

Curriculum Intent Maths: Key Stage 3 & 4 2025 - 2026

At Compass School, Mathematics offers pupils the tools for making sense of the world around them through developing their skills in: pattern spotting, problem solving, and basic numeracy skills for surviving in the adult world (skills for life). This is facilitated by incorporating key vocabulary in every Maths lesson to enhance mathematical communication and by using a variety of resources, including manipulatives and technology, to help pupils visualise and understand abstract mathematical concepts. At Compass School, all pupils are assessed on entry, and the curriculum is differentiated to address any gaps in knowledge. We foster positive "can-do" attitudes and promote that we can all do maths. We aim for our pupils to become fluent in the fundamentals of mathematics, and they think and reason logically. All pupils are challenged and encouraged to excel in mathematics to recognise this subject's importance in the wider world. Pupils leave Compass School equipped with the knowledge and competence to deal with mathematical problems they might face in their lives and future careers.

By the end of Key Stage 3, pupils are expected to build on their skills and knowledge from Key Stage 2 and continue to develop further their understanding of number, algebra, geometry and measures, data handling and statistics, probability, ratio and proportion and solve increasingly complex problems through reasoning and mathematical communication.

By the end of Key Stage 4, pupils are expected to build on their skills and knowledge from Key Stage 3 and consolidate their skills and knowledge in number and algebra, geometry and measures, data handling and statistics, ratio, proportion and rates of change, probability to reason mathematically and persevering in seeking solutions to variety of problems.

Skills and Knowledge Key Stage 3 & Key Stage 4

Every half term, we ensure that we offer cross curricular (Cc) opportunities to our pupils as well as covering Social, Moral, Spiritual and Cultural (SMSC) elements. These are detailed below using the following codes, enabling us to track what is delivered in each subject:

Cross Curricular Links include: M (Maths), Eng (English), Sc (Science), PS (PSHE), FT (Food Tech), CR (Craft), AD (Art & Design), C (Computing), G (Geography), H (History), En (Engineering), R (Reading), Ec (Economics), WoW (World of Work)

SMSC Links include: B (British Values), Sp (Spiritual aspects), M (Moral aspects), So (Social aspects), C (Cultural aspects), R (Religious aspects), Rel (Relationships), P (Prevent), E (E-Safety), I (Individual Advice & Guidance & Careers), H (Healthy Lifestyle including wellbeing)

	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT1	Number SMSC - C, I, M, So, CC - Sc, FT, CR, AD, C, En, Ec, WoW	Solving problems involving value of digits in decimals, measure and integers Rounding numbers to required degree of accuracy Estimating Recognising and working with multiples, factors, roots and squares Recalling times tables Performing all 4 operations with whole numbers and decimals using written methods Applying BIDMAS when solving any tasks Calculating with money including solving multi step problems and using inverse operations to check answers where appropriate Calculating with basic fractions and percentages	Place value Properties of number Rounding and Estimation Arithmetic procedures with integers, fractions and decimals Percentages	Number SMSC - C, I, M, So, CC - Sc, FT, CR, AD, C, En, Ec, WoW	Solving problems involving place value with very large or very small numbers and decimals Recognising and working with prime numbers, factors, multiples, roots and squares Recalling times tables Performing prime factor decomposition and finding LCM and HCF Ordering positive and negative integers using an inequality symbol Performing all 4 operations with whole numbers, decimals, negatives and fractions Applying BIDMAS when solving any tasks Checking calculation using estimation, rounding and approximation Rounding numbers and measures to an appropriate degree of accuracy Calculating with and interpreting standard form Solving multi steps problems including problems in real life context Calculating with fractions, decimals and percentages	Place value Properties of number Arithmetic procedures with integers, decimal and negatives Prime factor decompositions Estimation Approximation Standard form Fractions Percentages
	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT2	Algebra SMSC - C, I, So, CC - Sc, C, Ec,	Using letters to represent generalised number Forming and writing expressions Identifying like terms in expressions Simplifying expressions Manipulating algebraic expressions Taking out common factors Forming and writing equations Solving equations Recalling times tables Solving multi step problems, including problems in a real life context and using inverse operations to check answers where appropriate	Vocabulary of algebra Algebraic notation Expressions Simplification Factorisation Equations Substitution	Algebra SMSC - C, I, So, CC - Sc, C, Ec	Forming and writing expressions Simplifying algebraic expressions by collecting like terms, expanding and factorising including the law of indices Manipulating algebraic expressions including rearranging formulae to change the subject Solving equations with unknown on both sides Solving two simultaneous equations Solving quadratic equations Recalling times tables Solving multi steps problems including real life problems and using inverse operation to check answers where appropriate Recognizing and using sequences	Vocabulary of algebra Algebraic notation Expressions Simplification equations Substitution Rearranging Simultaneous equation Quadratic equation

	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT3	<p>Geometry</p> <p>SMSC - C, I, So,</p> <p>CC - AD, FT, C, CR, G, R</p>	<p>Plotting in all 4 quadrants</p> <p>Describing coordinates</p> <p>Plotting simple straight-line graphs</p> <p>Calculating and interpreting gradient</p> <p>Recalling times tables</p> <p>Converting units of measure</p> <p>Solving multi step perimeter area problems including problems in a real-life context and using inverse operations to check answers where appropriate</p>	<p>Coordinates</p> <p>Straight line graphs</p> <p>2D shapes and their properties</p> <p>Concept of perimeter</p> <p>Concept of area</p>	<p>Geometry</p> <p>SMSC - C, I, So,</p> <p>CC - AD, FT, C, CR, G, R</p>	<p>Calculating the nth term of a linear sequence</p> <p>Plotting in all 4 quadrants</p> <p>Solving geometrical problems on coordinates axes. Drawing straight line graphs</p> <p>Identifying and interpreting gradients and intercepts of linear functions. Solving linear equations with one unknown algebraically</p> <p>Recalling times tables</p> <p>Changing freely between related standard units</p> <p>Calculating the perimeter and area of 2d shapes and compound shapes, including circles</p> <p>Solving multi steps problems including problems in real life context and using inverse operations where appropriate</p>	<p>Coordinates</p> <p>Straight line graphs</p> <p>Concept of gradient and intercept</p> <p>2D shapes and their properties</p> <p>Compound shapes</p> <p>Concept of perimeter</p> <p>Concept of area</p>
	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT4	<p>Geometry and Number</p> <p>SMSC - C, I, So</p> <p>CC - Sc, FT, CR, AD, C, G, Ec, R</p>	<p>Calculating surface area</p> <p>Calculating volume</p> <p>Solving multi step problems including problems in a real-life context and using inverse operations to check answers where appropriate</p> <p>Recalling times tables</p> <p>Working interchangeably with decimals, percentages and fractions</p> <p>Converting fractions to decimals and percentages and vice versa</p> <p>Calculating with fractions and percentages</p>	<p>Surface area</p> <p>Concept of volume</p> <p>Concept of fraction</p> <p>Operations with fractions</p> <p>Percentages</p>	<p>Geometry and Number</p> <p>SMSC - C, I, So</p> <p>CC - Sc, FT, CR, AD, C, G, Ec, R</p>	<p>Calculating missing angles in 2d shapes including circles and polygons</p> <p>Recalling times tables</p> <p>Calculating surface area and volume of 3D shapes including prisms</p> <p>Solving multi steps problems including problems in real life context and using inverse operations where appropriate</p> <p>Identifying, describing and constructing shapes by rotating, reflecting, translating or enlarging</p> <p>Calculating with percentages</p> <p>Calculating with fractions</p>	<p>Angle principles</p> <p>Circle theorems</p> <p>Surface area</p> <p>Concept of volume</p> <p>Transformation</p> <p>Concept of fraction</p> <p>Operations with fractions</p> <p>Percentages</p>
	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT5	<p>Ratio, Proportion and Percentages</p> <p>SMSC - I, M,</p> <p>CC - AD, FT, CR, Sc, C, En, WoW</p>	<p>Sharing money in a given ratio</p> <p>Solving problems where values change, giving a new ratio</p> <p>Recalling times tables</p> <p>Solving proportion problems using unitary methods</p> <p>Finding percentage of amounts</p> <p>Calculating percentage increase and/or decrease</p> <p>Finding percentage change</p> <p>Calculating simple interests</p> <p>Solving multi step problems including problems in a real-life context and using inverse operations to check answers where appropriate</p>	<p>Concept of ratio</p> <p>Concept of proportion</p> <p>Reverse ratio</p> <p>Units</p> <p>Percentages</p> <p>Simple interest</p>	<p>Ratio, Proportion and Percentages</p> <p>SMSC - I, M,</p> <p>CC - AD, FT, CR, Sc, C, En, WoW</p>	<p>Identifying and working with fractions in ratio problems</p> <p>Applying ratio to solve problems in real context</p> <p>Using proportion as an equality to ratio</p> <p>Recalling times tables</p> <p>Solving problems involving direct and inverse proportion</p> <p>Calculating with percentages including compound interests and reverse percentages</p> <p>Y11- Revision opportunities</p>	<p>Direct and inverse proportion</p> <p>Reverse percentages</p> <p>Compound interests</p>
	Key Stage 3 Topics	Key Stage 3 Skills	Key Stage 3 Knowledge	Key Stage 4 Topics	Key Stage 4 Skills	Key Stage 4 Knowledge
HT6	<p>Number</p> <p>SMSC - M, C, I,</p> <p>CC - Sc, PS, FT, C, H, R, WoW</p>	<p>Recognising odd and even numbers up to 50</p> <p>Recognising odd and even numbers up to 100</p> <p>Counting to 100 in 2s</p> <p>Recognising patterns in counting in 2s</p> <p>Being able to double or halve a set of objects (Concrete and Pictorial)</p> <p>Being able to double or halve a set</p>	<p>Odds / Evens</p> <p>Doubling / Halving</p>	<p>Number</p> <p>SMSC - M, C, I, So, H,</p> <p>CC - C, Sc, PS, FT, C, En, Ec, H, R, WoW</p>	<p>Recognising and writing fractions of an amount</p> <p>Converting between fractions</p> <p>Using all four operations to calculate with fractions</p> <p>Recognising the place value of decimals</p> <p>Comparing and ordering decimals</p> <p>Rounding of decimals</p> <p>Recalling times tables</p>	<p>Fractions</p> <p>Decimals</p> <p>Percentages</p>

		amount (Abstract)			Using percentages up to 100 to describe an amount Finding percentages of an amount Converting between fractions, decimals and percentages Solving multi step problems, including problems in a real-life context and using inverse operations to check answers where appropriate	
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