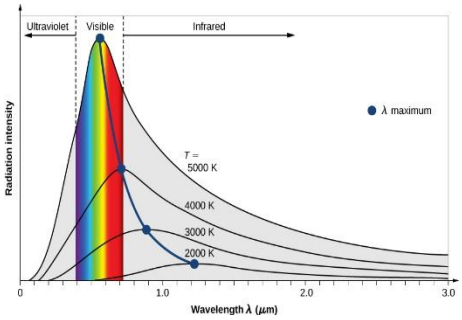
LESSON 7 WORKSHEET **ANSWERS**_____
SURVIVAL SCIENCE **INITIALS:**_____

LIGHT

Wien's Law: The shorter the wavelength (λ) the higher the energy/frequency.
4 wavelengths depicted → **GRAPH #1**

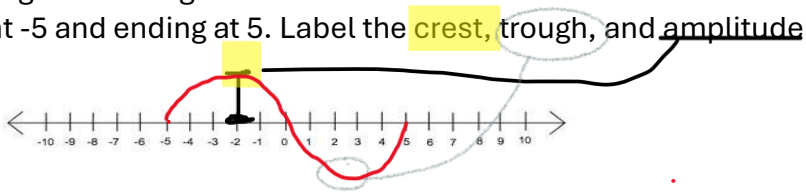


1. Infrared radiation is: VISIBLE or INVISIBLE

2. Energy is LOWER or HIGHER as the λ shortens.

3. When the wavelength lengthens, what happens:
   To the Temperature? DROPS/LOWERS
   To the Intensity? DROPS/LOWERS

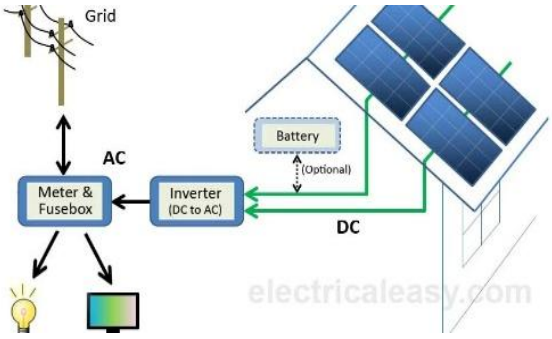
4. Draw a single wavelength on the number line below starting at -5 and ending at 5. Label the crest, trough, and amplitude (1/2 Height)



5. If Graph 1 illustrates light from our sun, what is our sun's approximate temperature in Kelvin? **~5500 K (5770 K)**

ENERGY → PHOTONS

Solar energy, like wind, water, and heat, can be converted to **electricity**. The photovoltaic effect energizes electrons to move through the solar cells and into a current.



1. Solar cells convert sunlight directly into:
   ELECTRICITY

2. What do we call a "particle or packet" of light? PHOTON Does it have a characteristic frequency and wavelength?
   YES or NO

3. The highest energy wavelength/photons are: VISIBLE XRAYS GAMMA

4. Electrons respond to photons by changing energy levels. These energy jumps are called:
   ELECTRICITY TRANSITIONS TRANSMISSIONS

5. Highly energized electrons can escape the nucleus of an atom creating a/an:
   SOLID LIQUID ION