

STEAM Experience

Subject: Engineering

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Snowball Catapult

ACTIVITY OVERVIEW:

Using simple materials you probably have around your home you can create a cool, hand-held catapult. Re-design over and over to see if you can make your “snowballs” go farther.

Click here to watch Ron and Libi Ippolito conduct this experiment: <https://youtu.be/u9rhhCRW5e4>

MATERIALS:

- popsicle sticks (at least 10)
- rubber bands (6-10)
- plastic spoon
- marshmallows



STEP-BY-STEP INSTRUCTIONS:

For the sample catapult this is what we did, but you and your child can experiment with different configurations of the catapult.

1. Stack 9 popsicle sticks and secure both ends with rubber bands
2. Put the final stick on top of the base you made in the shape of a plus sign and secure it with a rubber band or two.
3. Place the plastic spoon over the single stick and secure it with a rubber band or two.
4. Place a marshmallow in the bowl of the spoon, pull back with our finger and release.
5. ***Watch what happens!!***

WHAT DOES THIS SCIENCE ACTIVITY HELP US LEARN?

Engineers take things we use every day and try to improve them. Beginning with the basic plan for the catapult, see how redesigning and reimagining it will cause your marshmallow to fly farther, straighter, higher--- there is no limit to how you can improve this simple tool!

Grade Levels: Any, but it is ideal for upper elementary since they can construct the catapult on their own and experiment with different designs.

HOW CAN I DO THIS AT HOME WITH MY CHILD?

Gather the supplies and set aside 20-30 minutes for some science fun.

We suggest creating the first catapult together, then allowing your child to be creative and modify it.

CHANGING IT UP (If applicable, provide a few ways you could change this experiment to find new results, use different materials, etc.):

- Have contests to see who can send their marshmallow the farthest.
- Aim into a bowl, bucket, or a friend's mouth to see who can get the most marshmallows inside.
- Try using the supplies differently-- Will changing the number of popsicle sticks make your marshmallow fly further? What if you do a different configuration of the sticks and rubber bands? Would using a larger spoon give you more power?



ADDITIONAL RESOURCE AND EXPERIMENTS FOUND ON THE CALIFORNIA STATE PTA RESOURCE LIBRARY: <https://capta.org/resource-library/>