

KS5 Maths

Measure- Capacity & Weight

<p>Subject curriculum intent:</p>	<p>We want our pupils to be able to develop functional measurement 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 consider capacity and weight when planning ahead for things such as cooking and cleaning. Students will use their understanding of capacity and weight when in a variety of contexts such as following a recipe when baking or cooking.</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 measuring 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>Students will be introduced into key vocabulary linked to capacity and weight. Students will be able to use balancing scales and key vocabulary to compare weight and describe weight. Where appropriate, pupils will begin to move onto using standard units to measure weights. Students will develop skills in measuring liquids using non-standard and standard units, again using comparative language and key vocabulary to compare and describe capacities.</p>	<p>End of KS4 intent/outcome</p> <p>Students continue to build on their learning from key stage 3. Students will be more confident in weighing different items. Where appropriate, students will use grams and kilograms to measure and compare weight. They will have a better understanding of how these skills transfer to their cooking lessons such as Cafe baking. Students will also be more confident in measure capacities in millilitres/litres, again understanding how these skills are needed to measure liquids when cooking.</p>	<p>End of KS5 intent/outcome</p> <p>Students will have embedded measuring skills according to their ability 'level'. Students will confidently apply measuring skills when working at the Cafe, self-catering and within the Pie manufacturing business. Pupils will be able to gather and weight all ingredients needed for their recipe, identifying which measuring equipment is needed dependant on the ingredient needing to be measured.</p>

Intent for this topic:	This half term, pupils will build on their knowledge of capacity and weight from the KS3 and KS4 Curriculums. Pupils will access discrete Maths lessons where they will further develop knowledge and skills linked to capacity and weight, starting at their last learning point in the topic from the previous key stage. Pupils will be more confident in identifying and using these skills in wider contexts and understand how these skills will important in their adulthood. Pupils will be learning how to apply their knowledge and understanding of measuring to be able to consider how to plan and make healthy meals and follow a recipe.
Key vocabulary taught within this topic:	Measure, capacity, weight, killograms, grams, millilitres, litres, g, kg, L, ml, tablespoon, teaspoon, balanace, scale, jug, heavier than, lighter than, full, nearly full, half full, nearly empty, empty, more, less
Links to other subjects:	-Design technology (manufacturing candles and pottery) -Pie manufacturing -Cafe -Self catering

Suggested flow:

This flow is to be used as a guide. Teachers to adapt the flow to meet the needs and abilities of students within their class.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
L1: Preassessment of weight and capacity understanding. <u>Weight</u> L2 onwards:	<u>Weight</u> Compare and calculate Look at measuring equipment to weight a variety of items or ingredients.	<u>Capacity</u> Developing and embedding skills. Measuring liquids (non-standard/millilitres/ litres)	<u>Capacity</u> Compare and calculate Look at measuring equipment to	<u>Use and apply</u> Pupils to follow recipes for things they enjoy to eat/drink at home. Pupils to do this as independently as possible	

Developing and embedding skills. Measuring weight (non-standard/grams/kilograms)	Add weights together / subtract weights when they have too much		measure a variety of liquid ingredients Add volumes together / subtract volumes when they have too much	Pupils to have opportunities to problem solve as they do this.
	Addition & subtraction skills		Addition & subtraction skills	Addition & subtraction skills Problem solving skills

	B2 P5	B2 P6-8	B2 step 1c-1b	B2 Step 1b-2c	B2 Step 2c-2a	B2 Step 2a-3a
Subject specific knowledge	<u>To know</u> key words: heavy/light/full/empty	<u>To know</u> key words: heavy/light/full/empty/ nearly full/nearly empty	<u>To know</u> what a balance scale is and how to use it	<u>To know</u> kg and g are units to measure weight	<u>To know</u> which is the correct standard unit for a measurement e.g. mm,cm,m,g,kg etc	<u>To know</u> how to break down a worded problem related to measure
What do pupils need to know?	<u>To know</u> to place objects next to each other to accurately compare inc. from same starting point	<u>To know</u> the size of object does not always determine the weight e.g. bigger	<u>To know</u> the side of the balance then touches the table = heaviest and the side that lifts = lightest	<u>To know</u> you can measure liquids using cups and know each cup must be full for accuracy.	<u>To know</u> what measuring tool is needed to	

		does not always mean heavier		<p><u>To know</u> a measuring jug measures liquids</p> <p><u>To know</u> liquid is measured in ml and l</p> <p><u>To know</u> how to use a measuring jug accurately: go to eye level and pour slowly.</p>	<p>measure something specific</p> <p><u>To know</u> that some ingredients are measured in tablespoons and teaspoons</p>	
<p><u>Subject specific skills</u></p> <p>What do pupils need to be able to do?</p>	<p><u>Is able to</u> find heavy and light objects on request.</p> <p>Experience comparing weights by placing objects next to each other.</p> <p><u>Is able to</u> indicate which of two jugs is the bigger.</p> <p>Experience comparing capacities by placing jugs next to each other</p>	<p><u>Is able to</u> use every day language to talk about size in context and through play: Weight, capacity,</p> <p><u>Is beginning to</u> compare quantities of object e.g. knows whether they have more or less biscuits than their friend</p> <p>Is beginning to compare and describe weights of objects using heavy/light</p> <p>Is beginning to compare and describe capacities using full/empty</p>	<p><u>Is able to</u> measure weight using cubes</p> <p><u>Is able to</u> use a balance scale to aid comparative vocabulary independently</p>	<p><u>Is able to</u> compare and describe capacity using 'half full/quarter full/empty' vocabulary</p> <p><u>Is able to</u> solve practical problems for weight and capacity.</p> <p><u>Is able to</u> count out number of cups taken to fill a container</p> <p><u>Is beginning to</u> use a measuring jug by reading the numbers in ml and attempting to measure this out with some accuracy</p>	<p><u>Is able to</u> use standardised measuring tools to measure capacity or weight</p> <p><u>Is able to</u> compare and order measurements (ml, g etc)</p>	<p><u>Is able to</u> solve worded problems related to measure.</p>
<p><u>Suggested teaching activities</u></p>	<ul style="list-style-type: none"> Using number of cups to measure liquids Link to fractions and ratios to create different drinks when measuring e.g. 50ml of apple juice, 50ml of orange juice and 50ml of pineapple juice to create of fruit juices Link barista work in how different coffees are made with different measures of coffee, milk and syrups 					

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| | <ul style="list-style-type: none">• Weighing ingredients before starting to follow the recipe when completing self-catering. Which equipment would be best to measure each ingredient. |
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