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Snowball thrower

Propel "snowballs" through the air with this gadget that teaches you all about energy.

What you need

- 8 lollipop sticks
- 4 elastic bands
- A bottle cap
- Glue
- Soft or light things to fire (ping-pong balls, pompoms etc)

How does it work?

A catapult is a contraption for transferring energy. As the lollipop stick is pressed down, it bends and becomes a store for a type of energy known as potential energy. This is transferred into the kinetic energy (energy of motion) of the projectile, when the stick works against the force of gravity as it springs back up. The further you push the stick down, the more energy is stored and the further the projectile will travel when the stick is released.

1 Stack six lollipop sticks on top of each other. Wrap an elastic band tightly around each end to hold the sticks together. This is your base.

2 Line up the two remaining sticks and wrap an elastic band around one end. Check that the sticks open to form a "V" shape. This is your lever.

3 Open up the lever and slip your base in between the sticks. Secure the lever to the base by wrapping another elastic band tightly around the middle. We tied the sticks using a "figure of 8" pattern.

4 Glue a bottle lid to the free end of the lever. Once it is dry, load it with soft missiles, push the end of the lever down and release – and watch them fly. Be careful not to fire a missile towards people.

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