

CUP AND STRING TELEPHONE

Let's experiment with sound by making a homemade phone using only paper cups and string!

INSTRUCTIONS

STEP 1: Poke a hole in the bottom of each cup using the nail.

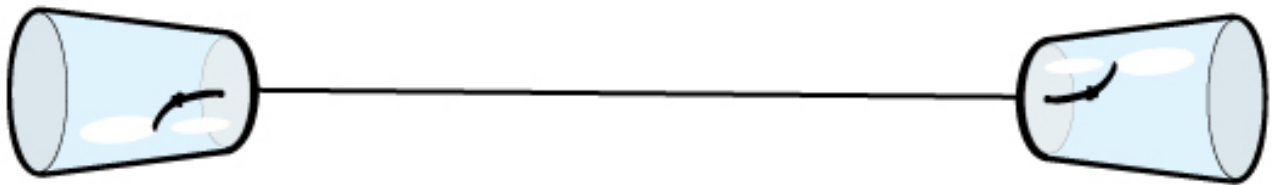
STEP 2: Cut 10 feet of string and push the ends through the holes in the cups.

STEP 3: Tie a large knot in the string once you pushed them through the cups.

STEP 4: Now have a friend hold one cup while you hold the other. Walk away from each other so that the string gets tight. Talk quietly into your cup and have your friend put their cup to their ear to listen. Now switch! See how low you can whisper and still be heard.

SUPPLIES

2 Paper or plastic
cups
String
Nail



THE SCIENCE

When you speak into the cup, it creates sound waves which vibrate the bottom of the cup. The vibrations move along the tight string into the bottom of your friend's cup. When they reach the 2nd cup the vibrations are turned back into sound waves. This is how your friend is able to hear what you are saying.

String and Cup Phone Observations

Use this worksheet to process and evaluate your observations.

What happened when the string was tight and you talked into the cup?

Could your friend hear you clearly when the string was loose?

How did the sound change when you pulled the string tighter?

What happened when you touched or blocked the string while talking?

How far apart could you stand and still hear each other?

What materials do you think would make the sound travel even better (e.g., thicker string, fishing line, wire)?

What surprised you most about how the sound moved between the cups?
