

JR-SCIENTISTS

POPSICLE STICK CATAPULT

This popsicle stick catapult design is an **AWESOME STEM** activity for kids of all ages!

INSTRUCTIONS:

STEP 1: Stack 8 craft sticks on top of one another and secure both ends tightly.

STEP 2: Wedge the 9th stick between the last and next to last stick in a perpendicular fashion.

STEP 3: Finish off with one stick on the top of the stack. Secure the ends of those two sticks with a rubber band as seen below.

STEP 4: Glue on your plastic bottle top if desired and set up the launch items.

STEP 5: Hold down the catapult with one hand while pushing down the top part of the lever with the other hand. Release and watch your items fly.

THE SCIENCE

This catapult is a simple machine. The stack of craft sticks acts as the fulcrum point. If you move the stack farther from where you are pushing down, you get a better launch. If you move it closer, you get a weaker launch.

Other physics concepts at play here are stored energy or potential elastic energy. As you pull back on the popsicle stick, bending it and then release the stick all that potential energy is released into energy in motion producing the projectile motion.

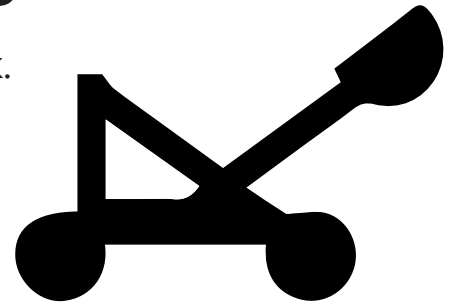
SUPPLIES

10 Jumbo craft sticks
3 Rubber bands
Bottle cap and super glue or hot glue
Launch Items

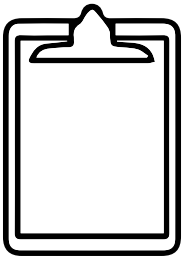


Catapult Observations

Use this worksheet to process and evaluate your work.



Which item do you think will travel the farthest? Why?



RECORD

Test and measure how far each item is flung from the catapult!

ITEM

DISTANCE IN INCHES

ITEM

DISTANCE IN INCHES

ITEM

DISTANCE IN INCHES

ITEM

DISTANCE IN INCHES

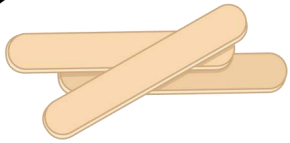
ITEM

DISTANCE IN INCHES

ITEM

DISTANCE IN INCHES

Can you design a different catapult using the same materials?
Which one worked the best?



CATAPULT ACTIVITY



Build a catapult to launch small objects by sending them flying to the target. Test your catapult by measuring the distance of each object you launch. You can even make use a paper target and test your launching accuracy. Record your data on the data chart.

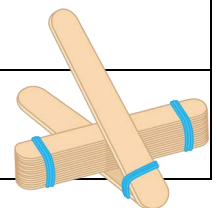
STEPS:

1. Use a pair of scissors to make two v notches on either side of two jumbo craft sticks towards the ends of the sticks.
2. Take the remaining 8 craft sticks and stack them on top of the other. Wind a rubber band tightly around each end of the stack.
3. Push one of the notched sticks through the stack under the top stick of the stack. Flip the stack over so that the stick you just pushed in is on the bottom of the stack.
4. Lay the second notched stick on top of the stack and secure the two popsicle sticks together with a rubber band as shown below. The V notches that you cut help to keep the rubber band in place.

Supplies:

10 jumbo popsicle sticks, 3 rubber bands, firing power (pompoms, marshmallows, candies, hearts), plastic bottle cap, adhesive

Try your experiment multiple times	Distance	Accuracy
Trial #1		
Trial #2		
Trial #3		
Trial #4		
Trial #5		



GRAPHICS CREDIT

