

CORE KNOWLEDGE

What I will know and understand by the end of Year 7.



By the end of this year in Mathematics, we will be able to understand, reason with and solve problems involving...		This links to:	Key Vocabulary:
1	<ul style="list-style-type: none"> Sequences, exploring diagrams and lists of numbers Algebraic notation Equality and equivalence Place value and ordering integers and decimals 	<ul style="list-style-type: none"> Solving equations and using linear graphs in future blocks place value from KS2 through exploration of decimals 	<ul style="list-style-type: none"> Linear Inverse Substitution Equation Integer
2	<ul style="list-style-type: none"> Equivalence of fractions, decimals and percentages Addition and subtraction 	<ul style="list-style-type: none"> FDP conversions from KS2 which included $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{5}$. <p><i>Addition and subtraction are core mathematical skills throughout all key stages.</i></p>	<ul style="list-style-type: none"> Fraction Decimal Percentage Commutative
3	<ul style="list-style-type: none"> Multiplication and division Fractions and percentages of amounts Operations and equations with directed number 	<ul style="list-style-type: none"> Factors, multiples and prime factorisation in future blocks. Finding percentages of an amount in multiples of 5% and 10% from KS2. <p><i>Directed number is a core mathematical skill used throughout all key stages</i></p>	<ul style="list-style-type: none"> Product Numerator Denominator Positive Negative
4	<ul style="list-style-type: none"> Addition and subtraction of fractions Constructing, measuring and using geometric notation 	<ul style="list-style-type: none"> Addition and subtraction of fractions with common denominators and different denominators at KS2 Different types of fractions in KS4 such as irrational numbers and algebraic. 	<ul style="list-style-type: none"> Unit fraction Numerator Denominator Protractor
5	<ul style="list-style-type: none"> Geometric reasoning using angle properties Number sense and efficient mental maths strategies 	<ul style="list-style-type: none"> Using rulers, protractors and other measuring equipment at KS2. Geometric proof at KS4 	<ul style="list-style-type: none"> Parallel Perpendicular Vertex Estimate
6	<ul style="list-style-type: none"> Sets and probability Factors, multiples, prime numbers and proof 	<ul style="list-style-type: none"> FDP equivalence from earlier in year 7. Using Venn diagrams to find probability in year 8 	<ul style="list-style-type: none"> Element Intersect Multiple Factor Prime

Target Grade:		AP1:		AP2:		AP3:	
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CORE KNOWLEDGE

What I will know and understand by the end of Year 8.



By the end of this year in Mathematics, we will be able to understand, reason with and solve problems involving...		This links to:	Key Vocabulary:
1	<ul style="list-style-type: none"> Ratio and scale Multiplicative change Multiplying and dividing fractions Working in the cartesian plane 	<ul style="list-style-type: none"> KS2 use of scale factors Calculating with algebraic fractions in KS4 Finding the equation of a straight line in KS4 	<ul style="list-style-type: none"> Ratio Scale factor Reciprocal Gradient Parallel
2	<ul style="list-style-type: none"> Representing data in tables, charts and graphs Tables and probability Expanding brackets, solving equations and representing inequalities 	<ul style="list-style-type: none"> Reading data from tables in KS2 Introduction to Venn diagrams in year 7 Solving quadratic equations in KS4 	<ul style="list-style-type: none"> Frequency Outcomes Expand Factorise Expression
3	<ul style="list-style-type: none"> Sequences and the nth term Indices and the index laws Calculating with fractions and percentages Standard index form 	<ul style="list-style-type: none"> Describing sequences and patterns in year 7 block 1 Calculating with standard form in KS4 FDP equivalence in block 2 in year 7 	<ul style="list-style-type: none"> Nth term Indices Increase Decrease Multiplier
4	<ul style="list-style-type: none"> Number sense, including rounding, order of operations and metric conversions Angles in parallel lines and polygons 	<ul style="list-style-type: none"> Place value in block 4, year 7, along with indices earlier in year 8 Calculating error intervals and bounds in KS4 	<ul style="list-style-type: none"> Estimate Round Order of operations Polygon
5	<ul style="list-style-type: none"> Area of trapezia and circles Line symmetry and reflection 	<ul style="list-style-type: none"> Angles rules discovered in year 7 Geometric proof in KS4 Surface area and volume of cylinders in KS4 Properties of 2D shapes in KS2 	<ul style="list-style-type: none"> Trapezium Pi Symmetry
6	<ul style="list-style-type: none"> The data handling cycle including collecting and interpreting data Measures of location 	<ul style="list-style-type: none"> Comparing distributions of box plots, cumulative frequency graphs and histograms in KS4 	<ul style="list-style-type: none"> Primary data Secondary data Mean Median Mode

Target Grade:		AP1:		AP2:		AP3:	
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CORE KNOWLEDGE

What I will know and understand by the end of Year 9.



By the end of this year in Mathematics, we will be able to understand, reason with and solve problems involving...		This links to:	Key Vocabulary:				
1	<ul style="list-style-type: none"> Straight line graphs Forming and solving equations Testing conjectures Three dimensional shapes 	<ul style="list-style-type: none"> Sequences, block 1 in year 7 Solving equations graphically at the end of year 9 and in KS4 Knowledge of types of number in KS2 and year 7 	<ul style="list-style-type: none"> Gradient Intercept Formulae Proof Vertex 				
2	<ul style="list-style-type: none"> Construction and congruence of shape Numbers including integers and rational numbers 	<ul style="list-style-type: none"> Knowledge of scale factors from year 8 block 1 Calculating with fractions from year 7 	<ul style="list-style-type: none"> Construct Perpendicular Rational 				
3	<ul style="list-style-type: none"> Percentage increase and decrease Maths and money in real life contexts 	<ul style="list-style-type: none"> Percentage increase and decrease with multipliers from year 8 block 10 Understanding exponential growth in KS4 	<ul style="list-style-type: none"> Increase Decrease Multiplier Interest 				
4	<ul style="list-style-type: none"> Deduction involving algebra Rotation and translation Pythagoras' theorem in right angled triangles and other contexts 	<ul style="list-style-type: none"> Geometric proof, including circle theorems in KS4 Vectors covered in year 10 Finding the length of lines in the Cartesian plane in KS4 and beyond 	<ul style="list-style-type: none"> Deduce Rotational symmetry Translate Hypotenuse 				
5	<ul style="list-style-type: none"> Enlargement and similarity Ratio, direct proportion and inverse proportion 	<ul style="list-style-type: none"> Using negative scale factors in KS4 Forming equations using inverse proportion in KS4 and beyond 	<ul style="list-style-type: none"> Enlargement Scale factor Direct proportion 				
6	<ul style="list-style-type: none"> Rates, including compound units. Probability involving independent events Using graphs, tables and algebra 	<ul style="list-style-type: none"> Interpreting area under a curve covered in KS4 and KS5 Algebraic manipulation from year 7 and 8 Interpreting tables and graphs, content from KS2 and year 7 and 8 	<ul style="list-style-type: none"> Density Outcome Quadratic 				
Target Grade:		AP1:		AP2:		AP3:	