

SENSATIONAL SPEAKERS

Do you love listening to music on a phone but find it doesn't sound as good as you'd like it to? Maybe your family grumbles every time you play your favorite songs really loud? These terrific smartphone speakers could be the answer to both problems. They not only help to get rid of that "tinny" effect, but also direct most of the sound straight to your ears. So your music sounds bigger and better without annoying everyone else in the room.



You can change the colors of your speakers as often as you like.

These brilliant speakers are made from everyday household items.

LOOKS GOOD, SOUNDS EVEN BETTER

Portable mobile phone speakers painted in funky colors look great sitting on your desk or bedside table. They don't even need batteries or recharging. So what are you waiting for? Make some speakers and get a playlist going! But remember, never put the speakers right next to your ears with music at full blast. This could damage your hearing.



Built-in mini loudspeakers, are usually located at the bottom of a phone.



HOW TO MAKE SENSATIONAL SPEAKERS

It's really easy to make these impressive speakers. Just find a cardboard tube and some paper cups, and you're almost there. You will also need scissors to cut some materials, so ask an adult if you need a hand with this part. When you're done, your new speakers will make your music louder and clearer—and, best of all, they won't cost you any of your allowance!



WHAT YOU NEED



Two paper cups



Mobile phone



Paint



Cardboard tube



Paper towels



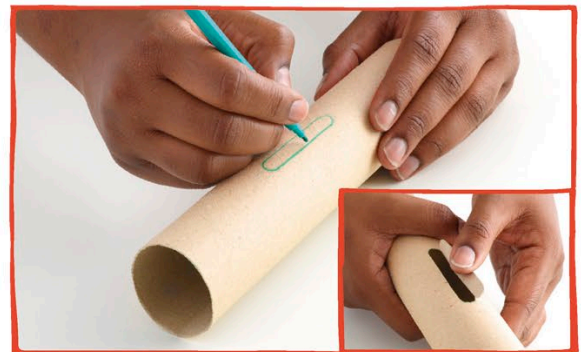
Felt-tipped pen



Scissors



Paintbrush



1 With the felt-tipped pen, trace around the end of your phone, halfway along the cardboard tube. Cut along one long side and the two short sides of the rectangle to make a flap. Open up the flap to make a slot.



2 Place the end of the tube against the side of one of the paper cups, close to the lip. Hold the tube steady and draw around it with your pen. Cut out the circle you have drawn. Repeat with the other cup.





3 Now, tear off two sheets of the paper towel and loosely scrunch them up. Push one crumpled paper towel into each end of the tube. The paper absorbs some of the high-pitched sounds coming from the tube, so music sounds less tinny.



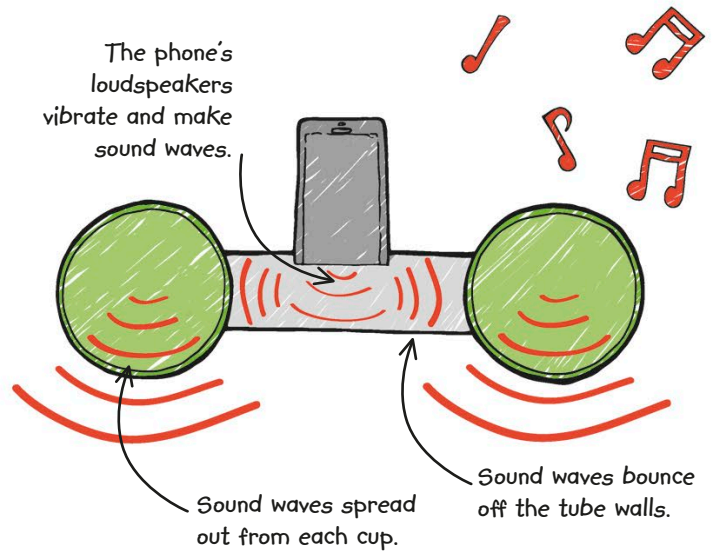
4 Push one end of the tube a little way into the hole you cut in one of the cups. You may need to use a small amount of force to secure it on. Then fit the other end of the tube into the second cup. You've nearly finished your speakers!

5 The only thing left to do is to paint your speakers in any colors you like. When the paint is dry, pop a phone into the slot, with its loudspeakers inside the tube. Then, sit back and enjoy the music!



HOW IT WORKS

Sounds from the mobile phone come out of tiny loudspeakers that vibrate and disturb the air, sending sound waves spreading in all directions. When you put your phone inside your speakers, the sound waves bounce off the insides of the tube and the cups. So nearly all the sound is sent forward, toward your ears. The crumpled paper stops some of the higher-pitched sounds from getting through, but not the lower-pitched ones. This creates a clearer and warmer sound.



REAL WORLD SCIENCE CONCERT LOUDSPEAKERS



At a concert, powerful speakers sit on either side of the stage. Inside each speaker is a cone of paper that vibrates, driven by electrical signals from the equipment—such as an electric guitar—on stage. This produces sound waves that spread out in all directions. Some waves bounce off the back of the speakers and then forward to the audience.