



Curriculum Plan Mathematics

Year 8	Knowledge (Topics covered, NC links)	Subject Skills	Literacy and Numeracy	School values (Attitude / Achievement / Community / Endeavour)	Extra-curricular opportunities	Personal development (Character, SMSC, Fundamental British values, Careers guidance, healthy living, Citizenship, equality and diversity, financial capability, preparation for next stage)
Cycle 1	Indices	Rules of indices Negative indices	Rules of indices	Challenging nature of mathematics builds Endeavour	UKMT Maths Challenge	
	Standard form	Converting into and out of standard form Compare and order numbers Calculations with numbers in standard form (calculator and non-calculator)			UKMT Maths Team Challenge	regularly used in Science and Engineering careers to represent large and small numbers.
	Algebra with brackets	Expanding and factorising linear expressions Solving linear equations containing brackets	Distributive law of multiplication		Maths Masterclass University Workshops	
	Area of a circle	Finding the area of circles and sectors.	Formulae			
	Area and Pythagoras	Applying Pythagoras in the context of area				
	Data	Comparing data sets using average and spread	Mean, Median Mode, Range			



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	Frequency distributions and grouped data	Interpreting frequency tables. Calculating summary statistics and comparing				Careers involving analysis and decision making (i.e. Management)
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Cycle 2	Algebra and perimeter	Forming and Solving equations in the context of perimeter	Using formulas			
	Linear graphs	Plot and recognise straight lines Concepts of gradient and intercept. Parallel and perpendicular lines				
	Unitary method and best value	Proportion problems using the unitary method Making comparisons for best value	Common use of proportion			
	Quadratics	Plotting curves Expanding double brackets				Careers involving modelling (Engineering, Simulation or gaming software design).



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	Volume	Volume of prisms and composite shapes	Interpretation of geometry and formulas			Construction, manufacturing
	Quadratics	Factorising Solving by factorising Selecting appropriate techniques				
	Parallel and Perpendicular lines	Use equations of lines Use terms perpendicular, reciprocal and negative reciprocal Solve problems involving parallel and perpendicular lines				

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Cycle 3	Prime decomposition	Find factors and multiples. List Prime numbers Write and use a Product of Prime Factors Highest Common Factor Lowest Common Multiple	Difference between multiples and factors			Common application in Science careers.
	Volume	Volume of cylinders	Units of measure			
	Probability	Single events Theoretical and experimental probability				Analysis and decision making. All forms of forecasting (Weather,



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		Sample space diagrams				Behaviour of people or things, gambling industry)
	Angles	Interior and exterior angles in polygons	Types of polygon			
	Forming and solving with Volume	Application of linear and quadratic algebra to problems involving volume				
	Surface area	Surface area of right prisms	Units of measure			Construction, manufacturing.
	Pie Charts	Constructing pie charts from various data sources				Careers involving analysis and decision making (i.e. All forms of management)
	Angles	Bearings and journeys Application of parallel line facts	Definition of a bearing. Using scale and maps			Careers involving navigation (air or shipping industry, Drone navigation)