

- What is a wave?
 - A disturbance that moves through space
 - Waves transfer energy NOT matter



• Wave Types By Movement

Transverse

 Particles travel perpendicular to motion of the wave, such as earthquake S waves

Amplitude

Normal

REST

Position

Wave Types By Movement

- Longitudinal (aka Compression)

QOOQQ





• Wave Types By Movement

- Surface
 - Particles travel in a circular pattern
 - Examples: Ocean waves, earthquake surface waves





- Wave Types By Transmission Method
 - Electromagnetic
 - Always transverse
 - Capable of transmitting energy through a vacuum
 - Produced by changing electric & magnetic fields
 - Example: Light waves



- The Electromagnetic Spectrum
 - Radio Waves
 - Longest wavelengths and lowest frequencies, capable of traveling long distances and used in communication, includes RADAR
 - Microwaves
 - Shorter than radio waves, found in microwave ovens
 - Infrared Rays
 - Infra = below/under, just slightly longer than the red waves of visible light, associated with heat



• The Electromagnetic Spectrum

- Visible Light
 - ROYGBV
 - Combine all colors = White light
- Ultraviolet Rays
 - Ultra = above/beyond, so these are just shorter than violet light
 - Limited exposure is healthy, but long exposure can be dangerous
 - Also important in medicine and agriculture



• The Electromagnetic Spectrum

- X-Rays
 - Limited exposure poses minor risk, but long exposure can cause severe damage
 - Used in medicine, industrial settings, and transportation
- Gamma Rays
 - Shortest wavelength & highest frequency
 - Even short term exposure is dangerous
 - Used in medicine and as an industrial inspection tool
 - Will not give you superpowers



- Waves Types By Transmission Method
 - Mechanical
 - Not capable of transmitting energy through a vacuum (requires matter to transfer energy)
 - Can be transverse, longitudinal, or surface
 - Example: Sound Waves

