

KS3 Maths

Measure: Weight

<p>Subject curriculum intent:</p>	<p>We want our pupils to be able to develop functional shape skills so that they can be as independent as possible in their adulthood. Depending on the cognitive ability of the pupil, our intention is that pupils are able to recognise 2D and 3D shapes in the environment. Students will begin to develop an understanding of measure and perimeter, using resources to begin to measure shapes.</p> <p>We want our pupils to...</p> <ol style="list-style-type: none">1. develop fluency in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate strategies to use time skills including mental methods, underpinned by mathematical concepts2. can solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios3. can reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language. <p>In all math lessons, teachers plan engaging lessons with the aim that pupils:</p> <ul style="list-style-type: none">• master skills in maths which they are then able to apply to a range of contexts within the school and home context• embed their new skills and understanding to a range of contexts; thus supporting application and progress in learning• acquire core mathematical skills to support their independence as they progress through the school• are able to apply their understanding; supporting them in other areas of the curriculum	
<p>End of KS3 intent/outcome</p>	<p>End of KS4 intent/outcome</p>	<p>End of KS5 intent/outcome</p>
<p>Students will be introduced to the key vocabulary linked to the topic. Students will be able to use balancing scales to identify and compare weights. Students will place two items into a scale and use key vocabulary to compare and order items based on their weights.</p>	<p>Students will continue to build on their learning from KS3. Students will continue to use balancing scales to compare and order weights of items. Students will begin to use cubes to measure the weight of given items and when ready, students will use digital scales to begin to recognise weights in grams and kilograms.</p>	<p>Students will continue to build on their KS4 knowledge. Students will continue to use measuring equipment to measure and order weights of items. Students will begin to use their measuring skills in a variety of different contexts. Students will be asked to select the equipment that they will need to weigh items before completing tasks with the equipment that they have selected.</p>
<p>Intent for this topic:</p>	<p>This half term, pupils will develop their measurement skills through the topic 'weight'. They will develop an understanding of how to measure and compare a range of weights e.g. non-standard, grams and kilograms. They will begin to understand how weighing skills can be applied in other areas of the curriculum such as cooking. They will develop their early measuring skills, including accuracy, that can developed as they move into KS4.</p> <p>Within this topic, pupils will also use and apply other mathematical skills such as number, addition, subtraction and statistics.</p>	

Key vocabulary taught within this topic:	Measure, weight, heavy/light, heavier/lighter, unit of measure, grams, kilograms, g, kg, digital scale, balance scale
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Links to other subjects:	<ul style="list-style-type: none"> - Cook-It - Food technology
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Measurement: Weight

	<u>B2 progression step 5</u>	<u>B2 progression step 6-8</u>	<u>B2NC step 1c-1b</u>	<u>B2NC Step 1b-2c</u>	<u>B2NC Step 2c-2a</u>	<u>B2NC Step 2a-3a</u>
<p>Subject specific knowledge</p> <p>What do pupils need to know?</p>	<p><u>To know/show</u> it takes more effort to move an item that is heavy e.g. push harder to move, only be able to hold one object at a time</p> <p><u>To know/show</u> it takes more effort to move an item that is light e.g. carry more objects, minimal effort to move or handle</p>	<p><u>To know</u> key words: heavy/light</p> <p><u>To know</u> the size of object does not always determine the weight e.g. bigger does not always mean heavier</p>	<p><u>To know</u> what a balance scale is and how to use it</p> <p><u>To know</u> the side of the balance that touches the table = heaviest and the side that lifts = lightest</p> <p><u>To begin to know</u> how to use non-standard units to measure objects using a balance scale</p>	<p><u>To know</u> how to use a digital scale to measure weight</p> <p><u>To know</u> we measure weight in grams / kilograms</p>	<p><u>To know</u> which is the correct standard unit for a measurement e.g. mm,cm,m,g,kg etc</p> <p><u>To know</u> how many grams are in a kilo</p>	<p><u>To know</u> how to break down a worded problem related to measure</p>
<p>Subject specific skills</p> <p>What do pupils need to be able to do?</p>	<p><u>Is beginning to</u> sort items into heavy and light from touch and feel alone; recognising a clear difference</p>	<p><u>Is able to</u> use every day language to talk about weight in context and through play</p> <p><u>Is beginning to</u> compare and describe</p>	<p><u>Is able to</u> use a balance scale to aid comparative vocabulary independently</p> <p><u>Is able to</u> predict which object will be</p>	<p><u>Is able to</u> measure amounts in grams (e.g. flour)</p> <p><u>Is able to</u> problem solve if they do not have enough or too much of what is being</p>	<p><u>Is able to</u> use and apply addition/subjectio n skills to problem solve how many more or less is needed to get to</p>	<p><u>Is able to</u> solve worded problems related to measure.</p> <p><u>Is able to</u> use and apply measure skills in everyday</p>

		weights of objects using heavy/light or heavier/lighter	heavier/lighter and then use the balance scale to check independently. <u>Is able to add</u> measuring cubes to a balance scale, beginning to understand when to stop adding when the scale is balanced	measured e.g. add more or take away	the desired weight <u>Is able to compare</u> and order weights (use and apply number skills)	situations confidently e.g measuring in cooking
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<p><u>Suggested teaching activities</u></p> <p>How should I teach this?</p>	<ul style="list-style-type: none"> • Sorting objects into heavy and light 	<ul style="list-style-type: none"> • Role play situations with comparative language • Use clearly different weights for heavy and light to distinguish the difference. Put these in bags - pupils to hold one in each hand and role play the balance scale 	<ul style="list-style-type: none"> • Balance weights / hold weights and compare • Predictions • Problem solving: Does bigger always mean heavier? 	<ul style="list-style-type: none"> • Cooking lessons. Measuring ingredients. • Practise being accurate 	<ul style="list-style-type: none"> • Cooking lessons • Sabotage - giving too much or too little and pupils need to use and apply number skills 	<ul style="list-style-type: none"> • Cooking lessons • Reading measurements on backs of packages
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