

SOUND EXPERIMENTATION

Sound comes from vibrations. Vibrations create sound waves, which move through mediums such as air and water before reaching our ears. When sound waves reach our ears, they transfer the initial vibration to the eardrums, which our brains translate into sound.

Try these simple sound experiments—do you hear what I hear?

TELEPHONE

YOU WILL NEED:

Pen • Two plastic containers or cups • String (10-12 feet) • Adult helper

INSTRUCTIONS:

1 Have an adult use a pen to punch a small hole in the middle of the bottom of two containers. Thread one end of the string through the hole in each container so the end is inside the container. Tie knots in each end so the string will not pull out through the hole.



2 Hold one cup and give the other to a friend. Walk far enough apart so the string between the cups is pulled tight. The string should not be touching anything except the plastic containers.



3 Ask your friend to hold the cup over one ear while you whisper into the other cup.

Results:
Your voice should make the string vibrate. The vibration will travel along the string to the other cup, and your friend will clearly hear what you whispered. Now listen while your friend whispers.

Build other phones that use different lengths of string and different kinds of containers, and then compare how well they work.

MODEL EAR DRUM

YOU WILL NEED:

Plastic wrap • Wide-mouthed container (bowl or pot) • Metal cookie sheet • Rice (uncooked)

1 Stretch plastic wrap tightly over the wide-mouthed container.



2 Place 20 to 30 grains of rice on top of the plastic.



3 Bang a metal cookie sheet or something equally as loud to make noise close to the plastic wrap. Watch as the grains of rice move.

Results:
The plastic wrap should react to sound waves in a way similar to the human eardrum. Make other loud noises close to the plastic wrap to see if you can make the rice bounce.

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