

# Lift Off! The Balloon Rocket Race.

## Materials Needed:

- Balloons
- String
- Sticky tape
- A sense of adventure :-)

1. Cut a long piece of string and thread it through a straw.
2. Tie the string to a doorknob or chair (or if outside a tree or a pole).
3. Pull the string tight and attach to another fixed point at the same height so the string is pulled tight.
4. Blow up the balloon but do not tie it. Hold the neck of the balloon closed or pinch it with a paper clip to keep the air from escaping from the balloon.
5. Attach the blown up balloon to the straw with sticky tape.
6. Let go and watch your balloon rocket go!
7. Set up several strings, using different shape balloons.
8. By letting the balloons go at the same time find out which balloon shape (round or long) goes faster.

## Don't be greedy!

Make sure and share all the fun you had during your balloon rocket race by uploading photos and videos to [www.scienceweek.ie](http://www.scienceweek.ie)

## Forces

Forces can make things move faster, slower, change direction or stop. A force is any push or pull on an object.

There are some forces that we can see such as the pushing and pulling in a tug of war but there are also invisible forces that we can not see such as magnetism or gravity.

Forces are measured in Newtons (N) after the great English scientist Sir Isaac Newton.

## What's happening?

When the balloon deflates the air is pushed outside the balloon and creates a thrust force, pushing (or thrusting) the balloon along the string in the opposite direction.

This is called Newton's third law of motion 'For every action there is an equal and opposite reaction'.

In space rockets thrust is created from the burning rocket fuel as it blasts out of the rocket engine.

