

Waves

the ability to cause change or do work

1. WAVES: any disturbance that transmits energy through matter or space
 - a. Energy can be carried away from its source by a wave. However, the material through which the wave travels does not move with the energy
 - b. Waves carry Energy not matter
 - c. The Energy of a wave does work on anything in its path
 - i. Examples: Sound Waves "move" air
 - ii. Ocean Waves "move" boats

2. Medium: a substance through which a wave can travel
 - a. Waves often transmit their energy through a medium
 - b. A medium can be a Solid, Liquid, or a Gas
 - c. Sound waves require a Medium; if no medium is present there can be no Sound

3. Mechanical waves: waves that require a medium
 - a. Sound Waves
 - b. Ocean Waves

4. Electromagnetic waves: waves that do not require a medium
 - a. Radio
 - b. Microwaves
 - c. Infrared
 - d. Visible
 - e. Ultra-Violet
 - f. X-Ray
 - g. Gamma

Energy
Increases
↓

Red Monkeys In Vegas Use Xray Guns

5. transverse waves: waves in which the particles travel with an up and down motion

6. longitudinal waves: the particles of a medium vibrate back and forth like a slinky
 - a. The sections where the particles are compacted is called compression
 - b. The sections where the particles are spread out is called rarefaction

