

Students should be able to:

- (a priori) Express numbers in scientific notation.
- (a priori) Solve math problems in exponential notation.
- (a priori) Know metric units (Mega through pico).
- Identify the three types of waves and give examples of each.
- Identify the two categories for waves and define each. Give an example of each.
- Identify the factors that affect wave speed.
 - Solve problems with this. (Honors)
- Define and relate the following terms: crest, trough, wavelength, node, antinode, and amplitude.
- Define and relate: pulse, vibration, cycle, and, oscillation, and periodic wave.
- Define and relate: frequency, period, and wave speed.
- State the principle of superposition.
- Describe the two types of interference covered by superposition.
 - Relate to mechanics (Honors).
- Describe what is meant by in phase. Explain why this is beneficial.
- State transverse waves as sine functions. Students should also be able to recognize main features of a wave in the sine function. (Honors)
- Define the following terms: angular wave number, angular frequency. (Honors)
- Solve interference problems with sine functions. (Honors)
- Define resonance and give examples.
 - Tacoma Narrows
 - Tuning a piano
- Define doppler effect.
- Solve doppler effect problems.
- Define and relate: angle of incidence, angle of reflection, angle of refraction, reflection, refraction.
- State Snell's Law.
- Describe what happens to a wave pulse as it approaches a boundary.
- State the laws of reflection and refraction.
- Qualitatively solve problems with reflection/refraction.
- Know the values of speed of waves.
 - speed of light
 - speed of sound at 0 degrees C
 - speed of sound at 20 degrees C
- Explain the effect of temperature on how sound waves travel. (Honors)