

MAKING A PARACHUTE AND TESTING ITS DESCENT RATE



QUESTION: How does the size of a parachute affect how fast it falls?



BACKGROUND

A parachute uses air resistance (drag) to slow down a falling object. A larger parachute has more surface area, so it catches more air and falls more slowly.



MATERIALS

- Plastic bag or lightweight plastic sheet
- String or tape
- Scissors
- Hole punch or pin
- Small object for weight (e.g., clay, marble, or metal washer)
- Measuring tape (or meter stick)
- Stopwatch (or timer)
- Notebook and pencil
- Chair or step stool (for a safe height)



SAFETY FIRST

Use a chair or step stool with an adult's permission.
Make sure your test area is clear of people, pets, and breakable items.



HYPOTHESIS

If I increase the size of the parachute, then it will take longer to reach the ground because it will fall more slowly.



PROCEDURE

1. Make a parachute:
 - Cut a square or circle from the plastic.
 - Punch four holes near the edges.
 - Cut four equal lengths of string and tie one end to each hole.
 - Tie the other ends of the strings together.
 - Attach your weight to the knot.
2. Choose a safe height (at least 2 meters or higher). Measure from the ground to your release point.
3. Drop the parachute and start the timer at the same time.
4. Stop the timer when the weight touches the ground. Record the time.
5. Repeat 3 times and record each trial.
6. Change the size of your parachute (larger and/or smaller) and repeat the test.



DATA TABLE

Parachute Size (description)	Area (approx.) (cm ²)	Time to Reach Ground (s)			Average Time (s)
		Trial 1	Trial 2	Trial 3	
Small					
Medium					
Large					

Tip: Area can be estimated by measuring the width and height and multiplying (for a square) or using πr^2 for a circle.



CONCLUSION

1. What happened to the descent time as the parachute size increased?

2. What does this tell you about the relationship between parachute size and falling speed?

3. How could you improve your experiment?



THINK FURTHER

What other factors might affect descent rate?

Try different shapes (circle vs. square) and compare!