



## Parachute - How does a parachute work?

### Fact

- A parachute works to slow down someone or something from falling by creating “drag”.
- Drag is the push on something from air or water.
- Because air is much thinner than water it doesn't have as much drag.
- The bigger something is – the larger it's surface area the more drag it creates.
- That's why a parachute works so well – it's very light and it has a very big surface area. It catches lots of air in it as it falls so it creates lots of drag which slows it down as it falls.

### Do you know

- The first real parachute was invented in the 1780's – over 300 years ago.
- Parachutes have been used to slow down the fall of people and things ever since. Huge parachutes are even used to slow down the fall of rockets after they re-enter the earth's atmosphere and get closer to the ground.
- When I did a tandem jump with the New Zealand Air Force to investigate parachutes we jumped from 12,000 ft in the air.

### Experiments you can do

Make a toy parachute

#### What you need:

an adult assistant  
a piece of thick plastic bag (like from a rubbish bag)  
an empty bucket  
a piece of chalk  
a nail  
an big old potato, cut in half  
cotton  
scissors  
sticky tape  
a paper clip  
a pencil sharpener or something similar

#### What you do:

Put the bucket upside down on the piece of plastic bag and trace around it with the chalk. Have your adult assistant cut around the chalk marks to make a circle. Fold the circle of plastic bag in half and mark on the bag with the chalk where the fold line is. Put the potato under the edge of the plastic bag, cut side down and use the nail to make a hole on either side of the bag where the fold marks are, about 1 centimetre in from the edge of the circle. Fold the circle in half the other way and repeat the process.

Fold the bag in half then in half again and repeat the process until you have eight holes evenly spaced around the bag.

Use small pieces of sticky tape to strengthen the plastic between where you make the holes and the edge of the circle.

Cut 8 pieces of cotton 40 centimetres long and tie each piece of string to the plastic circle using the holes that you made in the plastic. Tie the other end of each piece of string to the paper clip and attach the pencil sharpener to the paper clip.

Drop your parachute from the top of jungle gym or from the top of a flight of stairs and see how it works to slow the fall of the pencil sharpener to the ground. It helps if it's a calm day without much wind or if you're inside.

### **Other Investigations**

Make a parachute using different shapes. Make a square parachute and a rectangular parachute and test them all to see which one is the best for something like a pencil sharpener.

Try different materials too. Instead of thick plastic use a shopping bag or tissue paper or news paper. Which one works best and why?

### **Jokes**

For Sale: Parachute. Only used once, never opened, small stain.

From Ben Helleur