



# CATAPULT SCIENCE

## How do we keep this experiment safe?

- Don't aim for other people.
- Predict where it will go – is that safe?
- Don't launch sharp or heavy items (no drawing pins!).

## Very simple catapults

- Spoon,
- Pencil or any item for fulcrum,
- pompom



Just push down firmly on the end of the spoon



## Questions

Does this work better if the fulcrum (pencil) is closer or further from the bowl of the spoon?

## Finger, twig or coat-hanger catapult



Make a Y shape with your fingers, a branch or a coathanger (make sure the sharp end is bent in so it doesn't poke you in the eye)

Stretch a rubber band across the Y.

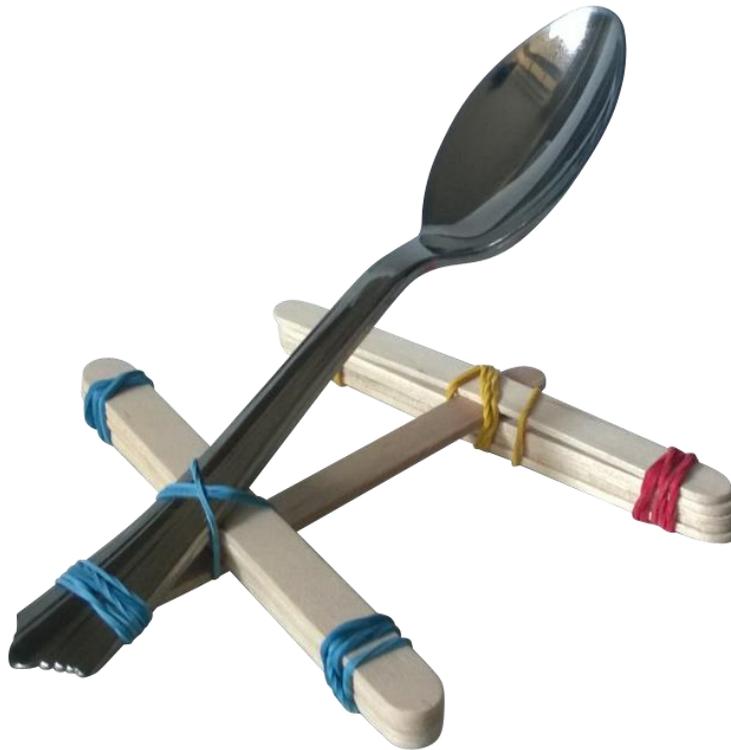
Pull it back and watch your pompom fly.



How can you make it fly further?

## Build your own catapult

- 4-7 rubber bands
- 7-11 paddlepop sticks
- 1 plastic spoon
- Pom pom balls {or other small, soft SAFE things to launch}



1. Stack 5 paddlepop sticks together, and fasten the ends with rubber bands.
2. Put 1 craft stick and one spoon together, and wrap a rubber band around the bottom end.



3. Place the stack of 5 paddlepop sticks between the paddlepop and spoon.
4. Wrap a rubber band around all of the paddlepop sticks to hold the catapult together.
5. You can add a second set of paddle pop sticks at the back end to stabilize/change angle if you wish – four under, 1 over the crossbar.
6. Push down on the spoon and let it go to launch a pompom from the bowl of the spoon

This catapult stores energy in the rubber bands and plastic spoon handle (they want to stay in a certain shape and bending them out of shape needs and stores energy).

When you let it go it from the shape it *didn't* want to be in, it springs back quickly into its happy shape. Which makes your pompom fly far and fast!

**SAFETY:** Point this away from people. Only use small, soft, light items to throw.