

Sound Traveling Through Different Mediums (String Telephone)

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will build a string telephone and test how sound travels through a solid medium compared to air.

MATERIALS NEEDED

- 2 paper or plastic cups
- a long piece of string (10-15 feet)
- a sharp pencil or scissors (to poke a hole, adult help if needed)
- paper clip or 2 small buttons
- a partner (family member or friend)

HANDS-ON ACTIVITY

1. Carefully poke a small hole in the bottom of each cup. Thread one end of the string through each hole and tie it to a paper clip or button inside each cup so the string can't slip out.
2. With a partner, walk apart until the string between the two cups is pulled tight (not sagging), and each of you hold a cup up to your ear.
3. Take turns speaking quietly into one cup while the other person listens through the other cup, keeping the string taut, and record what you could hear.
4. Repeat the test, but this time let the string go slack (loose) between you, and record whether the sound is clearer or harder to hear.
5. As a comparison, stand the same distance apart without the string phone and speak at the same quiet volume directly through the air, noting the difference.

QUESTIONS

1. Was the sound clearer through the taut string phone or through the air at the same quiet volume?

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2. What happened to the sound quality when the string was slack instead of taut?
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3. Explain, using the idea of vibration, how sound travels from your voice through the string to your partner's ear.

4. Based on this experiment, does sound generally travel better through a solid (like the string) or through air? Why?
