

Sound's Travel Path

Read how air, water, and solids carry vibrations.

5.5.c "different media transmit sound differently; and"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle each medium named in the passage. Underline the words or sentences that explain how that medium transmits sound differently.

A Drumbeat in Three Media

- ① During a school concert, Maya noticed that the same drumbeat seemed different in different places. Sound begins when an object vibrates. Those vibrations need a medium, or material, to travel through. Air is a gas, water is a liquid, and a wooden stage is a solid. Each medium passes vibrations along in its own way. This changes what a listener notices.
- ② In the solid stage floor, particles are packed closely together. A drumbeat can make the floor vibrate, and the vibrations move quickly from particle to particle. If Maya presses her ear near the stage, she may hear the beat clearly. In air, particles are farther apart, so the same sound usually travels more slowly than it does in the wood.
- ③ Water also carries sound, but it transmits vibrations differently from air and wood. Underwater, a swimmer may hear a pool whistle, yet it can be hard to tell where the sound started because sound reaches the ears in a different way. Sound can travel through all three media, but the medium affects its speed and how clearly or where a listener hears it.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Which medium has particles packed closely together? What does this help sound do?

2 How does sound travel through air compared with wood?

3 Why might a swimmer have trouble telling where a pool whistle started?

4 What can sound travel through, and what can the medium change for a listener?

3 YOUR TURN _____ Your own words

Choose a sound source and two media, such as air and a wooden desk. Write a simple test plan and a prediction that explains how the two media may transmit the sound differently.

PART 1 • READ AND MARK

Circle each medium named in the passage. Underline the words or sentences that explain how that medium transmits sound differently. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which medium has particles packed closely together? What does this help sound do?	The wooden stage floor, a solid, has closely packed particles. This helps vibrations move quickly from particle to particle.
2	How does sound travel through air compared with wood?	Sound usually travels more slowly through air than through wood.
3	Why might a swimmer have trouble telling where a pool whistle started?	In water, sound reaches the swimmer's ears in a different way, making it hard to tell where the sound started.
4	What can sound travel through, and what can the medium change for a listener?	Sound can travel through air, water, and wood. The medium can affect sound's speed and how clearly or where a listener hears it.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I will tap a metal spoon against a wooden desk and compare the sound through the desk with the sound through air. I will use the same tap each time and ask a partner which sound seems clearer. I predict vibrations will travel faster through the wood because its particles are close together.

Accept any reasonable sound source, two media, and a test that compares them. The prediction should explain that different media transmit sound differently, such as by affecting speed, clarity, or where the sound seems to come from.