

**Vocabulary & Concepts**

- Wave
- Pulse
- Speed
- Amplitude
- Medium
- Wavelength
- Frequency
- Period
- Transverse wave
- Longitudinal wave
- Crest
- Trough
- Principle of superposition
- Constructive interference
- Destructive interference
- Node
- Antinode
- Reflection
- Refraction
- Diffraction
- Luminous
- Illuminated
- Electromagnetic Spectrum
- Visible light (ROYGBIV)
- Primary colors of light
- Secondary colors of light
- Pigment
- Primary pigments
- Secondary pigments
- Sound
- Pitch
- Doppler shift
- Resonance
- Compressions
- Rarefactions

**Equations**

$$s = \frac{d}{t}$$

$$s \text{ or } v = \lambda f$$

$$f = \frac{1}{T}$$

$$T = \frac{1}{f}$$

**Core Concepts***Students will understand...*

- the characteristics of transverse and longitudinal waves.
- what factors affect the speed of a wave.
- the mathematical relationship between the speed of a wave and its wavelength and frequency.
- how to solve problems using the equation speed = wavelength \* frequency.
- important wave behaviors – Identify and explain superposition, reflection, refraction, diffraction, interference, and resonance.
- the Doppler effect – Identify the change in frequency (higher or lower) that occurs when a source is in motion relative to an observer.
- the electromagnetic spectrum and identify the position of the major types of radiation.
- the characteristics of color and identify the results of mixing light & pigments.
- the law of reflection as it applies to plane mirrors.
- refraction of light as it applies to lenses and other mediums.