

Year 8 Maths Curriculum Map

Curriculum Vision	Mathematics develops resilience, logical reasoning, and confidence in problem solving, equipping students with essential analytical and quantitative skills to tackle real-world challenges such as managing finances, interpreting data, and understanding technology. It supports informed decision-making and enables learners to engage with global issues including climate change, public health, and economic inequality. Through analysing and interpreting data, students are empowered to recognise and challenge societal inequities, fostering fairness and equity. At the same time, mathematics inspires curiosity by revealing patterns and structures that underpin the modern world. Ultimately, it combines practical relevance with intellectual depth, preparing learners to contribute meaningfully to their communities and wider society.		
Domains of Knowledge	• Number • Algebra	• Geometry • Ratio	• Statistics • Problem Solving
End points (KS3)	Number – Students will confidently use integers, decimals, fractions, and percentages in calculations and problem solving. They will apply place value, rounding, and estimation strategies, work with powers and roots, and use standard form for large and small numbers. Students will fluently convert between number forms and apply the four operations in both mathematical and real-life contexts with accuracy and efficiency. Algebra – Students will confidently manipulate algebraic expressions, including expanding, factorising, and rearranging. They will solve linear and quadratic equations, work with inequalities, and interpret and generate sequences. Students will represent relationships using graphs, including straight lines and quadratics, and apply algebra to model and solve problems in a range of contexts. Geometry – Students will confidently solve problems involving 2D and 3D shapes, including perimeter, area, surface area, and volume. They will apply angle rules, use geometric transformations, and interpret scale drawings, plans, and elevations. Students will apply Pythagoras’ Theorem and trigonometry, solve problems using circle geometry, and construct and interpret loci and bearings. They will also use vector notation and apply similarity and congruence to solve geometric problems with precision. Ratio – Students will simplify and use ratios and proportions in a variety of contexts, including scaling and recipe problems. They will solve problems involving multiplicative reasoning, including percentages, exchange rates, and compound measures such as speed, density, and pressure. Students will apply proportional reasoning across different topics including geometry and algebra. Statistics – Students will collect, represent, and interpret data using tables, charts, and graphs including bar charts, stem-and-leaf diagrams, and grouped frequency tables. They will calculate and interpret mean, median, mode, and range, and estimate averages from grouped data. Students will also evaluate the reliability of data through sampling and summary statistics. Problem Solving – Students will apply mathematical skills to unfamiliar, multi-step problems, selecting appropriate strategies and justifying their methods. They will link concepts across topics, interpret real-world scenarios mathematically, and communicate solutions clearly using accurate reasoning, representations, and notation. Students will check their work for accuracy and reflect on alternative approaches.		

Term	Weeks	Domain	Key Concepts	Broken Down Knowledge
Y8 Autumn 1	3	Geometry	12a Pythagoras and trigonometry	Apply Pythagoras’ Theorem and trigonometric ratios to find missing sides and angles in right-angled triangles.
Y8 Autumn 1	3	Statistics	13a Probability	Use set notation, tree diagrams, Venn diagrams and sample spaces to calculate theoretical and experimental probabilities.
TOPIC TEST 1 covering Unit 12 & 13				
Y8 Autumn 2	3	Ratio & Proportion	14a Percentages, rates of change, compound measures	Solve problems involving compound measures, percentages, reverse percentages, and exchange rates.
Y8 Autumn 2	1	Geometry	15a Plans and elevations	Interpret and construct front, side, and plan views of 3D shapes.

Y8 Autumn 2	3	Geometry	15b Constructions, loci and bearings	Use scale drawings, bearings, and perform ruler and compass constructions and solve loci problems.
TOPIC TEST 2 covering Unit 14 & 15				
Y8 Spring 1	2	Algebra	16a Quadratic equations: expanding and factorising	Expand and factorise quadratic expressions, solve quadratic equations using factorisation.
Y8 Spring 1	1	Algebra	16b Quadratic equations: graphs	Plot and interpret quadratic graphs and use them to solve equations and find turning points.
Y8 Spring 1	3	Geometry	17a Circles, cylinders, cones and spheres	Calculate circumference and area of circles and volumes/surface areas of cylinders, cones, and spheres.
TOPIC TEST 3 covering Unit 16 & 17				
Y8 Spring 2	1	Number	18a Fractions	Add, subtract, multiply and divide mixed and improper fractions.
Y8 Spring 2	1	Number	18b Indices and standard form	Use index laws and standard form to perform calculations with large and small numbers.
Y8 Summer 1	1	Geometry	19a Similarity and congruence in 2D	Use scale factors and congruence criteria (SSS, SAS, ASA, RHS) to solve problems in 2D geometry.
Y8 Summer 1	1	Geometry	19b Vectors	Use vector notation to describe translations and solve geometric problems with vectors.
TOPIC TEST 4 covering Unit 18 & 19				
Y8 Summer 2	2	Algebra	20a Rearranging Formulae	Rearranging and manipulating algebraic formulas, including changing the subject and working with powers, roots, and fractions.
Y8 Summer 2	2	Algebra	20a Algebraic Graphs	Understanding and using linear and quadratic graphs by finding gradients, writing equations, plotting points, and interpreting relationships.
Y8 Summer 2	2	Algebra	20a Simultaneous Equations	Solving pairs of equations using graphical, elimination, and substitution methods to find points of intersection.
TOPIC TEST 5 covering Unit 20				
Assessment	Assessment is embedded throughout the curriculum, with topic tests conducted every 2–3 units. Each test lasts 40 minutes and is composed of a combination of 1-mark knowledge and recall questions alongside longer, multi-mark problem-solving questions. While summative in nature, these assessments are also used formatively to inform future teaching; they assess recently taught content alongside key concept retrieval questions (such as directed numbers, percentages, and algebraic simplification) to support long-term retention, and teachers use the outcomes to revisit common areas of need identified across the class. Following each test, students receive a Question Level Analysis (QLA) that clearly identifies strengths and areas for development by topic, with Dr Frost website codes linked directly to support videos and practice. In addition, formative assessment takes place in every lesson through common Do It Now tasks, which focus on key concepts such as directed numbers, fractions–decimals–percentages, and algebraic basics. These tasks run for four weeks before changing to ensure interleaving of topics and promote long-term retention, alongside the use of mini whiteboards to regularly check understanding and enable timely reinforcement or reteaching.			