

- STEM ACTIVITY -

POPSICLE STICK CATAPULT

Key Concepts: Physics, engineering, kinetic energy, potential energy, projectile motion.

Introduction

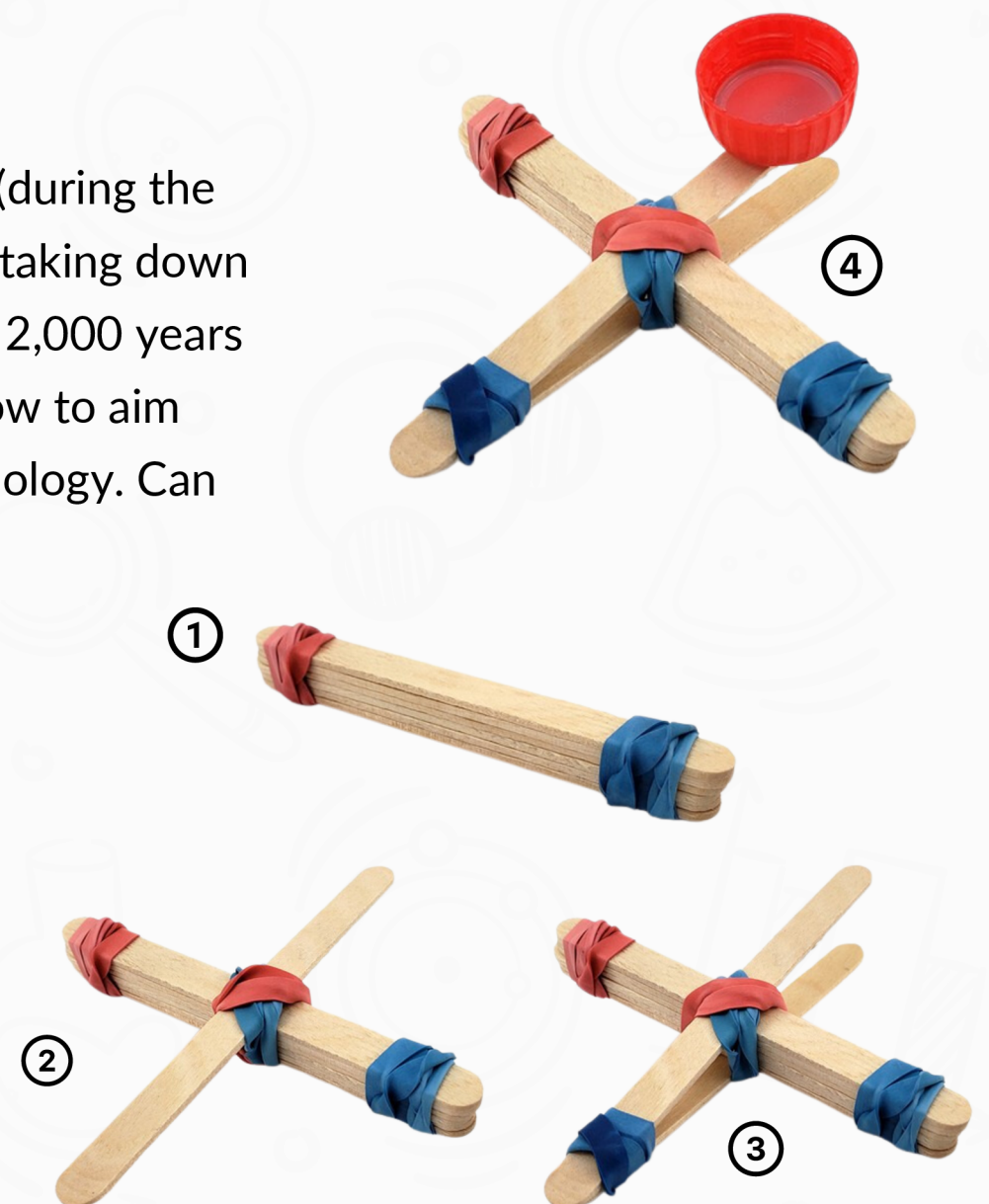
Catapults were mighty handy for pirates in the golden age of piracy (during the 17th century). And medieval knights used them centuries earlier for taking down massive castle walls. Even Greeks and Romans used catapults about 2,000 years ago! These simple machines are quite handy, as long as you know how to aim them! In this science activity you will try your hand at catapult technology. Can you predict where your cotton ball will land?

Materials *(check the boxes if you have all)*

- Popsicle sticks (8)
- Rubber bands (at least 5)
- Glue Gun & Sticks
- Plastic bottle cap to hold a cotton ball
- Cotton ball or crumbled paper
- Small open area (One square meter will do. It should be a sturdy, flat surface such as a table or floor.)

Instructions

- Take six craft sticks, stack them one on top of the other. Secure these sticks together by wrapping rubber bands around both ends of the stack. You will anchor the launching stick to this stack, as described in the next step.
- To add the launching stick take one stick and attach it perpendicular to the stack you just made, around the middle, so you get a cross shape. You can do this with one or two rubber bands that are crossed in an X over the sticks. If you cross it this way, the sticks will stay nicely perpendicular.
- Next, add the base by attaching a stick to one end of the launching stick with a rubber band.
- Put your catapult on its base, locate the end of the launching stick that sticks up and glue the bottle cap there so it forms a small cup to hold the cotton ball.



Write Your Observations

Does your ball fly higher or lower?

Which part was the hardest?

Does it land farther or nearer when you push down a lot compared with when you push down a little?