

Year 8 Mathematics Curriculum

Year 8 learning is built upon the mathematical foundations established in Year 7. All students work to develop a deep and connected understanding of Mathematics, develop procedural fluency and conceptual understanding in tandem and to develop fluent knowledge of key facts and techniques. All students are expected to practise, be resilient and persevere when approaching all areas of Mathematics.

Unit:	Core knowledge/skill development:	Sequence:	Assessment:	Literacy, numeracy, PSHE, FBV, other links	ACP and VAA development:	Home learning and enrichment
Ratio	Understand and use ratio notation. Divide into a given ratio. Work out parts and wholes. Use Pi as a ratio.	Leading to scale factors and proportion, unit pricing, compound measures.	End of block assessment	Knowledge organisers with key words	Meta thinking using strategies to solve problems. Analysing and logical thinking. Linking.	Mymaths. Worksheets. Challenges.
Scale and proportion	Use scale factors, currency conversion graphs, direct proportion graphs. Similar shapes	Building on ratio. Leading to scale drawing and inverse proportion	End of block assessment	Knowledge organisers with key words	Meta thinking using strategies to solve problems. Analysing and logical thinking. Linking.	Mymaths. Worksheets. Challenges.
Multiply and divide fractions	Multiplying and dividing fractions and mixed numbers	Building on four operations using integers and adding and subtracting fractions Leading to working with powers and roots and exact values	End of block assessment	Knowledge organisers with key words	Meta thinking using strategies to solve problems. Analysing and logical thinking. Linking.	Mymaths. Worksheets. Challenges.
Cartesian plane	Working with co-ordinates in all four quadrants. Drawing straight line graphs	Building on year 6 plotting co-ordinates in one quadrant.	End of block assessment	Knowledge organisers with key words	Meta thinking: knowing how to plot and read graphs and check for errors.	Mymaths. Worksheets.

Unit:	Core knowledge/skill development:	Sequence:	Assessment:	Literacy, numeracy, PSHE, FBV, other links	ACP and VAA development:	Home learning and enrichment
		Building on year 7 sequences, year 8 term 1 ratio Leading to working with straight line graphs Building on sequences, ratio and proportion, substitution. Leading to finding gradients and equations of lines and use of algebra. Working with non-linear graphs.			Linking: Sequences, proportion and straight line graphs Analysing: Understanding that the gradient has a meaning e.g. conversion rate Creating: Exploring how graphs change when the gradient or y-intercept changes and why.	Challenges.
Representing data	Plotting and interpreting scatter graphs and using lines of best fit. Identify discrete and continuous data. Use ungrouped and grouped frequency tables.	Building on linear graphs. Building on linear and non linear sequences and co-ordinate work Building on completing tables and estimation. Leading to averages from tables.	End of block assessment	Knowledge organisers with key words	Realising: Automaticity of being able to plot and interpret data from graphical representations	Mymaths. Worksheets. Challenges.

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Tables and probability	Sample space diagrams and calculating probabilities	Building on completing tables and finding basic probabilities	End of block assessment	Knowledge organisers with key words		Mymaths. Worksheets. Challenges.
Brackets Equations and Inequalities	Expanding brackets. Solving equations with brackets Solving simple inequalities	Building on year 7 work on algebraic notation, equality and equivalence Leading to Trinomials and solving quadratic equations with the formula	End of block assessment	Knowledge organisers with key words	Metathinking: identify steps required to solve problems with forming and solving inequalities and equations. Linking: to be able to solve equations and inequalities using basic operations and the order of operations. Realising: spot mistakes when form and solve equations and inequalities. Recall step: using inverse operations.	Mymaths. Worksheets. Challenges.
Sequences	Generating sequences Finding the nth term rule	Building on year 7 linear and non-linear sequences work. Leading to quadratic sequences	End of block assessment	Knowledge organisers with key words	Metathinking: identify steps required to find rules of a complex sequence and steps for problem solving.	Mymaths. Worksheets. Challenges.

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					Linking: being able to use operations and inverse operations. Realising: spotting pattern when working out nth term rule. Recall step: calculate accurately	
Indices	Using the four operations with expressions with indices. Rules of indices Explore powers of powers	Building on collecting like terms Leading to working with powers, fractional and negative indices	End of block assessment	Knowledge organisers with key words	Metathinking: identify how the addition and subtracting rules work in terms of problem solving context. Linking: use indices rules in different areas of maths Realising: be able to spot mistakes when using addition and subtracting indices and simplify algebraic expressions. Recall: four operations	Mymaths. Worksheets. Challenges.
Fractions and percentages	1.Develop understanding of FDP	Building on work done in year 7 on place value and	End of block assessment	Knowledge organisers with key words	Automaticity, building on previous work to embed these fundamental skills.	Mymaths. Worksheets.

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	2.Evaluate percentage increase and decrease 3.Use multipliers to solve percentage problems 4.Express one number as a percentage of another	simple fraction and decimal equivalence, leading to working with percentages.			Meta thinking, transferring knowledge from other known facts.	Challenges.
Standard form	1.Convert between numbers in standard and ordinary form 2.Compare numbers given in standard form 3.Calculate with numbers in standard form with and without a calculator	Building on work done in year 7 on powers of 10. Leading to calculations with standard form	End of block assessment	Knowledge organisers with key words	Analysing, precision and linking. Using skills from powers of 10 to be able to calculate precisely with very large and very small numbers	Mymaths. Worksheets. Challenges.
Number sense	1.Develop mental strategies 2.Convert between metric measures and units 3.Estimation, including rounding to	Building on mental arithmetic in year 7, developing a deeper understanding of how and why strategies work.	End of block assessment	Knowledge organisers with key words	Automaticity, building on previous work to embed these fundamental skills. Meta thinking, transferring knowledge from other known facts.	Mymaths. Worksheets. Challenges.

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	a given number of decimal places 4. Use the order of operations	Building on metric measures from primary. Leading to work with significant figures, estimation and BIDMAS				
Angles in parallel lines and polygons	1. Review year 7 angle rules 2. Understand and use parallel lines and angles 3. Revisit geometric notation 4. Work out angles in special quadrilaterals 5. Find and use the sum of interior and exterior angles of a polygon 6. Prove simple geometric facts	Building on angle proofs, sum of angles on a straight line and around a point. Leading to application of angle facts to a variety of problems.	End of block assessment	Knowledge organisers with key words	Metacognition, transferring knowledge of angles to various problems. Analysing, using knowledge of angles to solve geometric problems.	Mymaths. Worksheets. Challenges.