

# Forces: Gravity

<p><b>Aim:</b>          To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object by measuring the force of gravity pulling on objects.</p> <p>To explore the effect that gravity has on objects and how the first theory of gravity was developed.</p>	<p><b>Success Criteria:</b>          I can explain the effect of gravity on unsupported objects.</p> <p>I can explain Isaac Newton's role in developing a theory of gravity.</p> <p>I can accurately measure the force of gravity pulling on objects.</p>	<p><b>Resources:</b>  <b>Lesson Pack</b></p> <p>Newton meters</p> <p>Weighing scales</p> <p>Objects to be measured</p> <p>Clear bags with handles</p>
	<p><b>Key/New Words:</b>          Gravity, force, Isaac Newton, newton, newton meter, weight, mass.</p>	<p><b>Preparation:</b>  <b>Newton and Gravity Fact Sheet</b> - one per child</p> <p>Differentiated <b>Newton and Gravity Activity Sheet</b> - one per child</p> <p>Differentiated <b>Measuring Gravity Activity Sheet</b> - one per child</p>

**Prior Learning:** The children will have learnt about gravity as a pulling force in Lesson 1.

## Learning Sequence

	<p><b>Falling Down:</b> Drop a bouncy ball and ask children to discuss their ideas about gravity using the prompts on the <b>Lesson Presentation</b>. Explain the force of gravity using the information on the <b>Lesson Presentation</b>. Can children explain the effect of gravity on unsupported objects?</p>	
	<p><b>Discovering Gravity:</b> Children discuss any existing knowledge they have of Isaac Newton and discuss briefly how Isaac Newton developed his theory of gravity.. Children use the <b>Newton and Gravity Fact Sheet</b> to answer the comprehension questions on the differentiated <b>Newton and Gravity Activity Sheet</b>. Can children explain Isaac Newton's role in developing a theory of gravity?</p> <p>★ Children answer simpler, literal questions based on the Newton and Gravity Fact Sheet.</p> <p>★★★ Children answer more difficult questions, including some inferential questions, based on the Newton and Gravity Fact Sheet.</p>	
	<p><b>Weight and Mass:</b> Explain the difference between weight and mass, and how to measure them, using the information on the <b>Lesson Presentation</b>.</p>	
	<p><b>Measure the Force of Gravity:</b> Explain how children will measure the weight and mass of different objects using the <b>Lesson Presentation</b>. Children complete the differentiated <b>Measuring Gravity Activity Sheet</b> with their prediction, results and conclusion, and conduct the investigation in pairs. Can children measure the weight of objects? Can children explain that the weight of an object is caused by gravity pulling it down?</p> <p>★ Children use prompts to make their prediction. They use key words to fill in gaps in the explanation of gravity, weight and mass.</p> <p>★★ Children fill in gaps in the explanation of gravity, weight and mass.</p> <p>★★★ Children complete the blank labels on the diagrams.</p>	
	<p><b>Finding a Link:</b> Children discuss their results and try to spot a link between weight and mass. Explain the link using the <b>Lesson Presentation</b>.</p>	

**Taskit**

**Writeit:** Why not make a book all about gravity? Include pages on what gravity is, how Isaac Newton developed his theory about it, how it differs on different planets and how it gives objects their weight. Add pictures to make your book even more interesting.

**Makeit:** Make a poster to explain the force of gravity and its effects.