

**SECTION**  
**4****Reinforcement****Using Sound****CHAPTER 10.4 REVIEW**

**Directions:** Answer the following questions on the lines provided.

1. What is acoustics?

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2. Why would reverberation be a problem when using a gym for a concert?

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3. What would an acoustical engineer consider when designing a concert hall? How could reverberation be reduced?

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4. Describe echolocation and tell how bats use it to locate food.

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5. What is sonar?

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6. Explain how ultrasound is used to produce images of internal structures in the body.

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7. When is it better to use ultrasound and when is it better to use X rays for detecting medical problems?

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8. Why might ultrasound be a treatment of choice over surgery for kidney stones?

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## Sound

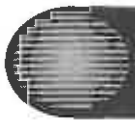
### I. Testing Concepts

**Directions:** Determine whether the statements below are **true** or **false**. If a statement is false, change the underlined term to make it true.

- \_\_\_\_\_ 1. The speed of sound depends on the loudness of sound.  
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- \_\_\_\_\_ 2. As the frequency of a sound increases, the pitch becomes higher.  
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- \_\_\_\_\_ 3. Tiny hairs in the eardrum vibrate, sending nerve impulses through the auditory nerve.  
\_\_\_\_\_
- \_\_\_\_\_ 4. The amplitude of a sound wave depends on how tightly packed the sound molecules are.  
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- \_\_\_\_\_ 5. Pitch is the human perception of sound intensity.  
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**Directions:** Circle the term in parentheses that makes each statement correct.

6. (Intensity, Pitch) influences how far away a sound can be heard.
7. Sound intensity is measured using the (hertz, decibel) scale.
8. The (acoustic effect, Doppler effect) occurs when the source of a sound wave is moving relative to the listener.
9. (Noise, Music) is made of sounds that are deliberately used in regular pattern.
10. (Beats, Pitch) can occur when sound waves of different frequencies combine.



Directed Reading for  
Content Mastery

## Key Terms Sounds

**Directions:** *Unscramble the words in italics to complete the sentences below. Write the terms on the lines provided.*

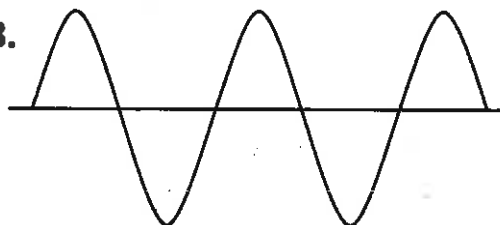
- \_\_\_\_\_ 1. The study of sound is known as *stauocsic*.
- \_\_\_\_\_ 2. Tiny hairs located in the *hcleaco* conduct sound to the brain.
- \_\_\_\_\_ 3. The *dmeraur* passes sound vibrations to the hammer, anvil, and stirrup.
- \_\_\_\_\_ 4. People's perception of sound intensity is known as *slunesdo*.
- \_\_\_\_\_ 5. When you hear a change in *cptih*, you are registering how high or low the sounds are.
- \_\_\_\_\_ 6. The *poDprel cetfeflets* you know that the source of a sound is moving toward or away from you.
- \_\_\_\_\_ 7. When sounds and their reflections reach your ears at different times, you might hear an echoing effect called *rberatveniroe*.
- \_\_\_\_\_ 8. A *noserrato* is a hollow chamber filled with air that amplifies sound when its air vibrates.
- \_\_\_\_\_ 9. The use of underwater sound waves to detect objects is called *rosan*.
- \_\_\_\_\_ 10. When sounds are deliberately used in a set pattern, *simuc* is created.
- \_\_\_\_\_ 11. A vibration whose frequency is a multiple of the fundamental frequency is an *onevoter*.
- \_\_\_\_\_ 12. A drum is an example of a *resusponic* instrument.
- \_\_\_\_\_ 13. Sound intensity is measured in *sceibled*.
- \_\_\_\_\_ 14. Every material has a natural *queencyfr*.

**Chapter Review** (continued)

**Directions:** Identify each statement as **true** or **false**. If false, change the term in *italics* to make the statement true.

- \_\_\_\_\_ 3. Sound is caused by *an echo*.  
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- \_\_\_\_\_ 4. *Ultrasound* is used to break up kidney stones.  
\_\_\_\_\_
- \_\_\_\_\_ 5. The bowl of a kettledrum that amplifies sound is called *an echochamber*.  
\_\_\_\_\_
- \_\_\_\_\_ 6. Loudness is determined by the *pitch* of a sound.  
\_\_\_\_\_
- \_\_\_\_\_ 7. As you move away from a warning siren, the pitch *decreases*.  
\_\_\_\_\_
- \_\_\_\_\_ 8. Multiples of the fundamental frequency are called *beats*.  
\_\_\_\_\_
- \_\_\_\_\_ 9. *Music* is sound without a set pattern.  
\_\_\_\_\_
- \_\_\_\_\_ 10. *Ultrasound* is used to study body organs.  
\_\_\_\_\_

**Directions:** Use the diagrams to answer questions 11 and 12.

**A.****B.**

11. Which diagram shows the lowest pitch?  
\_\_\_\_\_
12. Which diagram shows the loudest sound?  
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