ACTIVITY

DIY CATAPULT

OVERVIEW

A catapult is a **simple machine.** It uses a **lever** to move a **load** around a **fulcrum** using **force.** In this activity, you will build a catapult that works by converting **potential energy** into **kinetic energy.**

When you press down on the bottle cap, you add potential energy, and when you release the catapult, you are converting to kinetic energy.

MATERIALS

- ◯ 7 popsicle sticks
- ◯ Bottle cap or spoon
- ◯ 4 elastics
- ◯ Objects to launch like marshmallows, cotton balls or small plastic balls

Get creative with the materials and try using different things you find around your home!

BACKGROUND INFORMATION

- **Potential energy** is energy that is stored inside an object just before it sets into motion. Think about how an elastic feels when you stretch it apart to sling shot it; before you release it, it is bursting with stored energy.
- **Kinetic energy** is the energy of motion. This is when you release the elastic and it sling shots across the room!
- A **fulcrum** is the pivot point around which a lever will turn. When you apply force on one side of the lever, the fulcrum will re-direct the force in another direction.

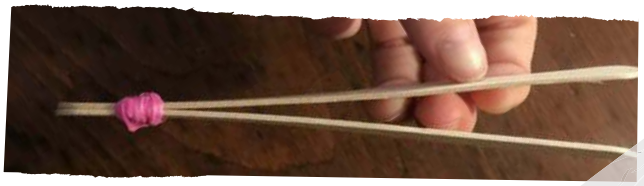
STEP-BY-STEP INSTRUCTIONS

STEP 1: Create your fulcrum

Pile five popsicle sticks together and tightly fasten each end together with an elastic.

STEP 2: Create you lever

Pile two popsicle sticks together and wrap an elastic around one end so that the other side can be pulled apart.



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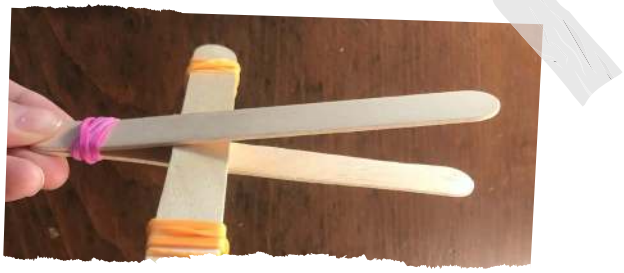
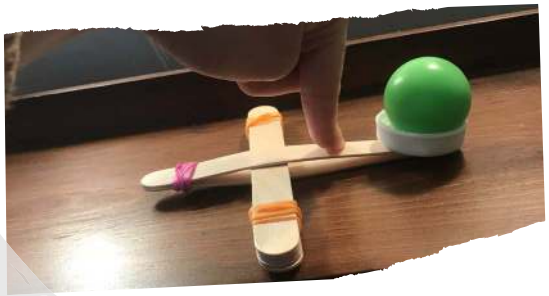
STEP-BY-STEP INSTRUCTIONS

STEP 3: **Attach lever and fulcrum**
Slide the stack of five sticks in between the combined two popsicle sticks as far down as possible.



STEP 4: **Attach load carrier**
Attach bottle cap or spoon to the top lever popsicle stick with glue or tape.

STEP 5: **Time to launch**
Place your load (marshmallow, cotton ball...) into the bottle cap and press down on the popsicle stick. Release and watch your load fly!



STEP 6: **Play!**
Test out your catapult creations!

FOLLOW UP

If you were to complete this challenge again, what would you do differently? What tips could you give the next person to complete the challenge?

Post an image of your tallest freestanding tower on Facebook or Twitter and tag @pinnguaq!

ADDITIONAL RESOURCES

Check out this up-cycled catapult activity using recyclables and household items by **Go Science Girls**.

Upcycled Catapult - STEM go green DIY Challenge

You can now make an upcycled catapult easily. With the right projectile ready you can now teach...

Go Science Girls / Angela / Sep 21, 2019