











# Measurement: Understanding Mass and Weight

<p><b>Aim:</b> Compare, describe and solve practical problems for weight and mass.</p> <p>To compare and describe the mass of objects.</p>	<p><b>Success Criteria:</b> I can use balance scales to compare the mass of objects. I can describe mass. I can reason about mass.</p>	<p><b>Resources:</b> <b>Lesson Pack</b> Beanbags Balance scales - one per pair/per group For whole class teaching: A small, heavy item (like a rock) A big, light item (like a balloon) Two identical water bottles, one full and one empty</p> <p><b>For independent work:</b> A range of lighter and heavier objects for children to weigh, including pairs of scissors and items lighter and heavier than the scissors Marbles and interlocking cubes Balance scales - one per pair/one per group Objects for comparing mass</p>
	<p><b>Key/New Words:</b> Heavy, heavier, light, lighter, lighter than, heavier than, heaviest, lightest, estimate, weight, mass, compare, describe, equally balanced.</p>	<p><b>Preparation:</b> Differentiated <b>Comparing Mass Activity Sheets</b> - one per child <b>Diving into Mastery Activity Cards</b> - as required</p>

**Prior Learning:** It will be helpful if children have some previous experience of using the vocabulary of 'heavy' and 'light'.

## Learning Sequence

	<b>Remember It:</b> The <b>Lesson Presentation</b> invites children to suggest the heaviest and lightest things they can think of and to consider why.	
	<b>Weight and Mass:</b> The <b>Lesson Presentation</b> introduces children to vocabulary that will help them describe mass.	
	<b>Balance Scales:</b> The <b>Lesson Presentation</b> demonstrates how balance scales can be used to compare the mass of objects.	
	<b>Compare Mass:</b> The <b>Lesson Presentation</b> shows objects on balancing scales. Invite the children to identify which items are heavier, lighter or have the same mass. Ask the children to explain how they know. <b>Can the children reason about mass?</b>	
	<b>Mass and Size:</b> The <b>Lesson Presentation</b> explores the concept of size not always being related to mass. Children discuss the images and suggest other examples where larger items are lighter, smaller objects are heavier and objects of the same size have different masses. Demonstrate this practically on real balance scales by comparing the mass of a rock and balloon then a full and an empty bottle. <b>Can the children describe mass? Can the children reason about mass?</b>	

	<p><b>Comparing Mass:</b> Children complete the differentiated <b>Comparing Mass Activity Sheets</b>, comparing and describing the mass of different items. Provide balance scales for children to use. <b>Can the children use balance scales to compare the mass of objects? Can the children describe mass? Can the children reason about mass?</b></p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="245 226 571 533">  <p>Children find two classroom items at a time to compare, then draw the items in a table to show which is heavier and which is lighter. Encourage children to discuss their work using mathematical vocabulary.</p> </div> <div data-bbox="627 226 952 589">  <p>Children find classroom items to compare with the mass of a pair of scissors. They draw the items on a table as either lighter or heavier than the pair of scissors. Encourage children to discuss their work using mathematical vocabulary.</p> </div> <div data-bbox="1008 226 1334 589">  <p>Children find and compare the mass of three classroom items at a time. They draw the items on a table in order from the lightest to the heaviest. Children complete sentences comparing the mass of the objects using mathematical vocabulary.</p> </div> </div>	
	<p><b>Diving into Mastery:</b> Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.</p> <div style="margin-bottom: 10px;">  <p>Children draw upon prior knowledge and use the visual clues to work out which object is the heaviest and which is the lightest. They consider how balance scales can be used to check this. They apply their understanding to describe the mass of objects shown on the balance scales using the vocabulary: heavier than, lighter than, heaviest, lightest, equal to.</p> </div> <div style="margin-bottom: 10px;">  <p>Children look at pictures of three objects on balance scales, considering which are heavier and which are lighter. They decide whether statements about them are true or false.</p> </div> <div>  <p>Children find objects that are heavier than a paintbrush but lighter than a book. Children then explain their reasoning as they discuss which of two objects is heavier. They discuss whether a statement is correct or not and prove it.</p> </div>	
	<p><b>True or False:</b> The <b>Lesson Presentation</b> invites children to decide if statements about mass are true or false. Encourage children to use mathematical vocabulary to explain their reasoning. <b>Can the children reason about mass?</b></p>	

**Explore it**

**Compare it:** For further practice on comparing 'heavy' and 'light',

**Challenge it:** Children challenge each other to find something that is heavier and something that is lighter than a given object.

**Scale it:** Make your own balance scales. Take two empty plastic pots and punch three holes in each. Tie a string through each hole. Hang a pot on either end of a coat hanger and hang the hanger on a door handle. What items can children find to balance in their scales?