

INTRODUCTORY PHYSICS: STATE FRAMEWORKS

4. Waves

Central Concept: Waves carry energy from place to place without the transfer of matter.

- 4.1 Describe the measurable properties of waves (velocity, frequency, wavelength, amplitude, period) and explain the relationships among them. Recognize examples of simple harmonic motion.
- 4.2 Distinguish between mechanical and electromagnetic waves.
- 4.3 Distinguish between the two types of mechanical waves, transverse and longitudinal.
- 4.4 Describe qualitatively the basic principles of reflection and refraction of waves.
- 4.5 Recognize that mechanical waves generally move faster through a solid than through a liquid and faster through a liquid than through a gas.
- 4.6 Describe the apparent change in frequency of waves due to the motion of a source or a receiver (the Doppler effect).