

ENERGY in EARTH PROCESSES

NAME _____

Partners _____

ELECTROMAGNETIC ENERGY

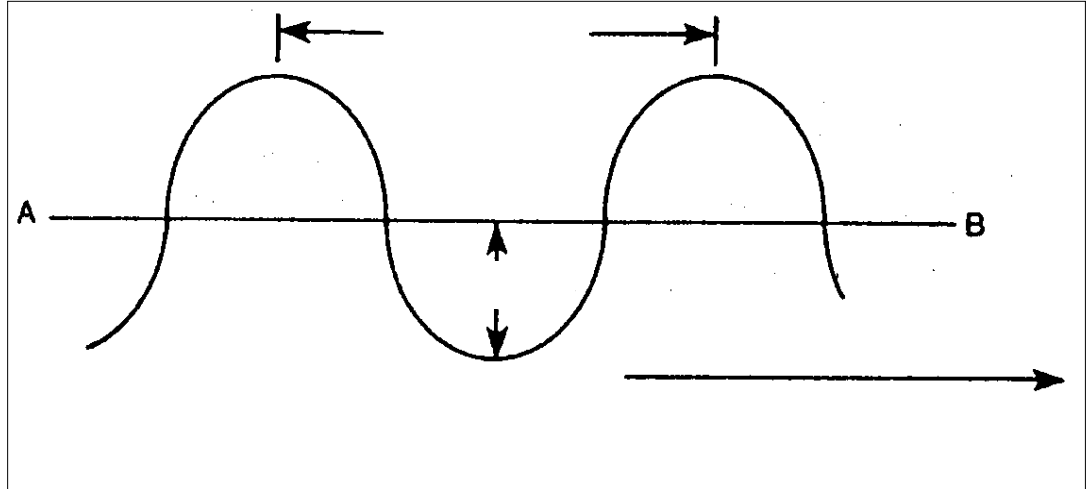
Define the following:

energy -	visible spectrum -
absolute zero -	energy transfer -
electromagnetic energy -	convection -
wavelength -	convection cell -
electromagnetic spectrum -	conduction
solar energy -	radiation -

DIRECTIONS: give the best answer to the following questions.

1. Everything, including you, radiates, or gives off, _____.
2. The lowest possible T^0 , where all molecular motion stops, is called _____.

3. The diagram at right shows a _____ wave.



Label the parts.

4. The different types of electromagnetic (EM) energy are identified based on their _____.

5. How fast does EM (electromagnetic) energy travel? _____

6. Take a look at the EM spectrum (ESRT p.14). According to this diagram,

- Long wavelengths have (high / low) energy, T^0 and frequency.
- Short wavelengths have (high / low) energy, T^0 and frequency.
- Hot objects emit (long / short) wavelengths.

7. Which are the most dangerous wavelengths, long or short? _____

8. Name 3 dangerous types of EM radiation: _____

9. Name five safe types of EM radiation: _____

10. The major source of Earth's energy is _____.

11. Besides visible light, what are the other two wavelengths that make up most of the Sun's radiation? _____

12. As energy moves away from or toward an observer, its frequency and wavelength change. This is called the _____ Effect.

13. As a light source (like a star) moves *away* from an observer, the wave frequency _____ and the wavelength _____. This creates a shift toward the _____ end of the visible spectrum. This is called the _____. The light reaching Earth from most stars shifts toward red, because the Universe is (expanding / contracting)!

14. As a light source moves *toward* an observer, the wave frequency _____ and the wavelength _____. This is called the _____.