

Name _____

Waves & Electromagnetic Spectrum Worksheet

Directions: Use the word bank to answer the following questions. **Each word will be used only once.**

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

- _____ waves are used to penetrate solids and are used in doctor's offices and as airports.
- _____ is the distance between one point of a wave to the same point in the next wave.
- _____ is the number of waves per unit of time.
- _____ waves occur when the motion of the medium is parallel to the direction of the wave. Give an example.

10. Distinguish between a *transverse* wave and a *longitudinal* wave.

11. Distinguish between *constructive interference* and *destructive interference*.

10. What is the **energy** of x- radiation with a $1 \times 10^{-6}\text{m}$ **wavelength**?

11. What is the **energy** (Joules) of Violet light with a **frequency** of $7.50 \times 10^{14}\text{ s}^{-1}$.

12. The higher the frequency, the _____ (higher / lower) the energy. This is an _____ (inverse/direct) relationship.

13. The higher the wavelength, the _____ (higher / lower) the energy. This is an _____ (inverse/direct) relationship.

14. Which color has the most energy? _____

15. Which color has the least energy? _____

16. On the EM Spectrum, which type of wave has the most energy? _____

17. On the EM Spectrum, which type of wave has the least energy? _____

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