

screaming string Thing

What a racket! Turn an ordinary cup and string into a screeching, squawking sound machine.

Fetch!
with
Ruff Ruff
Ruffman™

1 Get what You need.

- paper or plastic cups • large paper clips
- cotton string • scissors • sharpened pencil
- tape • water • dishwashing liquid

2 Construct Your cup.

- Poke a small hole in the bottom of a cup with a pencil.
- Pull a string (about 2 feet long) through the bottom of the cup.
- Tie a paper clip to the end that's inside the cup.
- Pull the string tight, so that the paper clip rests against the bottom of the cup.
- Tape the paper clip flat.

3 Make some noise!

- Hold the cup in one hand and the string in the other, near the bottom of the cup. Squeeze the string tightly between your fingers and thumb and slide them down the string as fast as you can. What happens?
- Now wet the string with water, and slide your fingers along it again. What do you hear?

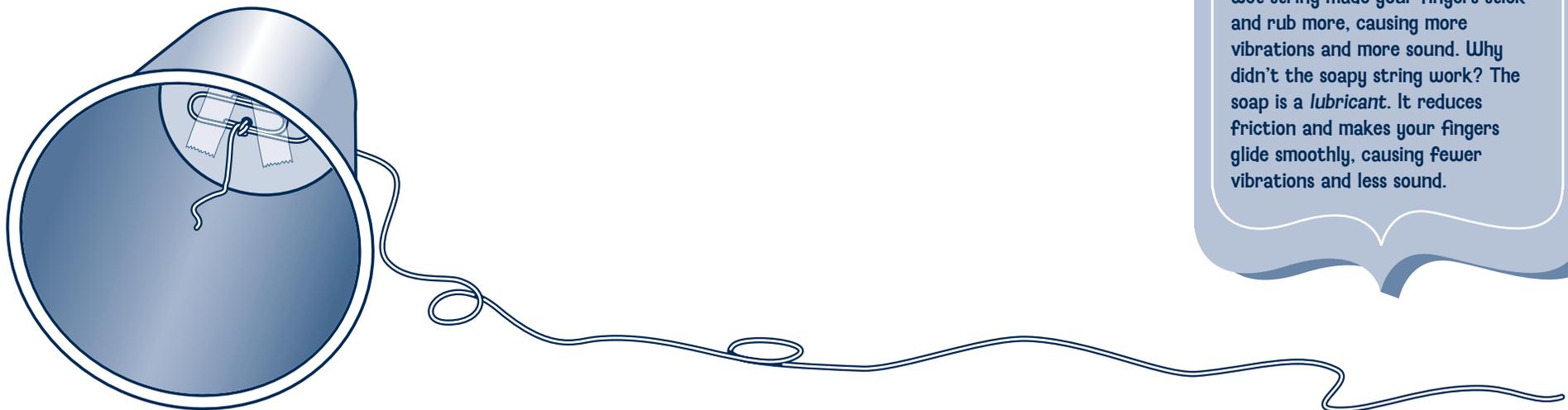
4 Predict, test, and observe.

Predict what would happen if you put dishwashing liquid on the string. Then test it. Which makes the loudest sound—the dry, wet, or soapy string? Why might one work better than the others?

Chew on This!

Sound vibrations travel through liquids, gases (like air), and solids (like the string in this activity). Sliding your fingers along the string creates *friction* (rubbing and sticking). This causes the string to vibrate. The vibrations travel up the string to the cup, which acts like a speaker and *amplifies* them (makes them sound louder).

But why does the wet string work better than the dry string? The wet string made your fingers stick and rub more, causing more vibrations and more sound. Why didn't the soapy string work? The soap is a *lubricant*. It reduces friction and makes your fingers glide smoothly, causing fewer vibrations and less sound.



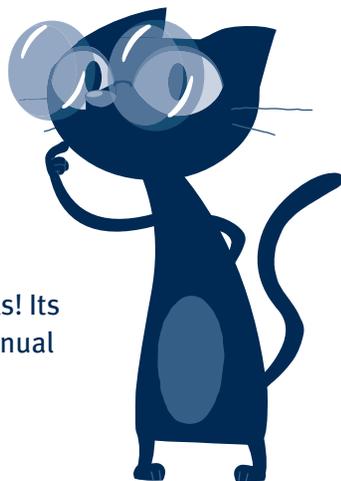
Dig Deeper

Long-distance call. Get a partner and tie the ends of your two Screaming String Things together to make a string telephone. Pull the string tight while one person talks into one cup and the other person listens through the other cup. Make another phone with longer string and try making a long-distance call!

Hearing is believing! You'll be amazed by the sounds an ordinary wire coat hanger can make. Try the Stereo Hanger activity from ZOOM: pbskidsgo.org/zoom/printables/activities/pdfs/stereohanger.pdf

Did You Know?

There's a Brazilian instrument that works a lot like your cup and string. It's a friction drum called a cuica (KWEE-kah). The cuica player rubs a bamboo stick inside the drum with a wet cloth, and it squeaks and squawks! Its hilarious sounds can be heard during the annual Brazilian Carnival.



Watch **FETCH!** on PBS KIDS GO! (check local listings) and visit the **FETCH!** Web site at pbskidsgo.org/fetch.



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Fold

Fetch!

screaming string thing

Even though I've got my own TV show, my owner thinks I should keep my day job as a watch dog. But I don't have the time to bark at intruders anymore. After all, I'm a V.I.D.—Very Important Dog! If only I had some handy device to do the barking for me—or at least make creepy noises to scare the mailman. Can you help?

GOOO FETCH!

