



Science Activity

Rubber band cannons

Time to prepare: 10 - 15 minutes



□ Please, stay safe and ask a grown up to supervise you

Resources/ things you need

- A Pringles tin or similar
- A 500ml soft drink bottle
- Elastic band (at least two of the same type)
- Masking tape or cellotape
- Scissors
- Tin foil
- A pencil

What to do

Watch this video for easy-to-follow instructions
<https://www.rigb.org/families/experimental/rubber-band-cannons>

1. Cut off the metal bottom of your Pringles tin (**Ask an adult to help you with this**).
2. Cut 2 small slits from the opening you just made, first on one side of the tin, then on the other. This is where your rubber bands attach (See picture 1).
3. Attach rubber bands around the slits and tape to secure them in place (See picture 2).
4. Now take your plastic bottle. Use scissors to carefully poke 2 holes in the bottle, one in each side. Push a pencil through these holes so that it sticks out both sides. (See picture 3).
5. Place the bottle bottom first into the Pringles tin (from the top of the tin) until the pencils stop it from going any further.
6. Secure it in place by pulling the 2 rubber bands around the pencils (see picture 4)
7. Your cannon is ready to shoot! Simply place a ball of crumpled up tin foil inside, pull the top of the plastic bottle and fire away! (**Your parents may prefer you to do this outside!**)

Background and the link to learning

When you pull the firing pin (the bottle) back, you are stretching the rubber bands. Energy from you is stored in the rubber bands. When you let go of the bottle, the energy stored in the elastic bands is transferred to the projectile (tin foil ball). The distance a projectile travels depends on its mass, the amount of energy it's initially given (and so the speed at which it leaves the cannon) and the angle at which it's launched.

Pictures



Invent a challenge - Decide what you are going to do with your cannons. You could try to hit a particular target, launch your tin foil ball into a basket or use it to knock something down. Just make sure you don't aim it at another person!



[Link to other similar activities](#) - Please see [balloon car racers](#) and [make a parachute](#).

