

MODULE: *Marvellous Motion*

Episode 1: How Fast?

Activity Sheet 1.3 Investigating Parachutes

You are going to investigate parachutes and how they fall.

You will record the information for your results then interpret them.

You will also make predictions as to what you will expect to happen.

Information

Gravity is a force that pulls objects towards each other. Near Earth, the biggest object around, it's the surface of the Earth that things get pulled towards. A parachute is a device that is able to lessen the effect of the pull of gravity on an object dropping through the air.

The parachute is able to do this by creating a force that opposes gravity - drag. Drag is caused by the resistance of the molecules in the air to something attempting to move through it, in this case the surface of the parachute. For a slower descent you need to increase the drag effect. How will you do this?



You will need

Scissors	Plastic sheeting	Paper clips	Stopwatch
Card template	Measuring tape	Cellophane	Thread

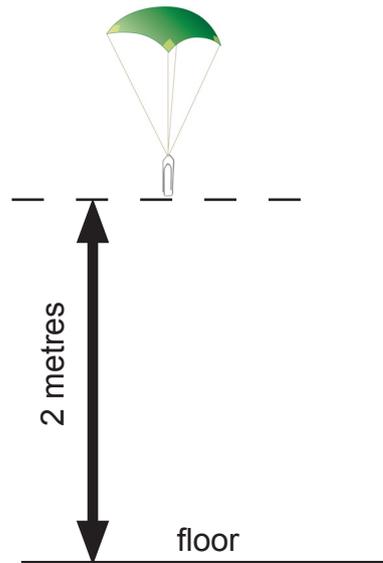
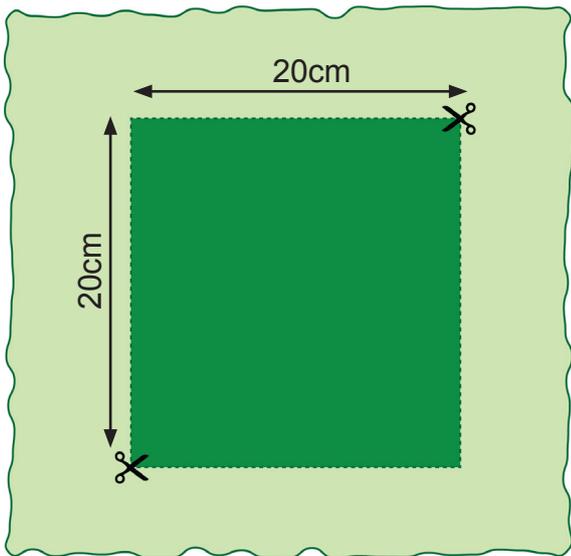


A safe place to stand, so that you can reach about 2.6m high.

Making your first parachute

1. Cut a 20cm square out of the plastic sheeting.
2. Use the tape to attach four threads 30cm long to the corners of the square.
3. Bundle the loose ends of the threads together and tie them together around a paper clip.





4. Working with a partner, find out how long it takes for your parachute to fall 2 metres (measured from the paperclip to the ground). Repeat this five times.
5. Record each result, then calculate the average.
6. Make a different parachute. Things you could change include:
 - Size of the parachute
 - Shape of the parachute
 - A parachute with a hole, or several holes, in the centre
 - Different material
 - Number of paperclips used
7. Show your results in a graph.
8. Repeat the experiment and compare your results with those of the first parachute.
9. Write about what you have found out.
10. Plan to make a third and final parachute. This time, you are going to predict what you expect to happen before testing your parachute.
11. Note down what you are going to change, and what you expect to happen.
12. Make the parachute and carry out your experiment.
13. Record and display your results.
14. Was your prediction correct? Explain what you found out.