

CHAPTER OVERVIEW

3.6: Wave Behavior

In this chapter (the longest in the book!) we investigate the behavior of waves in various circumstances. Some of our examples will be for light but remember that all waves have similar behavior; sound waves will also obey the laws of reflection and refraction, scattering, diffraction, interference, etc.

Key Terms:

Reflection, specular and diffuse reflection, refraction, constructive and destructive interference, path difference, diffraction, dispersion, Doppler shift, standing waves, scattering, beats, ultrasound.

3.6.1: Doppler Shift

3.6.1.1: Doppler Shift

3.6.1.2: The Doppler Effect Simulation

3.6.2: Mirrors and Reflection

3.6.2.1: Reflection

3.6.2.2: Reflection Simulation

3.6.3: Refraction

3.6.3.1: Refraction

3.6.3.2: Refraction Simulation

3.6.4: Lenses

3.6.4.1: Lens Simulation

3.6.5: Dispersion

3.6.5.1: Dispersion Simulation

3.6.6: Adding Wave Pulses

3.6.6.1: Adding Waves

3.6.6.2: Adding Two Wave Pulses (Superposition)

3.6.7: Adding Sinusoidal Waves

3.6.7.1: Adding Two Linear Waves Simulation

3.6.8: Path Difference

3.6.8.1: Interference

3.6.8.2: Interference Due to Path Difference Simulation

3.6.9: Interference

3.6.9.1: Interference- Ripple Tank Simulation

3.6.10: Diffraction

3.6.10.1: Diffraction

3.6.10.2: Diffraction Simulation

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