

Electromagnetic Spectrum Assignment

1. What is the EM spectrum?
The collective noun describing all types of radiation arranged by the amount of energy they carry
2. List 5 examples of electromagnetic radiation.
Radio waves, microwaves, Infrared light, Visible light, Ultraviolet light, X-rays, Gamma rays
3. Which waves have the lowest
 - a. Wavelength? Gamma waves
 - b. Frequency? Radio waves
 - c. Energy? Radio waves
4. How is visible light different than other forms of EMR?
It is the only one visible to the human eye
5. Why do you want to limit the amount of UV radiation you are exposed to?
UV radiation can cause skin cancer and cataracts in large doses.
6. Why do you think that lead is placed over people when they are getting x-rays?
X-rays are very penetrating and can cause cancer and kill living cells with enough exposure.
Lead is more difficult for x-rays to penetrate.
7. Briefly describe how different frequencies of EMR are produced.
When an electron drops from one energy level to another, it gives off energy in the form of EMP.
8. What is the speed of EMR in a vacuum?
300,000 km/s
9. As a general rule, what is the relationship between the frequency of a photon and its wavelength?
Greater frequency: lower/shorter wavelength
10. As a general rule, what is the relationship between the frequency of a photon and its energy?
Greater frequency: higher energy