



Tuesday 21st April

Afternoon Activity Science

Parachutes

This activity is about investigating how the larger the surface area of a parachute canopy, the slower it should fall. The first page of this document is to support you.

HEALTH AND SAFETY

This activity will involve dropping the parachute from a sensible height which you will need to supervise!

EQUIPMENT:

Think about what material you have at home that you can make various sized parachutes! Bin bags are a good resource but **please ensure they are used sensibly and safely.**

You will also need something to tie at the bottom of the canopy to be the parachutist, e.g a lego character or a piece of blu-tack

Thread to attach the parachutist to the parachute, e.g. wool, string or cotton thread.

Sellotape

Stopwatch (Use your phone)

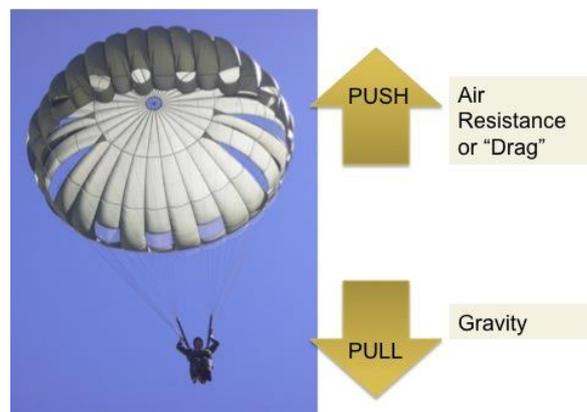
Scientific Knowledge:

The force of gravity pulls a parachute down to the centre of the Earth

Larger parachutes fall more slowly than small ones (if everything but the size of the canopy is kept the same)

A larger canopy will bump into more air so there is more air resistance.

Air resistance make you fall more slowly.



Parachutes!

In the story, *Alice's Adventure in Wonderland* by Lewis Carroll you will read the following passage:

The rabbit hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down what seemed to be a very deep well.

QUESTION: Alice thought that she would fall right through the centre of the Earth until she reached the other side of the Earth. Why did this not happen?

ANSWER: The force of gravity pulls you down, but pulls you towards the centre of the Earth.

In the story, Alice lands slowly but in reality she would have hit the bottom with quite a bump! Now if Alice had been wearing a parachute, she would have had a much better landing! What you need to do is design a parachute that would allow her to fall slowly. You will need to investigate the effect of changing the size of the parachute.

First make a control parachute. Then you can make changes to the design and see whether the new parachute falls faster or more slowly than your control parachute.



When you design the test parachute think about:

- which variable will you change, e.g. the size of the piece of material
- which variables you will need to keep the same to make the test fair, e.g. the shape of the design, the material used, the length of the threads are equal
- what you will measure to show what falls fastest, e.g. time

When you test the parachute, think about:

- how many times you will carry out the test to ensure the results are accurate
- how to make the test as fair as possible
- what you want to try next and what you think will happen with the next one

What did you find out about parachutes?

You might like to record the results in a table or draw a graph to see the results.

CHALLENGE:

What other variables could you change to make a different investigation? Have a go!

(Change the type of material or the design of the canopy)