

Elephant Tube

Materials

- Strong tube
- Rubber glove
- Scissors
- Tape
- Straw



Method

1. Stretch the glove over the end of the tube so that only the thumb part is sticking up.



Facts you can feel.

2. Tape your glove to the tube.



3. Cut the tip off the thumb part of the glove, and tape the straw inside.



4. Stretch the thumb to the side, so that it is flat over the edge of the tube, and blow through the straw. This bit can be a bit tricky so make sure to keep practicing if it doesn't work the first time, eventually you'll get it sounding like an elephant.
5. Once you have it working, try experimenting with some other designs to see what changes.

Exploring

- Try experimenting with different sized tubes? Does the pitch of the sound get lower or higher? Can you figure out why?
- If you find one tube that can fit in another, get a friend to move it up and down while you play. How does the sound change? Can you find out why?
- Try different materials and see if they make different sounds.

Musical Cups

Materials:

- A cylinder with one open end, a cup is easiest to start with
- String
- Sharp pencil
- Damp fabric



Method

1. Carefully poke a small hole in the bottom of your cup with the sharp pencil. If you poke through too far and the hole is too big you might be able to fix it with tape.



Facts you can feel.

2. Push the string through the hole, and tie a few knots on top of each other on the side that is in the cup.



3. Get a damp piece of fabric and drag it down the string.

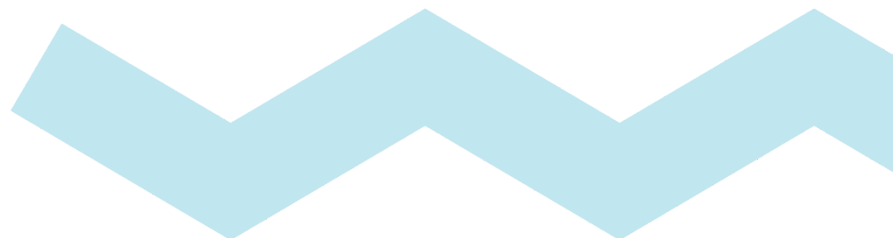
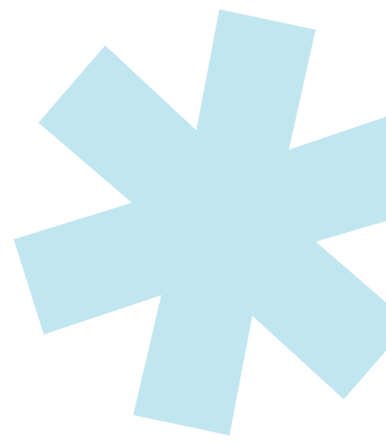


Exploring

- You can make these with any cylinder with one open end and something that can vibrate attached to the base.

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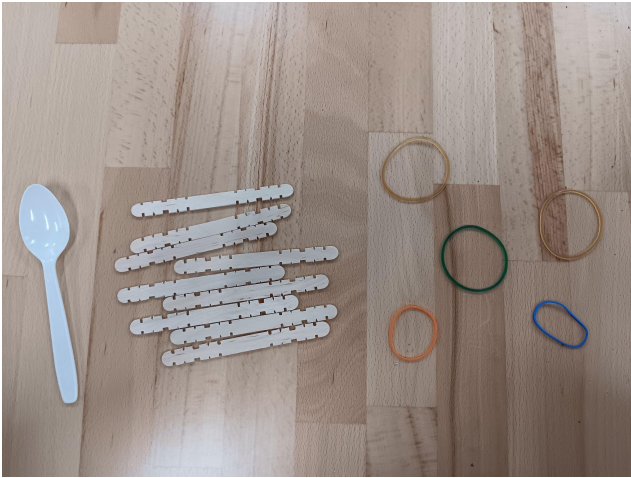
- Experiment with different size and material 'cups' like buckets or tins with an adult's help. How does the size change the sound? How does the material change the sound?
- Try using different kinds of string, or even other things that can vibrate like slinkies or springs. How do different things change the sound?



Catapult

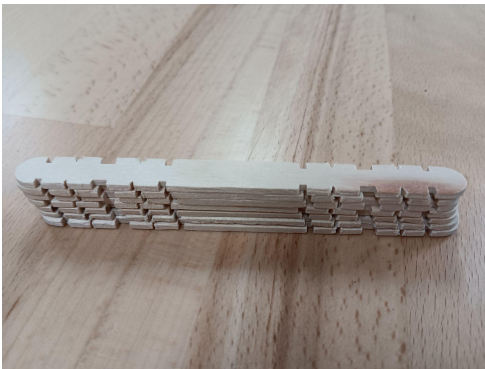
Materials:

- 9x Paddlepop sticks
- 5x rubber bands or tape
- 1x spoon
- Something light to launch, like a ping pong ball or pom pom.



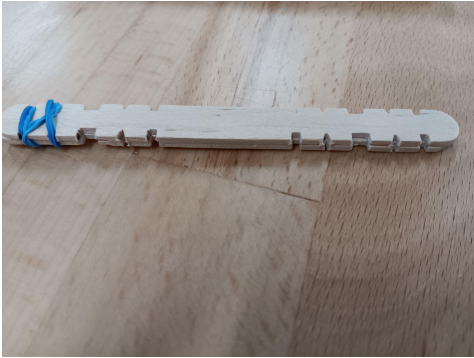
Method

1. Bunch 7 paddlepop sticks in an aligned stack and hold them together with rubber bands on either end.

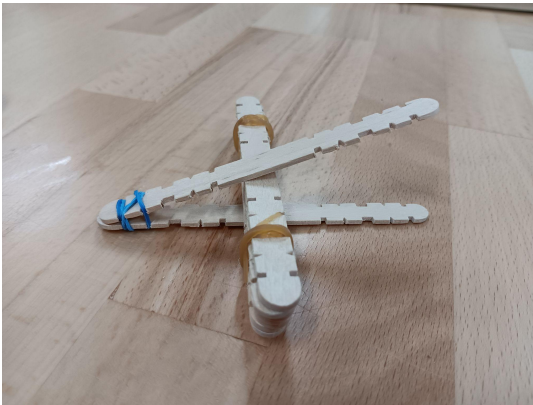


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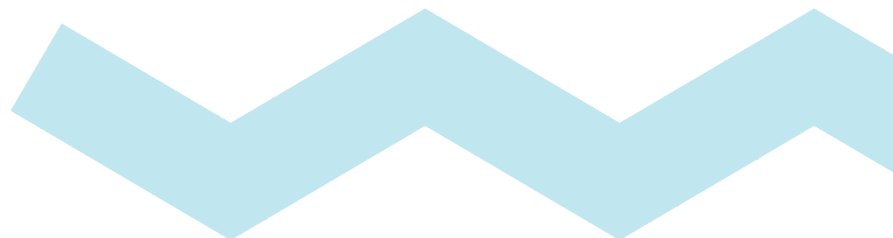
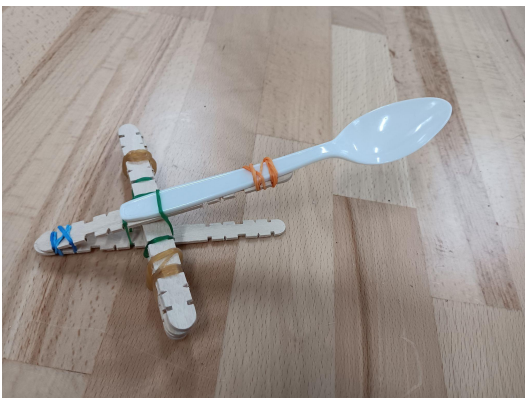
2. Connect the remaining 2 paddlepop sticks together at one end with another rubber band.



3. Jam the stack of 7 paddlepop sticks between the 2 sticks, as close to their joining point as possible, and hold this together with another rubber band.



4. Determine which of the 2 sticks is flat against the stack, and which is angled.
5. With the flat aligned side as the base, connect the spoon to the angled side with a rubber band.



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6. It is now ready to test fire, just make sure to always aim away from people. Even though we only launch light things, it could still hurt someone if it gets in their eye.



Exploring

- Make changes to your catapult, one at a time, and see what happens differently. You can try:
 - Making the catapult arm longer or shorter,
 - Making the angle steeper or shallower,
 - Making different parts of the catapult heavier or lighter,
 - Making a similar catapult with different materials,
 - Anything else you can imagine.
- Set up something to aim for and try some catapult basketball. Challenge your friends and see who can get the most shots in the shortest time, or who can get their catapult to launch the ball in the hoop from furthest away.
- Can you imagine some other games you might be able to make with catapults? Could you play catapult lawn bowls? What about catapult mini golf with obstacles?

Air cannons

Materials:

- Cup
- Balloon
- Tape
- Scissors
- Sharp pencil



Method

1. Carefully poke a hole in the bottom of the cup with your sharp pencil. For this one you want to poke right through so the hole is as wide as the pencil.



2. Tie a knot in the balloon, then cut the top third off of the balloon. To use a balloon that has been blown up and used, you can place a piece of tape right on the top of

Facts you can feel.

it and carefully poke a small hole through the tape with a skewer.



3. Stretch the part of the balloon with the knot over the open end of the cup and tape it in place.



4. Pull back on the knot and release to launch your air cannon.

Exploring

- Anything stretchy that air can't get through can help to make one of these. What other materials could you use, instead of a balloon?
- Can you make bigger air cannons?
- Try making some targets to aim at. Try making things that fall or sway. How well can your air cannons move them?