

# Forces: Air Resistance

<p><b>Aim:</b> To identify the effects of air resistance by investigating the best parachute to slow a person down.</p> <p>To investigate the effects of air resistance.</p>	<p><b>Success Criteria:</b> I can explain how air resistance affects moving objects.</p> <p>I can plan and conduct an investigation into the effects of air resistance.</p>	<p><b>Resources:</b> <b>Lesson Pack</b></p> <p>Plastic sheets, such as bin bags or plastic bags</p> <p>Paper</p> <p>Card</p> <p>String</p> <p>Sticky tape</p> <p>Objects to attach to the parachutes, e.g. paper clips, toy figures or modelling clay</p> <p>Measuring sticks</p> <p>Stopwatch</p>
	<p><b>Key/New Words:</b> Gravity, air resistance, Galileo Galilei, mass, parachute, force, prediction, investigation, measure, observe, variables, results.</p>	<p><b>Preparation:</b> Differentiated <b>Perfect Parachutes Activity Sheet</b> - one per child</p> <p>Differentiated <b>Super Skydiving Activity Sheet</b> - one per child</p>

**Prior Learning:** The children will have learnt about the opposing forces of gravity and air resistance in Lesson 1.

## Learning Sequence

	<p><b>Gravity and Falling:</b> Use the <b>Lesson Presentation</b> to explain that gravity causes objects of the same size and shape but of different mass to fall at the same rate. Discuss Galileo's experiment and how it proves this. (Children may find this hard to grasp as air resistance often causes objects with less mass to fall more slowly.) Children discuss how when a feather and a hammer fall on the Moon, they land at the same time due to no air resistance.</p>	
	<p><b>Air Resistance:</b> Use the <b>Lesson Presentation</b> to explain the effects of air resistance, and how this affects objects falling when on Earth. Children discuss the useful and unhelpful effects of air resistance using the diagrams on the <b>Lesson Presentation</b>.</p>	
	<p><b>The Perfect Parachute:</b> Explain the context of the investigation using the <b>Lesson Presentation</b>. Ensure children understand how to make their different parachutes. Children discuss the possible variables, then reveal the suggestions on the <b>Lesson Presentation</b>. They should make their own decisions about how to plan the experiment and record their choices and their prediction on the differentiated <b>Perfect Parachutes Activity Sheet</b>, then conduct their investigation. Children complete their results on the activity sheet. <i>Can children plan and carry out their own investigation into the effects of air resistance on different parachutes?</i></p> <p> Children are provided with prompts to complete the activity sheet.</p> <p> Children are provided with some prompts to help them complete the activity sheet.</p> <p> Children complete the activity sheet with minimal prompts and explain their prediction, referring to air resistance.</p>	
	<p><b>Super Skydiving:</b> Children come to their conclusion in the form of a report on the differentiated <b>Super Skydiving Report Activity Sheet</b>. <i>Can children explain the effects of air resistance on moving objects?</i></p> <p> Children use the key words to complete the sentences.</p> <p> Children complete the sentences and make a generalisation about the type of parachute that would create the most air resistance.</p> <p> Children write their own conclusion and generalisation.</p>	
	<p><b>Talk about It:</b> Challenge pairs to take it in turns to each talk for a minute about air resistance. How much can they explain about what they have learned?</p>	

**Taskit**

**Explore it:** Find out about different seeds that make use of air resistance to travel. Look at sycamore seeds or dandelion seeds.

**Researchit:** Find out more about the life and achievements of Galileo Galilei and create a fact file about him.

**Saveit:** Use the best parachute to save an egg! Attach an egg to the parachute by placing it in a plastic bag. Then let it fall from a height. Does your parachute create enough air resistance to slow the egg's fall and stop it breaking?