\_\_\_\_\_\_\_ light is traveling.
  + Light is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ from a light source (light bulb, sun, flame, etc).

***\*Light bulb emits light into your eye***

* + Emit: to \_\_\_\_\_\_\_\_\_ forth/out from (a light source).

**2. Electromagnetic Spectrum**

* Electromagnetic Spectrum is the entire \_\_\_\_\_\_\_\_\_ of all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves.



* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: longest wavelength, lowest frequency, lowest energy, \_\_\_\_\_\_\_\_\_\_\_ sources.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: shortest wavelength, highest frequency, highest energy, \_\_\_\_\_\_\_\_\_\_ sources.

**3. Wavelength and Frequency**

* All \_\_\_\_\_\_\_\_\_\_\_ have both a wavelength and a frequency.
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the distance between the tops or crests of two waves.

(draw the wave and label)

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the number of waves that pass a point in 1 second.
    - the more crests that pass a point in 1 second, the \_\_\_\_\_\_\_\_\_\_\_ the frequency.

(draw both waves and label)

**4. Visible Light**

* Very \_\_\_\_\_\_\_\_ part of electromagnetic spectrum you \_\_\_\_\_\_\_ \_\_\_\_\_\_\_.
* Energy from the \_\_\_\_\_\_\_ reaches Earth as \_\_\_\_\_\_\_\_\_\_ light. It is a \_\_\_\_\_\_\_\_\_\_\_\_\_ of all \_\_\_\_\_\_\_\_\_\_ of light.
* White light can be divided into \_\_\_\_\_\_\_\_\_\_ according to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Can use a \_\_\_\_\_\_\_\_\_ to split white light into different wavelengths.

(draw light entering prism, and the different colors coming out)

* Each color has a \_\_\_\_\_\_\_\_\_\_\_ wavelength.
* R: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* O: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Y: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* G: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* B: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* I: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* V: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**5. Infrared Waves**

* Range from \_\_\_\_\_ nm to \_\_\_ mm.
* \_\_\_\_\_\_\_\_\_\_ wavelength than \_\_\_\_\_\_\_\_ light.
* \_\_\_\_\_\_\_\_ the Earth & keeps temperature suitable for life.

**6. Ultraviolet Light**

* Range from \_\_\_\_ nm to \_\_\_\_\_ nm.
* \_\_\_\_\_\_\_\_\_\_\_ wavelength than \_\_\_\_\_\_\_\_\_\_ light.
* Some animals like \_\_\_\_\_\_\_ can \_\_\_\_\_\_ \_\_\_\_\_ (ultraviolet) light.