



Remember landline phones? Yes, you can tell your kids all about “Back in the day...” and have them build a string telephone. This engineering project is easy to assemble and fun to use, plus you can add some science to the activity by chatting about sound waves.

STRING TELEPHONE

What you need:

Two paper cups, string (thread or fishing line), pencil for poking holes, two paper clips (Image 1)

What to do:



1. Poke a hole in the bottom of each cup using the pencil. (Adult supervision is recommended for this step.)
2. Thread each end of the string through the hole.
3. Tie each end of the string to a paper clip to ensure the string stays in place. (Image 2)
4. Pull the string taut! This is a very important step.
5. One person is the listener, they will have to hold the cup up to their ear. The second person is the talker, they will have to place the cup to their mouths and speak in to the cup. (Image 3)



Extensions:

Determine the distance that you can communicate with a string telephone? 10 m? 20 m or perhaps more? Try different lengths of string to determine the answer. Does the size of the cup matter? Does the size of the hole in the paper cup matter? How about the thickness of the string? Kids can try twine, fishing line, kite string, wool and cotton yarn. Lots of variables to work with and determine the best combination for the most efficient telephone.

How does this work:

When we talk, our vocal cords make molecules in the air vibrate. Vibrations create sound waves. When you speak into the cup, your voice vibrates the air inside the cup. These vibrations travel along the string and then vibrate the cup at the other end. The vibrations are converted to sound waves.



Keeping the string taut is key to making this work. When the string is loose, the vibrations get lost along the way and never reach the cup with listener's ear attached to it.

The string should not touch anything else. You do not want the sound waves to interfere with anything else along the way.