Introduction: Mechanical Waves

Unit: Mechanical Waves

Topics covered in this chapter:

This chapter discusses properties of waves that travel through a medium (mechanical waves).

- *Waves* gives general information about waves, including vocabulary and equations. *Reflection and Superposition* describes what happens when two waves share space within a medium.
- *Sound & Music* describes the properties and equations of waves that relate to music and musical instruments.
- *Sound Level* describes the decibel scale and how loudness is measured.
- *The Doppler Effect* describes the change in pitch due to motion of the source or receiver (listener).
- *Exceeding the Speed of Sound* describes the Mach scale and sonic booms.

Standards addressed in this chapter:

MA Curriculum Frameworks (2016):

HS-PS4-1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling within various media. Recognize that electromagnetic waves can travel through empty space (without a medium) as compared to mechanical waves that require a medium.

AP® Physics 2 Learning Objectives:

This unit was removed from AP® Physics 1 starting with the 2021–22 school year. It is not part of the AP® Physics 2 curriculum as of 2021–22.

Use this space for summary and/or additional notes:

Topics from this chapter assessed on the SAT Physics Subject Test:

- **General Wave Properties**, such as wave speed, frequency, wavelength, superposition, standing wave diffraction, and the Doppler effect.

1. Wave Motion
2. Transverse Waves and Longitudinal Waves
3. Superposition
4. Standing Waves and Resonance
5. The Doppler Effect

Skills learned & applied in this chapter:

- Visualizing wave motion.

Use this space for summary and/or additional notes: