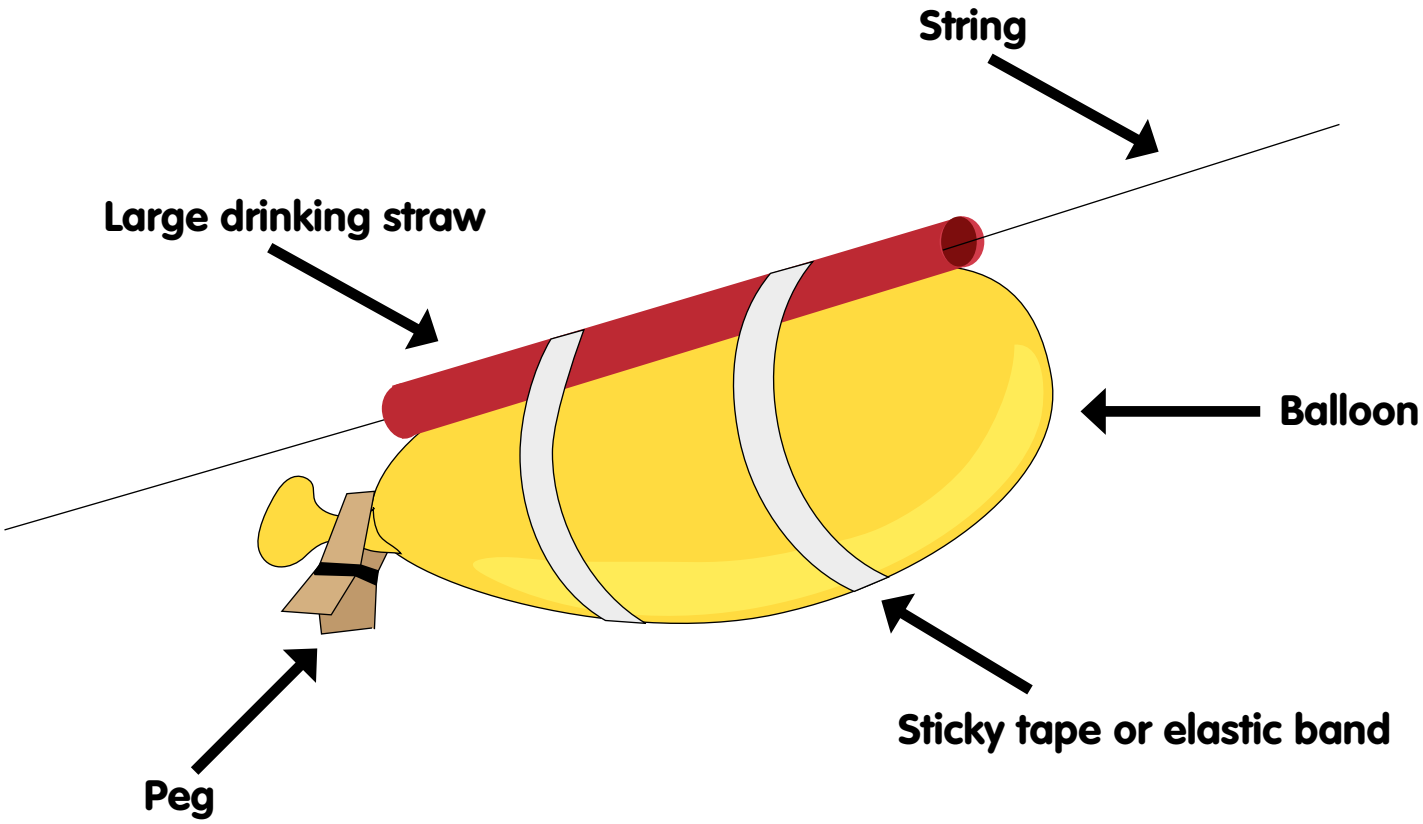
Rolls-Royce

# Balloon Rocket Investigation

**For pupils aged 7-11**

## Teachers' notes




This Activity Sheet is provided by Rolls-Royce plc as part of our continuing commitment to education

# Balloon Rocket Investigation

## Balloon Rocket Investigation

This investigation works in a similar way to the balloon buggy investigation but the pupils are asked to consider changes to the track as well as the balloon rocket. The range of ideas that pupils are likely to suggest as changes to the rocket or string track includes:

- The type of balloon
- Whether the balloon is round or straight
- How much the balloon is blown up
- The slope of the string
- The type of string used
- The weight of the balloon.

## Practical tips

This investigation asks pupils to consider changes to the balloon rocket or the string track. Pupils may find it easier to come up with a range of ideas if the are first asked to think about ways in which the force pushing the rocket could be increased and then ways in which the force of friction or the force of gravity acting on the rocket could be changed.

Balloon pumps are needed if the same balloon is to be reused for several runs. A long length of string is needed if the balloon rocket is to stop before the end of the track so that the pupils can measure the distance it has travelled. A sloping string will reduce the distance that the balloon rocket goes. Weight may be added to the balloon by taping small pieces of Plasticine to it.

Pupils who carry out the extension investigation, measuring the speed of the rocket will need to be familiar with using stop watches and will need to be able to calculate speed,

**Speed = distance / time**

## National Curriculum Links

This investigation links to attainment target Sc 4, Physical processes. At KS2:

Pupils should be taught:

**Sc4 2c** About friction including air resistance as a force that slows moving objects and may prevent objects from starting to move.

**Sc4 2d** That when objects are pushed or pulled an opposing push or pull can be felt.

**Sc4 2e** How to identify the direction in which forces act.