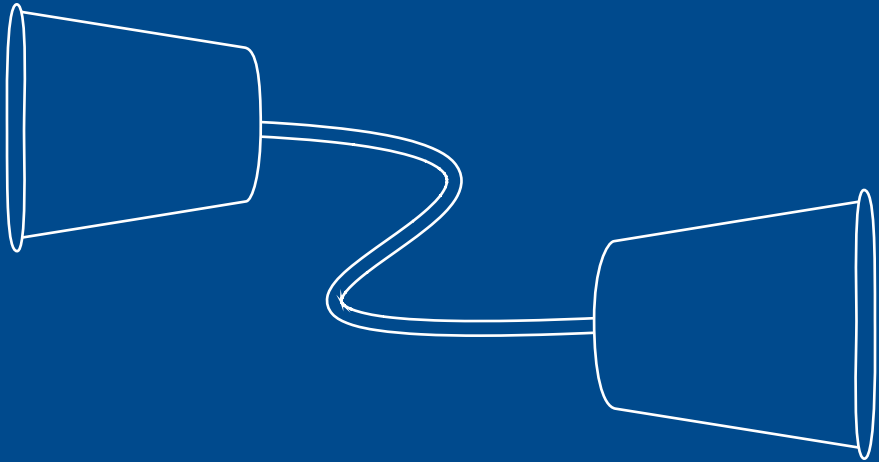


# STEM



## CUP PHONE

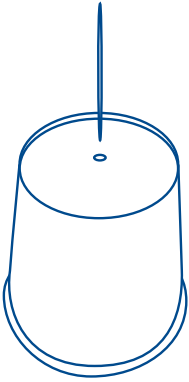
### SOUND WAVE STUDY

Build a telephone with cups and string. Learn how sound can travel through string as long as you stretch it tight.



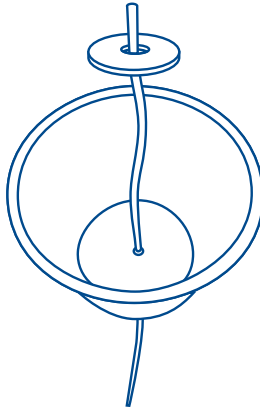
**EMERSON**<sup>TM</sup>

# CUP PHONE INSTRUCTIONS:



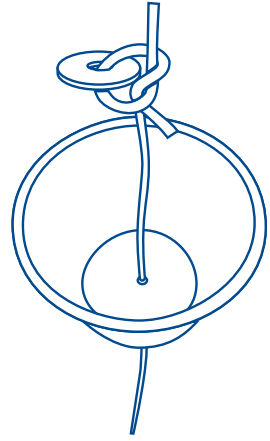
**1**

Use toothpick (from Spool Racer kit) to punch small hole in center of each cup.



**2**

Thread string through hole and slide washer onto string.



**3**

Tie washer to string using double overhand knot and repeat with other cup.



**4**

Stretch cups as far as they can go with tension and talk into a cup while another person holds the other cup to their ear.

## TRY IT:

Experiment using cups around corners, inside versus outside, and with different string tensions. How does this impact sound?

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## HOW IT WORKS:

Your voice creates vibration in the bottom of the cup transmitting sound waves through the tight string to the other cup.