

DIY SPEAKER

This DIY phone speaker amplifies the sound waves produced by your smartphone using just a few simple supplies!

INSTRUCTIONS:

STEP 1: In the center of your tube use scissors to cut a rectangular slit just big enough for your phone to sit inside.

STEP 2: Take your two cups and cut small circular holes in the sides of each one. The holes should be large enough to fit the ends of the tube inside. These cups will act as amplifiers to increase the sound.

STEP 3: Insert one end of the tube into the hole of the first cup and the other end into the second cup. Make sure the cups fit snugly around the ends of the tube. If needed, use tape to secure the connections.

STEP 4: Place your phone into the slot you cut in the middle of the tube, play some music, and see what happens! You should notice the sound is louder and more focused.

Materials

Paper towel tube
Scissors
2 paper cups
Smartphone

THE SCIENCE

When sound waves leave your phone's small speaker, they dissipate quickly in all directions. But when you use materials like the cups and the roll to contain and focus the sound waves, they travel more efficiently and seem louder to your ears. This simple speaker helps channel the sound waves into a focused direction, while the cups act as amplifiers, boosting the sound by creating an echo effect. The cups' shape helps funnel the sound, causing the sound waves to bounce around inside before coming out more intensely. The result? Louder music!



