

Rocket Science

Build and launch your own simple stomp rocket!

12+

Forces and Motion



Background information:

A great hook lesson for a topic on **space**. This is equally a fantastic opportunity to support skills for **scientific enquiry** through **predictions** and **fair tests**. There are multiple **variables** from which pupils may select one and **investigate** its impact upon the distance travelled by the rocket for example: number of fins; length of rocket; mass of rocket; angle of trajectory or force of the stomp.

The activity also promotes the active use of **maths** through **measuring** values like **angle**, **height**, **mass**, **time**, **distance** or **speed**. ($\text{speed} = \text{distance}/\text{time}$)

Equipment

Launcher

- 2L empty plastic bottle
- Gaffer tape
- Cardboard tube insert from aluminium foil or similar
- Length of bike inner tube

Rockets

- Card
- Scissors and sticky tape
- Blue tack or play dough

Activity

To make the launcher

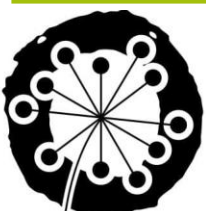
- Connect the length of inner tube to the mouth of the plastic bottle.
- Connect the cardboard tube to the other end of the inner tube.
- Ensure both connections are air tight with gaffer tape.

To make a rocket

- Roll a piece of card tightly around the cardboard tube to make the body of the rocket and secure it with tape.
- Make a card nose cone and attach it with tape. It can be weighted with blue tack for ballast.
- Attach fins to the rocket using the card and tape if desired.

To launch the rocket

- Slide the rocket down the cardboard tube
- Angle the tube for the desired trajectory
- Stomp on the plastic bottle for thrust!
- Blow into the tube to re-inflate the bottle ready for the next launch.



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