

Waves & Electromagnetic Spectrum Project

Directions: Use the word bank (below) to answer the following questions.

Crest Frequency Mechanical Infrared
 Trough Transverse Radio Gamma Rays
 Wavelength Longitudinal Ultraviolet X-Rays
 Visible Light Amplitude Electromagnetic

1. _____ are used to penetrate solids and are used in doctor’s offices and airports.
2. _____ is the distance between one point of a wave to the same point in the next wave.
3. _____ is the number of waves per unit of time.
4. _____ waves occur when the motion of the medium is parallel to the direction of the wave.
5. _____ waves have a color spectrum known as ROYGBIV.
6. _____ waves disturb matter.
7. The _____ is the top of a wave.
8. The _____ is the bottom of a wave.
9. _____ is the maximum distance that matter is displaced from the resting position.
10. _____ are produced by stars and galaxies, and can be used to kill cancer cells.
11. _____ waves occur when the motion of the medium is at right angles (perpendicular) to the direction of the wave.
12. _____ waves are often used in heat lamps, remote controls, and alarm systems.
13. _____ waves can cause cancer, and is utilized by insects to locate nectar.
14. _____ waves are transverse waves that disturb electromagnetic fields.
15. _____ waves have the shortest wavelength and the highest frequency.
16. _____ are used for cooking and mobile phones.

Part 2

1. In each of the following pairs, circle the form of radiation with the LONGER WAVELENGTH:

- a. red light or blue light
- b. microwaves or radiowaves
- c. infrared radiation or red light
- d. gamma rays or UV radiation

2. In each of the following pairs, circle the form of radiation with the GREATER FREQUENCY:

- a. yellow light or green light
- b. x-rays or gamma rays
- c. UV radiation or violet light
- d. AM radio waves or FM radio waves

3. In each of the following pairs, circle the form of radiation with the LOWER ENERGY:

- a. red light or blue light
- b. microwaves or radiowaves
- c. infrared radiation or red light
- d. gamma rays or UV radiation
- e. yellow light or green light
- f. x-rays or gamma rays
- g. UV radiation or violet light
- h. AM radio waves or FM radio waves

Part 3: Fill in the Table below:

Low _____, Long wavelength ←————→						
High frequency, Short _____						
Radio Waves						Gamma rays