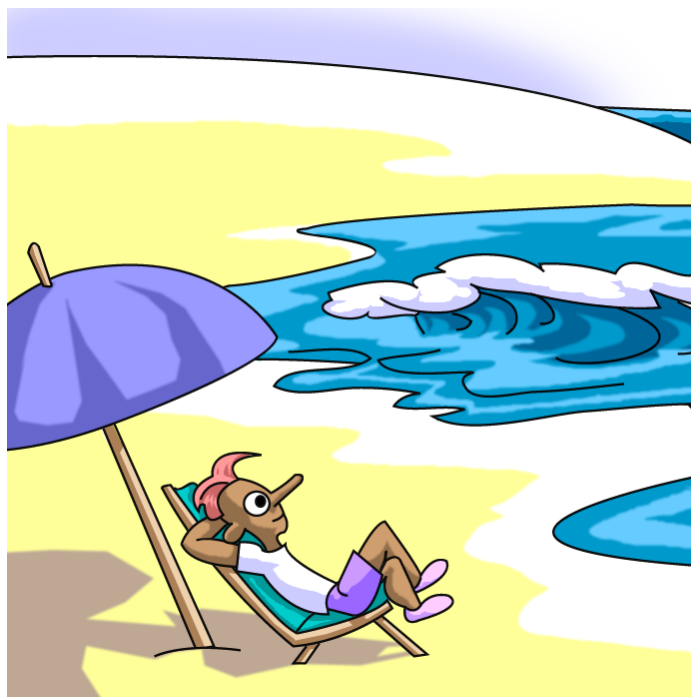


Waves!

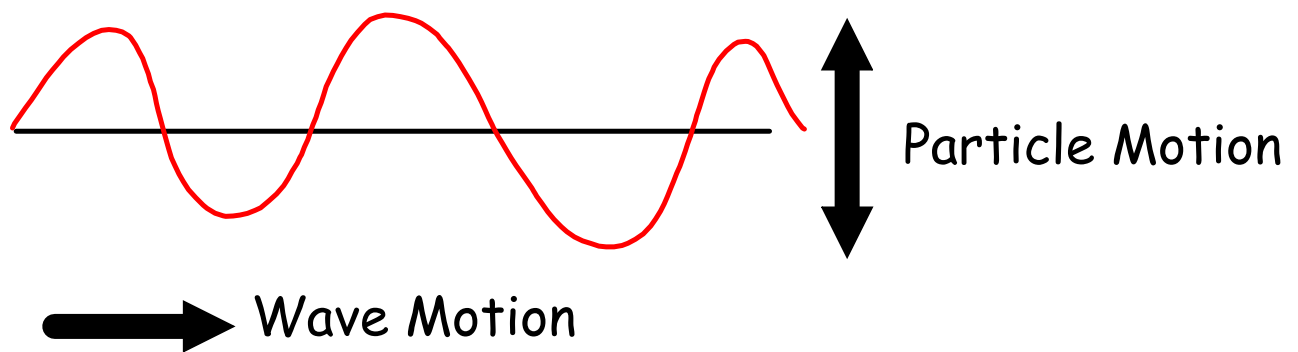


11.1: Types of Waves

- Wave - A disturbance that transmits energy through matter or space
- mass & volume*
 > **Mechanical Waves** - *can only travel through matter.*
 - Transverse
 - Longitudinal
- > **Electromagnetic Waves** - *can travel through matter or empty space.*

Mechanical Waves

- 1) **Transverse Waves** - Particles vibrate perpendicularly to the direction the wave travels



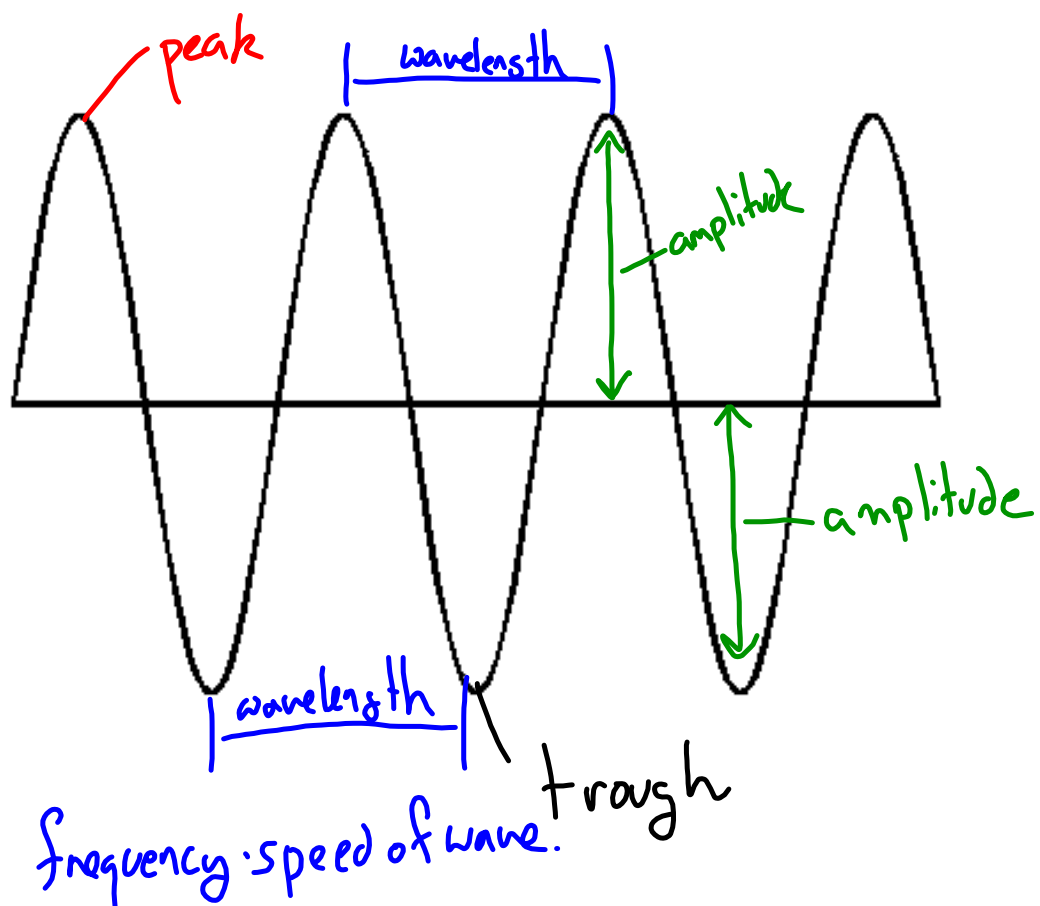
Medium: *solids & liquids*

Examples: *ocean wave*
seismic S-wave

S-Wave = Secondary waves

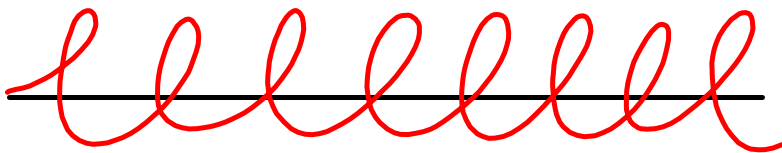
> Stronger, slower force

 http://www.geo.mtu.edu/UPSeis/images/S-wave_animation.gif



2) **Longitudinal Waves** - Particles vibrate parallel to the direction the wave travels

← Particle Motion →



Wave Motion →

Medium: solid, liquid, gas

Examples: sound wave
seismic p-wave

P-Wave = Primary wave

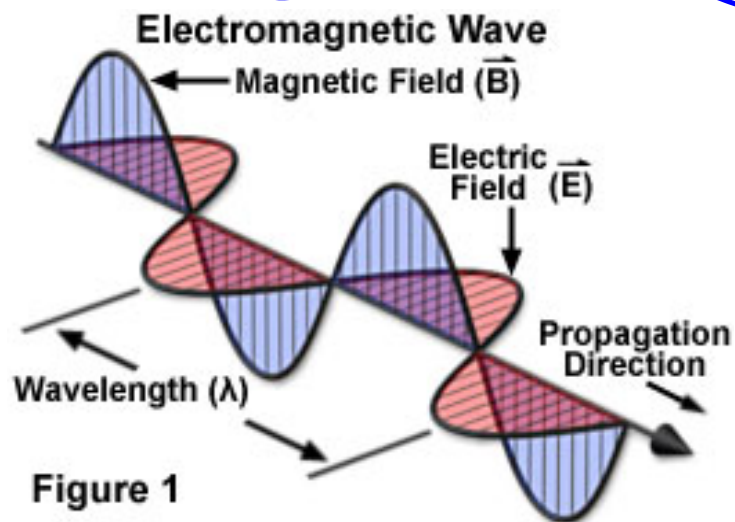
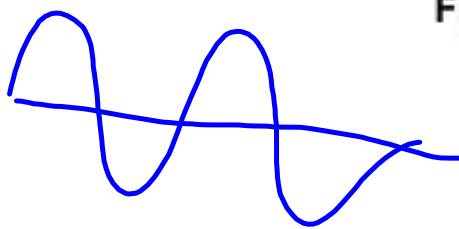
> Weaker, faster force

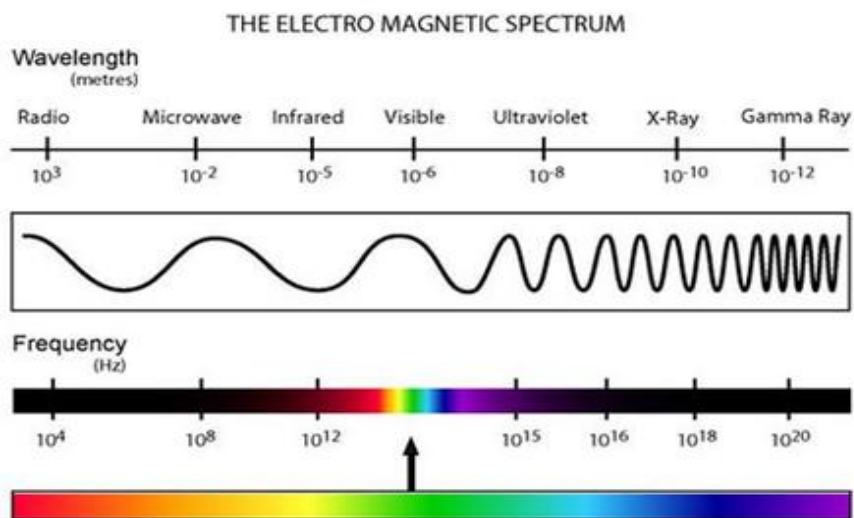
 http://www.geo.mtu.edu/UPSeis/images/P-wave_animation.gif

Electromagnetic Waves

A wave caused by a disturbance in electric and magnetic fields that does NOT require a medium.

model electro
magnetic waves
as transverse
waves





<http://ed.ted.com/lessons/how-do-we-see-color-colm-kelleher>