



High Touch High Tech®

Science Experiences That Come To You

Paper Cup and String Phone

Supplies:

- 2 paper cups
- Assorted string 30-50 feet in length
 - Cotton string, yarn, fishing line, twine, etc.
- A sharp pencil or needle to poke holes in the cups
- Scissors
- Paper clip
- Washer - optional
- *Ask an adult to help*

Instructions:

1. Start by cutting a long piece of string of at least 30 feet.
2. Poke a small hole at the bottom of each cup. (Ask for an adult to help.)
3. Using each end of the string, thread it through the bottoms of the cups, tying a large knot so that the string does not fall out of the cup.
 - a. If you make the holes too large, use a washer or paper clip to hold the string in place so that it does not pull out of the cup.
4. Move into position and encourage your child to move away from you so that the string is far enough to make it tight.
 - a. Be sure that the string does not touch any other object and that it remains suspended in air as you complete the experiment.
5. Taking turns, talk into the cup, while the other person listens by putting the cup to their ear.
6. Try repeating the same words back and forth. How does it sound? Can you understand the words you hear through the phone?
7. You can also compare & contrast assorted types of string to see which work best.
 - a. Does fishing line work better than cotton string? Yarn? Shoestring? Twine?



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The Science Behind It:

The paper cup phone is much more than a fun and old-fashioned way for you to communicate with friends and siblings throughout the house. This sound science project demonstrates how sound waves can travel through a string and be converted back to audible sound at the opposite end.

Sound waves make vibrations through the air! When you talk, your vocal cords create vibrations. This movement actually causes air molecules to vibrate. These molecules cause other surrounding molecules to vibrate. This is how the sound moves across the room.

By using the string, the vibrations last longer and can travel further!

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