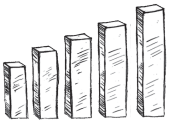
Catapults for Distance



MESS METER: 0

NO ADULT SUPERVISION REQUIRED

SAFETY PRECAUTIONS

PREP TIME: 15 MINUTES
EXPERIMENT DURATION: 15 MINUTES

Supplies Needed

- 7 craft sticks
- 4 rubber bands
- Tacky glue or hot glue
- Milk jug cap
- Small objects to launch
- Measuring tape

Science Question: How does a catapult work?

Who wants to launch stuff across the room? A great tool to use is a catapult. In this experiment, you'll make a simple catapult.

The Experiment

Stack 5 craft sticks together and wind a rubber band around each end. Grab the remaining 2 sticks and wrap a rubber band around only one end.

Separate the 2 craft sticks, keeping the banded end intact. Place the stack of 5 craft sticks between the "V" of the 2 craft sticks. Next, wrap a rubber band around all of the craft sticks to hold the catapult together. Glue a milk cap on one end of the stick as a launching platform.

Place your projectile in the milk cap, push down on the top craft stick and release it to launch the item from the milk cap.

Try This!

How far did your projectile go? Try your catapult again. This time pick a heavier item. Do you think a heavier object will go farther or land closer than your previous launch? Measure and compare how far each object travels.

The Outcome

When you released the top craft stick, the small toy should have launched!

Why It Worked

When the sticks of the catapult are pulled back, they collect or store up potential energy. When you let go of the top stick, this releases that energy quickly with force. Force causes acceleration, and your object flies.

Variation

- You can use a disposable plastic spoon to make the easiest catapult ever! Put a mini marshmallow on the end of the spoon. Pull the spoon back toward you, let go, and watch the marshmallow soar.

Safety First!

Don't ever aim a catapult at another person. You can injure someone.