

PAPER CUP TELEPHONE CHALLENGE

THE PROBLEM:

Using only two paper cups and a piece of string, your team will build a telephone that will carry sound from one end of the string to the other side.

THE TEST:

How do you think the paper cup telephone works? How can you change your design to make it better?

YOU NEED:

- two paper cups
- scissors
- 6 ft piece of string (measure and cut)
- a yardstick or ruler
- paper clip (the coated, colorful ones work better)
- paper cup telephone diagram sheet
- India Travel Guide handouts

TEAM DISCUSSION - HAVE EACH TEAM MEMBER SHARE THEIR EXPERIENCES OR SOMETHING THEY KNOW

1. **Have you ever played with echos before? What do you notice?**

2. **Is sound a thing? How do you know?**

3. **Try this: Put your hand over your throat and say the letter m sound "mmmmm." What do you notice?**

4. **What is sound? What are you creating and sending out?**

DID YOU KNOW?

The word telephone comes from two ancient Greek words. *Tele* means distance and *phonos* means sounds. Telephone is sound traveling over a distance.

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HERE'S WHAT YOU DO:

- 1** Gather your supplies. Each team will need one set of items.
- 2** Use your ruler or yardstick to measure exactly 6 ft of string.
Tip: Measure twice. Cut once.

3 EXPERIMENT!

Your team can follow the picture guide if you need extra assistance on constructing the paper cup telephone.

- Tie a knot on one end of the string.
- Hold the paper clip and push down the back.
- Slide in the loop of string.
- Take the two ends of the paperclip and twist them apart.
- Use the pencil to poke a hole in the center of the cup (bottom of cup).
- Push the paper clip through the cup (starting at the bottom of the cup and going inside). This will stop the string from falling out.
- Do the same thing on the opposite end of the string, creating an image similar to this one:



- Try it out! Decide who on your team will be “Voice” and who will be “Ear.”
 - “Voice”: Say a number 1 through 5 very softly into the cup.
 - “Ear”: Use your fingers to indicate the number you heard.
 - Now switch roles and give it another try.
 - For the next part (step 4), decided who will be “Voice” and who will be “Ear.”

4 LET'S TRAVEL!

- “Voice” will need the **Hearts of India Booklet** (from Lesson One)
- “Voice” will need to share **ONLY FIVE FACTS** about India. If time permits, then more can be shared.
- A team member will hold up their hand to indicate that they need information to be repeated. “Ear” is to limit their conversations as much as possible to be able to focus on information that is being shared.