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Chapter 17 Mechanical Waves and Sound

Section 17.3 Behavior of Waves

(pages 508-512)

This section describes different interactions that can occur when a mechanical wave encounters an obstacle, a change in medium, or another wave. These interactions include reflection, refraction, diffraction, and interference.

Reading Strategy (page 508)

Identifying Main Ideas Complete the table below. As you read, write the main idea of each topic. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Wave Interactions				
Topic	Main Idea			
Reflection				
Refraction				
Diffraction				
Interference				
Standing waves				

Reflection (page 508)

- **1.** Is the following sentence true or false? Reflection occurs when a wave bounces off a surface that it cannot pass through.
- **2.** Circle the letter of the results that occur when a wave reflects off a fixed boundary.
 - a. The reflected wave will be turned upside down.
 - b. The amplitude will double as it strikes the surface.
 - c. The speed of the wave will decrease.
 - d. The frequency of the wave will decrease.

Refraction (page 509)

- 3. Why does refraction occur when a wave enters a new medium at an angle? _____
- **4.** Is the following sentence true or false? Refraction always involves a change in the speed and direction of a wave. _____

Chapter 17 Mechanical Waves and Sound Diffraction (page 510) 5. What is required in order for diffraction to occur? 6. Is the following sentence true or false? A wave diffracts more if its wavelength is small compared to the size of an opening or obstacle. Interference (pages 510-511) 7. What causes wave interference? Interference Interference Interference	Name		Class Dat	te			
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