

Sounding Board

National Capital

Radio &
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SUMMARY

Project Objective	Make your own sound board to showcase how vibrations can produce sound waves if they have an amplifier.
Project Supplies	• Plastic Cup • String or twine, cut about 10 in long • Pitcher / bowl of water • Paper Towels • Paper Clips

Introduction:

A sounding board makes sounds louder. Sound waves need something to travel through; examples include the air, water, and in this case, string. Sound waves cannot travel through a vacuum. The qualities of the objects may change the wave's properties. A good sounding board increases the level of sound because a larger surface vibrates when you

Instructions:

1. Prepare the cup and string:
 - a. Poke a small hole in the bottom of your cup.
 - b. Tie the string to the paper clip.
 - c. Thread the string through the hole in the bottom of the cup, so the clip ends up inside the cup.
2. Get the paper towel ready:
 - a. Dip a paper towel into the water.
 - b. Squeeze out as much water as possible so it's damp, not dripping.
3. Make the sound:
 - a. Wrap the damp paper towel tightly around the string dangling out of the bottom of the cup.
 - b. Grip the towel firmly and pull down the string slowly with one hand. Be sure to hold the cup tightly in the other hand.
 - c. You'll hear a screaming or squeaking sound! The cup acts like a diaphragm-a thin, flexible membrane-that vibrates and makes a loud sound as the string vibrates the bottom of the cup!

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More:

Try the same activity using different objects instead of the cup, such as a large plastic bowl, a cardboard shoe box, or a metal can! Or the same cup with different strings! Different materials vibrate in different ways, so when you try something new, the sound will change. You're exploring how sound waves travel and how different objects can make sounds louder or softer!

What's Happening?

When you pull on the damp string, it rubs against the paper towel and makes the string vibrate. Those vibrations travel up the string and into the cup. The cup begins to vibrate too—kind of like a tiny drum! Because the cup is bigger than the string, it pushes more air and makes the sound much louder. That's why you hear a funny squeaking or roaring noise.