

Key Stage 3 Curriculum Map : Maths

	Autumn 1		Autumn 2	
Year 7	Place Value	Properties of Number	Arithmetic	
	Place value in integers, decimals and working with powers of 10. Ordering and comparing numbers. Converting and comparing measurements.	Multiples, powers and roots. Factorisation and prime factorisation, including highest common factor and lowest common multiple.	Four operations with negative numbers and decimals. Know and use the commutative, associative and distributive laws. Calculate using the priority of operations and calculator fluency.	
	Spring 1		Spring 2	
	Expressions and Equations	Coordinates	Perimeter and Area	
	Understand and use algebraic notation. Understand and use algebraic terminology. Simplifying expressions, expanding and factorising brackets.	Plotting coordinates. Coordinates, formulae and graphs.	Properties of quadrilaterals and triangles. Perimeters and areas of polygons. Perimeters and areas of composite polygons.	
	Summer 1		Summer 2	
	Fractions	Ratio and Proportion	Transformations	
	Working with fractions and decimals. Comparing and ordering fractions and decimals, including negatives. Four operations with fractions and mixed numbers.	Multiplicative relationships and their representations. Fractions in context. Applying ratios.	Recognise, describe and conduct translations, rotations and reflection. Scale drawings, plans and elevations, and isometric drawings. Recognise, describe and conduct enlargements.	
	Common fortnightly homework assignments which test skills and problem solving from any topic across prior taught material, questions for mastery to formatively assess progress. Common class tests will be issued to test curriculum knowledge.			

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	Autumn 1		Autumn 2	
Year 8	Estimation and rounding	Solving linear equations	Sequences	Linear graphs
	Rounding to decimal places. Rounding to significant figures. Estimation.	Solutions to linear equations. One-step linear equations. Two-step linear equations. Linear equations with brackets and fractions.	Features of sequences. Arithmetic sequences. Generating sequences and finding the nth term of arithmetic sequences.	Connecting coordinates, equations and graphs. Linear relationships. Gradients, y-intercepts and equations of linear graphs.
	Spring 1		Spring 2	
	Percentages and proportionality		Statistics	
	Converting between percentages, fractions and decimals. Calculating percentage change, calculating change as a percentage and calculating reverse percentage change. Understand and recognise direct proportion. Solve problems involving direct proportion. Understand and recognise inverse proportion.		Grouped frequency tables, ungrouped frequency tables, bar charts, pictograms and scatter graphs. Construct and interpret pie charts. Calculating mean, median, mode and range of ungrouped data. Calculating the estimated mean, median class, modal class and maximum range of grouped data.	
	Summer 1		Summer 2	
	Perimeter, area and volume	Polygons and angles	Constructions	
	Circumference and area of a circle. Area and perimeter of compound shapes. Surface area of cubes, cuboids, prisms and cylinders. Volume of cubes, cuboids, prisms and cylinders.	Angles at a point, angles on a straight line and vertically opposite angles. Corresponding and alternate angles. Angles in a triangle, including proofs. Interior and exterior angles of regular polygons.	Construct a circle, triangle and rhombus using a ruler and compasses. Construct a perpendicular bisector of a line segment, a perpendicular to a given line from a given point, and an angle bisector, using a ruler and compasses.	
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	Autumn 1		Autumn 2	
Year 9	Similarity and congruence	Pythagoras' theorem	Probability	
	Notation and labelling of triangles and polygons. Identifying similar shapes and finding missing sides and angles in similar shapes. Identify congruent shapes and know tests for congruent triangles.	Know Pythagoras' Theorem and recognise Pythagorean triples. Solve problems to find missing lengths in 2D shapes using Pythagoras' Theorem. Work out if a triangle is right-angled using the converse of Pythagoras' Theorem. Use Pythagoras' Theorem to solve problems in context using right-angled triangles. Use Pythagoras' Theorem on a coordinate grid.	Understand and use that the probabilities of all possible outcomes sum to one. Calculate and use probabilities for single events. Understand how the probability of an outcome can be estimated using experiments. Work out probabilities for combined events using sample-space diagrams, two-way frequency tables and Venn diagrams.	
	Spring 1		Spring 2	
	Non-linear sequences	Expressions and formulae	Trigonometry: The unit circle and derivations	
	Describe and continue special number sequences. Describe and continue quadratic sequences. Describe and work out terms in geometric sequences. Work out and use the nth term of a geometric sequence. Identify Fibonacci-type sequences and other sequences.	Expand a pair of binomial brackets. Recognise and expand the difference of two squares. Use the difference of two squares in number and area calculations. Use algebraic manipulation to write additive or multiplicative relationships in different ways Change the subject in a formula.	Recognise the right-angled triangle within a unit circle. Understand how sine, cosine and tangent are derived from measurements within a unit circle.	
	Summer 1		Summer 2	
	Trigonometry: Using trigonometric ratios	Standard form	Linear and non-linear graphs	
	Use trigonometric ratios to find a missing side in a right-angled triangles. Use trigonometric ratios to find a missing angle in a right-angled triangles.	Recognise if a number is written in standard form. Convert between numbers written in ordinary form and standard form. Order very large or small numbers written in standard form.	Use linear graphs to find solutions to equations, inequalities and simultaneous equations. Read, interpret and model a journey on a distance-time graph. Plot and recognise quadratic graphs. Solve problems involving non-linear graphs. Solve problems involving direct or inverse proportion graphically.	
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