

DIY Parachute



What Do I Need?

- A bin liner
- String
- Scissors
- A ruler/tape measure (to measure the materials accurately)
- Sticky tape
- A small plastic toy figure (like a soldier) to be the parachutist, or some pipe cleaners to make one

How Do I Do It?

1. Cut a 30 cm square out of your bin liner.
2. Make a hole in each corner.
3. Cut 4 lengths of thin string, each 30 cm long.
4. Feed a piece of string through a hole in one of the corners of the bag and tie a knot in one end to secure it in place.
5. Repeat this for each corner so you have one string on each corner of your bin bag square.
6. The strings need to be the same length. Hold all four corners of the parachute together where you've tied the strings. Pull the strings straight and tie them together, about 5 cm away from the loose ends.
7. If you haven't got a small toy you could make one with pipe cleaners, making a loop for the head and bending the pipe cleaners to make arms and legs.
8. Attach the loose ends of the string to the toy figure. If your toy is light you may need to add some weight to help it work. Some modelling clay will work well.

Skill Level:

Easy

Time

10 minutes

Continued overleaf

Go to bbc.co.uk/errificscientific for a video guide and other investigations to try at home

DIY Parachute (continued)

Safety Advice:

IMPORTANT GENERAL SAFETY NOTE FOR SUPERVISING ADULTS: This Terrific Scientific investigation has been devised so that with adult supervision, reasonable care and by following the instructions provided, no special safety equipment or knowledge is required to enjoy the experience safely. These safety reminders are designed to assist the supervising adult when planning and carrying out the investigation. Please read the instructions fully before starting.

- Take care when launching the parachute.
- If you are working outside ensure you keep a safe distance away from the launch and avoid breakable objects.
- If you are inside ensure no one leans over a ledge/height when launching.

What's Happening? The Science Bit:

When an object falls there are two main forces acting on the falling object; gravity (downwards) and air resistance (upwards, also called drag). Without the parachute gravity is much greater than air resistance so an object falls quickly. When the parachute opens the canopy increases the air resistance so the upward force increases and the parachutist falls slowly.

What might happen if you made the parachute bigger? Why did we use bin bags as a material for our parachute? What properties do you think the ideal material for a parachute should have?

My Parachute Won't Open... What Can I Do?

- You may have wrapped the string too tightly around the parachute. Wrap it again more loosely.
- The toy figure may be too light. It needs to have some weight to pull the strings down and start the parachute opening. You could attach some modelling clay. Try to avoid something hard with sharp edges in case it lands on something breakable.
- My parachute keeps floating to one side; this can happen if the strings are not the same length. Untie the strings from the toy figure and undo the knot. Check that all the strings are of the same length and try again.