

# Popsicle Stick Catapult

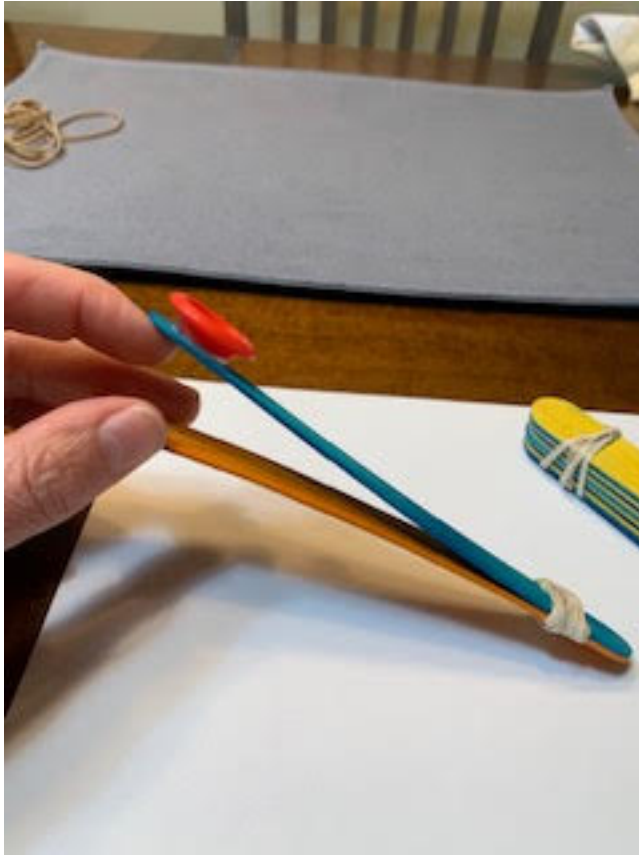
This activity allows you to build a catapult in two different ways (easy and more complicated). We supplied a ping pong ball, but if you have multiple different things you can launch, you can predict and test out which flies the farthest and determine why! You can change how tight you make the rubber bands on the lever and see if that makes a difference. You might even want to measure how far you can launch different objects using a ruler or measuring tape. So why is a catapult able to launch things so far? When you pull back the popsicle stick, potential energy, or "resting" energy gets stored up. And when you release the stick, the potential energy turns into kinetic energy, "moving" energy! Then gravity eventually pulls the launched object back to the ground. Make an easy catapult, take it apart and try the complicated one!

## Easy Catapult

Step1: Make a stack of 10 popsicle sticks and tie them together using two rubber bands, one at each end.



Step 2: Take 1 more plain popsicle stick and the stick with the rubber gasket and tie them together at the end without the gasket using one rubber band about a  $\frac{1}{2}$  inch from the end of the sticks. Make sure the gasket is facing out.



Step 3: Insert the big stack of popsicle sticks between the other two and push it up close to the rubber band end



Step 4: Put the ping pong ball on the gasket, pull back the stick and let it fly!

## More Complicated Catapult

Step 1: Take two sticks, make a V with the bottoms slightly crossed over and tie together with 1 rubber band. Repeat this with two more sticks so you have two Vs.



Step 2: Take 4 popsicle sticks and set them up in a square with the ends crossed over. Tie each corner off with a rubber band.



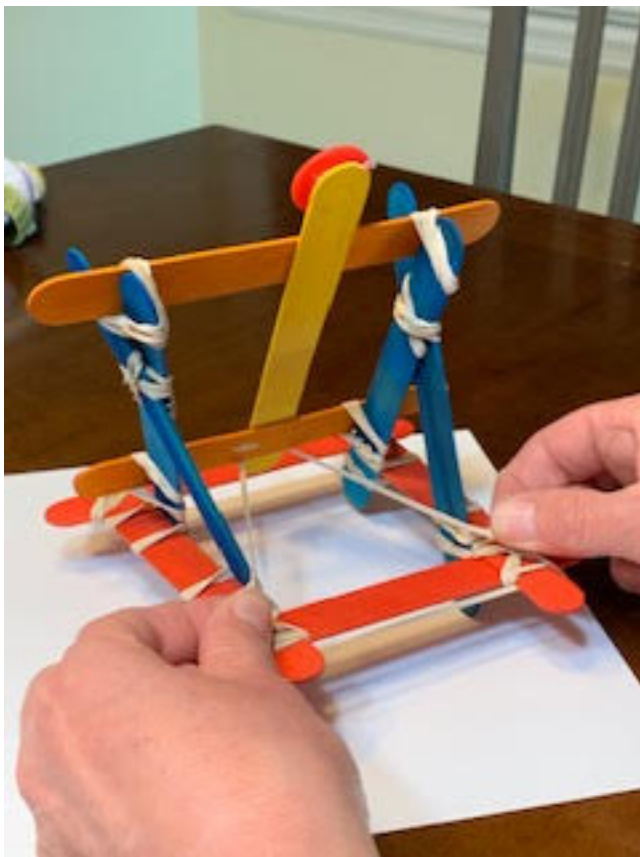
Step 3: Attached the Vs from step 1 to the square in step two with a few more rubber bands at the corners. This is your catapult base.



Step 4: Place 1 popsicle stick across the top of the catapult base and one across the bottom. Tie them on with rubber bands.

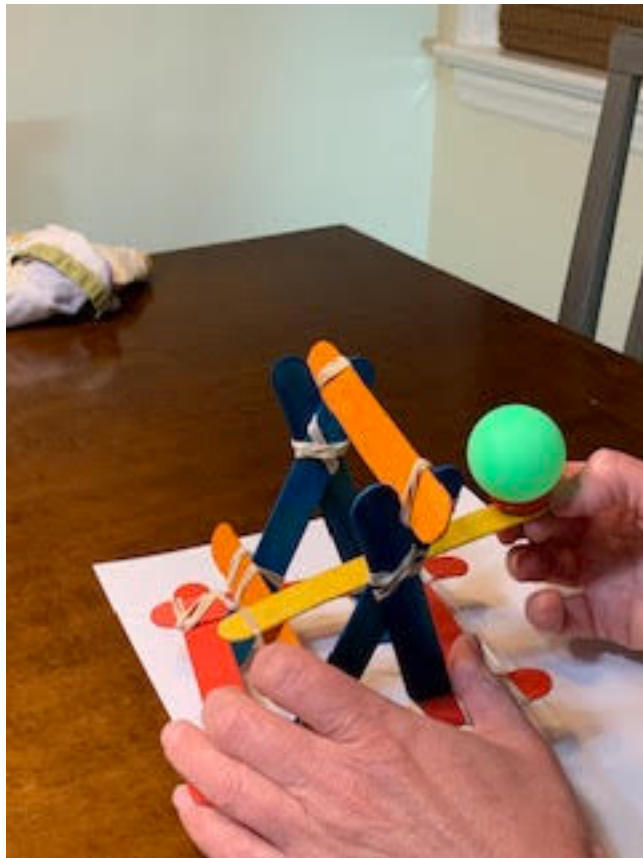


Step 5: Weave the the popsicle stick with the gasket through the sticks you placed in step 4. Place the rubber band around the base of the gasket stick and around the far corners of the base.





Step 6: Put the ping pong ball on the gasket, pull back the stick and let it fly!



[https://www.youtube.com/watch?v=WpLFC\\_SOpXs](https://www.youtube.com/watch?v=WpLFC_SOpXs)