



Curriculum Plan Mathematics

Year 7	Knowledge <i>(Topics covered, NC links)</i>	Subject Skills	Literacy and Numeracy	School values <i>(Attitude / Achievement / Community / Endeavour)</i>	Extra curricular opportunities	Personal development <i>(Character, SMSC, Fundamental British values, Careers guidance, healthy living, Citizenship, equality and diversity, financial capability, preparation for next stage)</i>
Cycle 1	Calculators and rounding	Rounding to powers of 10 and decimal places Calculator functions	Integer, real, Irrational	Develop Endeavour by the challenging nature of mathematics	UKMT Junior Challenge	
	Pythagoras	Finding missing lengths in a right angled triangle Applications of Pythagoras	Hypotenuse	Community by supporting other students including outside of lessons for Sparx.	UKMT Team Challenge	Pythagoras – building, construction, carpentry, 3D modelling and simulation (including the computer game/graphics industry).
	Fractions	Finding fractions of amounts Four operations with fractions and mixed numbers Fractions in context	Denominator. Mixed numbers and improper fractions		Maths Masterclass University Workshops	
	Area	Area of rectangles, triangles and composite shapes Area of parallelograms and trapezia	Formulae for area			Area – building, construction, craft.



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	Percentages	Mental percentage skills (non calculator) Percentage increase and decrease Reverse percentage change				Percentages – analysis in all careers. Specific uses in Financial modelling.
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Cycle 2	Pythagoras	Solving Pythagoras problems set in context. Simplifying surds. Using surds to find exact value solutions to Pythagoras without a calculator.				Pythagoras – building, construction, carpentry, 3D modelling and simulation (including the computer game/graphics industry).
	Percentages	Percentage increase and decrease Reverse percentage change				Percentages – analysis in all careers. Specific uses in Financial modelling.
	Perimeter	Perimeter of regular polygons and compound shapes involving triangles and rectangles				
	Circumference	Calculate the circumference of a circle Calculate arc length of a sector	Radius, Circumference, Diameter, Tangent			



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	Proportion, area and perimeter	Problems involving proportion, area and/or perimeter				
	Negative numbers	Application of four operations to negative numbers				
	Factors and Multiples	Prime decomposition Finding HCF and LCM with prime factors				
	Introduction to algebra	Algebraic notation Simplifying expressions Substitution				Any career involving analysis or modelling. Specific uses in software development
	Balancing equations	Solving equations by balancing Unknown on both sides				
	Angles	Measuring and drawing Constructing triangles Problems involving KS2 angle facts Solving problems using the parallel line facts				



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Cycle 3	Equations and angles	Forming and solving in the context of angle problems				
	Algebra	Rearranging by balancing				
	Ratio	Linked ratios Ratios and linear functions				
	Sequences	Special sequences Next term rule Nth term rule Sequences of patterns Representing sequences on graphs				
	Area of a circle	Can use correct vocabulary for the parts of a circle (circumference, radius, diameter) Can recall and apply the formula for the area of a circle Can calculate the area of quarter or half circles Can leave answers in terms of π and work with exact values				



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	Equations and fractions	Equations with fractional solutions and fractional coefficients				
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