

Sound

Fill in the blanks.

bones

directions

particles

vibrations

brain

echo

speeds

waves

Have you ever wondered how you hear sound?

Sound waves travel through your outer ear, where

_____ send the vibrations to the inner

ear. Nerves carry sound messages to the _____.

All sounds are produced by _____

and travel in _____ through the air.

Sound waves are made as _____ of air

bump into one another. The waves move away from a

vibrating object in all _____. Then

they bounce off nearby surfaces as a reflected sound,

or _____.

Sound waves travel through various materials at

different _____. Sound travels slowest

through a gas and fastest through a solid.

Sound

What am I?

Choose a word from the word box below that answers each question.

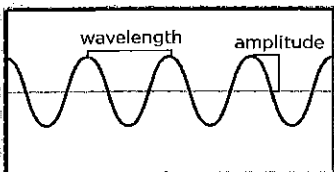
- | | | |
|--------------|---------------|---------------|
| a. amplitude | d. pitch | g. volume |
| b. echo | e. sound wave | h. wavelength |
| c. frequency | f. vibration | |

- _____ I am the back-and-forth motion of an object.
What am I?
- _____ I am an area of crowded particles followed by
an area of widely spaced particles.
What am I?
- _____ I am a sound that has been reflected off a
surface. What am I?
- _____ I am the distance from the top of one sound
wave to the top of the next sound wave.
What am I?
- _____ I am the number of wavelengths that pass a
point in one second. What am I?
- _____ I am the highness or lowness of a sound.
What am I?
- _____ I am the amount of energy in a sound wave.
What am I?
- _____ I am the loudness or softness of a sound.
What am I?

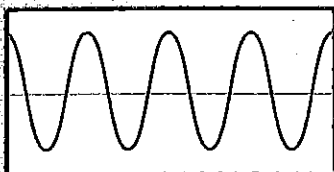
How do sounds differ?

To understand the differences in sounds, look at the wavelength, frequency, and volume of sound waves.

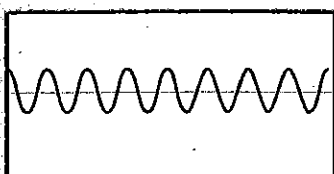
Comparing Sound Waves



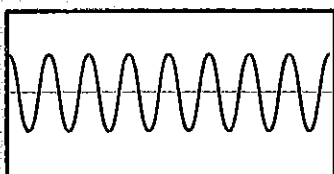
long wavelength
medium amplitude



medium wavelength
high amplitude



short wavelength
low amplitude



short wavelength
medium amplitude

Answer these questions about the diagram.

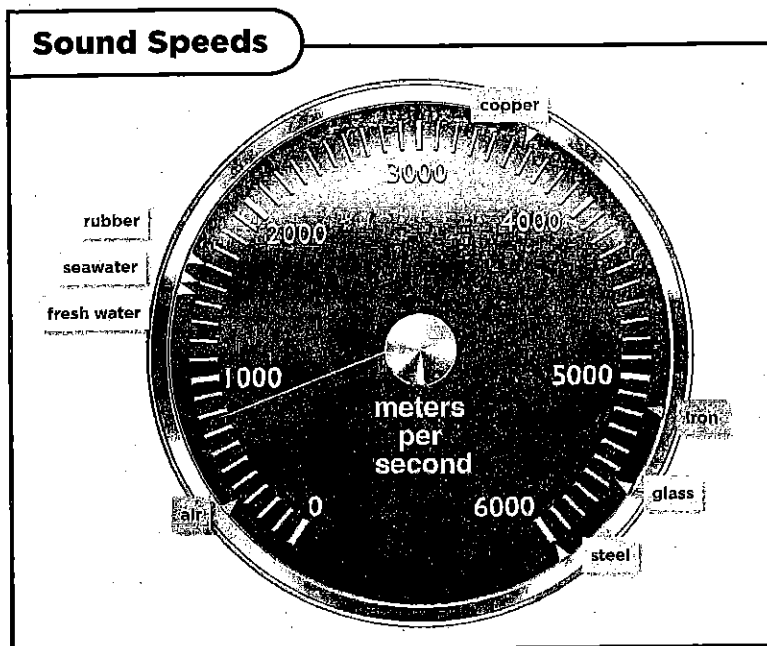
1. Which sound wave has the highest pitch?

2. Which sound wave would produce the quietest sound?

3. Which sound wave would produce the loudest sound?

How does sound travel?

The speedometer in the diagram below is used to show how fast sound travels through different substances.



Answer these questions about the diagram.

1. Does sound travel faster through glass or steel? How much faster?

2. Through which of the following does sound travel fastest: solids, liquids, or gases? Why?

Circle the letter of the best answer for each question.

1. Humans produce sound when their vocal chords

A echo.
B conduct heat.
C vibrate.
D expand.

2. The distance from the top of one sound wave to the top of the next sound wave is called a(n)


A pitch.
B frequency.
C wavelength.
D amplitude.

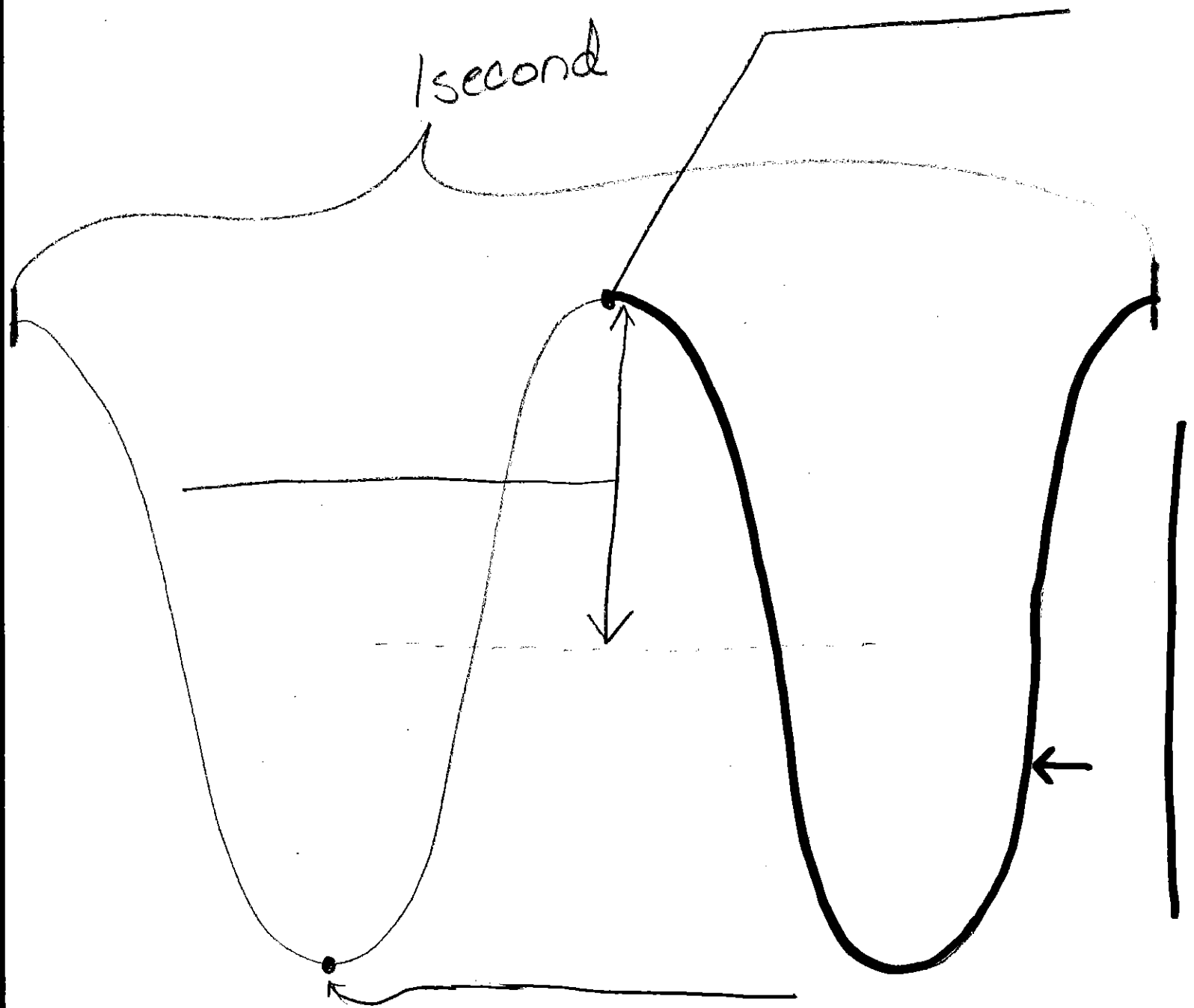
3. The loudness or softness of sound is called

A amplitude.
B volume.
C pitch.
D sonar.

4. Sonar measures underwater distances by using

A light.
B echoes.
C pictures.
D heat waves.

 **Critical Thinking** Do you think that sound would travel faster through wood or water? Explain your answer.



_____ = _____ waves per second