KS4 Maths
Measure: Weight

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, PSHCE (health and weight) and vocational lessons. They will build on skills embedded from KS3, starting at their last learning point and developing further measurment (weight) skills from this..

Within this topic, pupils will also use and apply other mathematical skills such as number, addition, subtraction and statistics.

Pupils:

1. develop **fluency** in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate strategies to **measure weight** including mental methods, underpinned by mathematical concepts
2. can **solve problems by** applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
3. can **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

In all math lessons, teachers plan engaging lessons with the aim that pupils:

- 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

Keywords

Measure, weight, heavy/light, heavier/lighter, unit of measure, grams, kilograms, g, kg, digital scale, balance scale

Cross curricular links:

-Food technology
-PSHCE
-Vocational

Measurement: Weight

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

			Is able to add measuring cubes to a balance scale, beginning to understand when to stop adding when the scale is balanced		(use and apply number skills)	

Suggested teaching activities **How should I teach this?**	• Sorting objects into heavy and light	• 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	• Balance weights / hold weights and compare • Predictions • Problem solving: Does bigger always mean heavier?	• Cooking lessons. Measuring ingredients. • Practise being accurate	• Cooking lessons • Sabotage – giving too much or too little and pupils need to use and apply number skills	• Cooking lessons • Reading measurements on backs of packages