

# Build a... crazy catapult

This device uses energy to propel items through the air.

## What you need

- 10 large lollipop sticks
- Scissors
- 3 elastic bands
- PVA glue
- Bottle cap
- Soft projectiles (such as mini marshmallows or pompoms)

## GREAT GAME

Place a leftover bottle cap in the middle of the table and, using your catapult, see how many goals you can score by landing projectiles in the cap. Challenge a friend to see who scores the most times after 10 tries.

## How does it work?

As the lollipop stick is pressed down it bends and gains a type of energy known as potential energy. This turns into kinetic energy (energy of motion) when the stick is released and springs back up. The stored energy is transferred to the projectile, which is pushed forward and flies through the air. The further you push the stick down, the more energy is stored and the further the projectile will travel when the stick is released. Experiment by adding more and less pressure to the stick and see how this affects the distance travelled by the projectile.

## ANCIENT WEAPON

A catapult was a weapon used in the Middle Ages (a period between the 5th and the 15th century) to hurl stones and other things at a distant target.

**WARNING!**  
Don't use anything hard or dangerous as a projectile, and **NEVER** aim at another person.



**1** Take a lollipop stick. Use the scissors to make a small notch on either side of one end. Repeat with a second stick.



**2** Stack the remaining eight sticks and wrap an elastic band around each end to hold them together tightly.



**3** Push one of the notched sticks between the top and second-to-top stick, to make a cross-shape. Turn the stack over.



**4** Place the other notched stick across the top of the stack. Wrap an elastic band around the notched ends of both sticks to hold them together.



**5** Glue the bottle cap to the raised end of the lollipop stick that is on top of the stack. Leave it to dry (this may take up to 24 hours).



**6** Once the glue is dry, your catapult is ready. Pop some soft projectiles into the lid, press it down, let go and fire away!