

Curriculum Map (Long Term Planning)

Key Concept	Sub Concept:	KS2 Common gaps:	7	8	9	10	11	KS5 (12/13)
Algebra	Notation, vocabulary and manipulation	<i>Notation</i> <i>Manipulation</i>	Introduction to Algebra (1) <ul style="list-style-type: none"> • Notation - Using Letter • Collect Like Terms • Substitution • Expand Brackets 	Expressions, Equations and Indices (4) <ul style="list-style-type: none"> • Form and manipulate expressions. • Factorising • Add and subtract with indices • Simplify algebraic expressions by multiplying or dividing indices • Use addition and subtraction law • Explore powers of powers 	Inequalities and Sequences (2) <ul style="list-style-type: none"> • Manipulating expressions • Substitution and Formulae • Inequalities - Representing 	Quadratic Equations & Graphs (3I) <ul style="list-style-type: none"> • Expanding double brackets • Factorising quadratics 	Advanced Algebra (3H) <ul style="list-style-type: none"> • Rearranging complex formulae • Algebraic fractions • Surds • Functions • Proof Equations & Graphs (3I) <ul style="list-style-type: none"> • Rearrange formulae • Algebraic proof 	Proof and Mathematical Communication (1)(1) Indices & Surds (2) Polynomials (4) Binomial Expansion (9)(6) Trigonometric Functions & Equations(10) Differentiation (13 & 14)(10 & 12) Integration (15)(11 & 12) Functions (2) Rational Functions & Partial Fractions (5) Calculus of Exponential & Trigonometric Functions (9) Differential Equations (13)
	Graphs	<i>Drawing Graphs – addressed within sequences Y7C1</i>	Sequences (4) <ul style="list-style-type: none"> • Coordinates in 4 quadrants • Represent Sequences - Graphically 		Graphs (5) <ul style="list-style-type: none"> • Lines parallel to the axis • Drawing linear graphs • Gradients (inc perp) • Equation of a line • Line segments (midpoint & length) • Real life graphs • Distance time graphs • Quadratic, cubic & reciprocal graphs 	Advanced Trigonometry (6H) <ul style="list-style-type: none"> • Trig graphs Quadratic Equations & Graphs (3I) <ul style="list-style-type: none"> • Plotting quadratics • Using quadratic graphs 	Equations & Graphs (3I) <ul style="list-style-type: none"> • Cubic graphs • Reciprocal graphs • Non-linear graphs • Simultaneous equations graphically Equations & Graphs (1H) <ul style="list-style-type: none"> • Simultaneous equations graphically • Graphical Inequalities • Graphs of quadratics • Solve quadratics graphically • Graphs of cubic functions • Non-linear graphs Advanced Algebra (3H) <ul style="list-style-type: none"> • Transformations of functions Proportion & Rates of Change (5H) <ul style="list-style-type: none"> • Exponential functions 	Quadratic Functions (3) Polynomials (4) Using Graphs (5) Co-ordinate Geometry (6) Exponential Models (8) Trigonometric Functions & Equations(10) Differentiation (13 & 14)(10 & 12) Integration (15)(11 & 12) Functions (2) Further Transformations of Graphs (3) Calculus of Exponential & Trigonometric Functions (9) Numerical Integration (15)
	Solving equations and inequalities	<i>Solving equations</i>	Introduction to Algebra (1) <ul style="list-style-type: none"> • Solving Equations (Unknown one side) • Forming Equations 	Expressions, Equations and Indices (4) <ul style="list-style-type: none"> • Solving equations (Unknown both sides) • Form and solve equations with unknown both sides 	Inequalities and Sequences (2) <ul style="list-style-type: none"> • Solving equations (brackets) • Forming equations (brackets) • Inequalities - Solving Graphs (5) <ul style="list-style-type: none"> • Simultaneous equations 	Quadratic & Simultaneous Equations (3H) <ul style="list-style-type: none"> • Solving quadratics (factorising & formula) • Completing the square • Simultaneous equations (inc quadratic) Quadratic Equations & Graphs (3I) <ul style="list-style-type: none"> • Solving quadratic equations 	Equations & Graphs (1H) <ul style="list-style-type: none"> • Iteration Advanced Algebra (3H) <ul style="list-style-type: none"> • Solving algebraic fractions Equations & Graphs (3I) <ul style="list-style-type: none"> • Solving simultaneous equations 	Quadratic Functions (3) Logarithms (7) Exponential Models (18) Binomial Expansion (9)(6) Trigonometric Functions & Equations(10) Numerical Solutions of Equations (14)
	Sequences		Sequences (4) <ul style="list-style-type: none"> • Recognising & generating sequences • Linear and non-linear sequences • Shape sequences • Sequence Investigation • Nth Term 		Inequalities and Sequences (2) <ul style="list-style-type: none"> • Using nth term • Fibonacci Sequence • Geometric & Quadratic sequences 			

Number	Structure and calculation	Primary sats data suggests confidence in number therefore curriculum builds upon <i>Calculation Strategies</i>	Number Sense (2) <ul style="list-style-type: none"> Ordering integers & decimals Calculations with integers and Decimals. Powers of 10 Standard Form 4 operations with negative numbers. Multiples, factors & primes Square and triangle numbers 		Number (1) <ul style="list-style-type: none"> Calculations with Negative numbers and BIDMAS HCF, LCM and Prime Factors Powers and Indices Standard Form Surds 			Indices & Surds (12) Logarithms (7)
	Fractions, decimals and percentages	<i>Varying experiences of fractions</i>	Number Sense (2) <ul style="list-style-type: none"> Representations of Fractions Add and Subtract Fractions Equivalent Fractions Improper and mixed fractions Algebraic fractions Calculate percentage of amounts Percentage inc/dec Whole when given percentage 	Proportion (2) <ul style="list-style-type: none"> Proportions and Percentages 				
	Measures and accuracy	<i>Rounding and estimating skills</i>	Number Sense (2) <ul style="list-style-type: none"> Round numbers to SF and DP Estimation Order of operations 		Number (1) <ul style="list-style-type: none"> Rounding Estimation Error Intervals 	Perimeter, Area & Volume (1I) <ul style="list-style-type: none"> Bounds Error intervals Area & Volume (1H) <ul style="list-style-type: none"> Bounds Error intervals 		

Data Handling	Measure of location and dispersion	<i>Basic Mean covered in KS2</i>		Charts and Probability (3) <ul style="list-style-type: none"> Averages & range Comparing data 	Averages and Statistical Diagrams (3) <ul style="list-style-type: none"> Averages from a Frequency table and other charts. 	Advanced Statistics (7H) <ul style="list-style-type: none"> Quartiles Comparing & describing populations 	Advanced Statistics (4I) <ul style="list-style-type: none"> Quartiles Comparing & describing populations 	Working with Data (16) The Normal Distribution (17) Hypothesis Testing (18)(18)
	Collecting, representing and interpreting data			Charts and Probability (3) <ul style="list-style-type: none"> Types of Data Frequency tables Pictograms, Bar Charts and Line Graphs Multiple Bar Charts Pie Charts 	Averages and Statistical Diagrams (3) <ul style="list-style-type: none"> Time Series Graph Stem and Leaf Scatter Graphs Cumulative Frequency Box Plots 	Advanced Statistics (7H) <ul style="list-style-type: none"> Histograms Box plots Cumulative frequency 	Advanced Statistics (4I) <ul style="list-style-type: none"> Histograms Box plots Cumulative frequency 	Working with Data (16) Hypothesis Testing (18)(18) The Normal Distribution (17)

Probability	Calculations	<i>Limited exposure to the probability scale – likely to unlikely</i>	Probability (6) <ul style="list-style-type: none"> Know and use the vocabulary of probability Calculate the probability of an event happening/NOT happening Mutually Exclusive Events 	Charts and Probability (3) <ul style="list-style-type: none"> Probabilities from Frequency Tables Probabilities from other charts and tables. 		Probability (5I) <ul style="list-style-type: none"> Combined events Mutually exclusive & independent Experimental probability Conditional probability Set notation Probability (5H) <ul style="list-style-type: none"> Combined events Mutually exclusive & independent Experimental probability Conditional probability Set notation 		Probability Distributions (17) Conditional Probability (16) The Normal Distribution (17)
	Diagrams and tables		Probability (6) <ul style="list-style-type: none"> Two Way Tables Sample Spaces Listing Outcomes Venn Diagrams 	Charts and Probability (3) <ul style="list-style-type: none"> Pictograms, Bar Charts and Line Graphs Multiple Bar Charts Pie Charts 		Probability (5I) <ul style="list-style-type: none"> Sample space Frequency trees Probability trees Venn diagrams Probability (5H) <ul style="list-style-type: none"> Frequency trees Probability trees Venn diagrams 		Probability Distributions (17) Conditional Probability (16)

Ratio & Proportion	Ratio and Proportion		Ratio (3) <ul style="list-style-type: none"> Write & simplify Dividing into a ratio Comparing ratios Ratio Problems Ratio in other forms 	Proportion (2) <ul style="list-style-type: none"> Direct proportion Inverse Proportion Proportions and Percentages Recipes/best buy 	Proportion and Compound Measure (4) <ul style="list-style-type: none"> Simple direct and inverse proportion using formulae 	Money Sense (2I) <ul style="list-style-type: none"> Exchange rates Money Sense (2H) <ul style="list-style-type: none"> Exchange rates 	Proportion & Rates of Change (5H) <ul style="list-style-type: none"> Complex direct & inverse proportion using formulae 	
	Rates of change			Proportion (2) <ul style="list-style-type: none"> Speed 	Proportion and Compound Measure (4) <ul style="list-style-type: none"> Speed – converting units Density Rates 	Money Sense (2H) <ul style="list-style-type: none"> Speed Growth & decay Percentages Density & pressure Money Sense (2I) <ul style="list-style-type: none"> Speed Growth & decay Percentages Density & pressure 	Proportion & Rates of Change (5H) <ul style="list-style-type: none"> Average & instantaneous rate of change 	Differentiation (13 & 14)(10 & 12) Integration (15)(11 & 12) Kinematics (19) Motion with Constant Acceleration (20) Force & Motion (21) Objects in Contact (22) Differential Equations (13) Numerical Integration (15) Projectiles (20) Forces in Context (21) Moments (22)

Geometry & Measures	Properties and construction	<ul style="list-style-type: none"> • Angles • Geometry Problems 	<p>Shape Properties (5)</p> <ul style="list-style-type: none"> • Use letter and labelling conventions • Measure and Draw angles • Construct 2D shapes • Identify perpendicular and parallel lines • Properties of 2D shapes • Coordinates in 4 quadrants 	<p>Angles and Loci (5)</p> <ul style="list-style-type: none"> • Angle notation • Construct triangles and quadrilaterals • Angles and perpendicular bisector <p>3D Shapes (6)</p> <ul style="list-style-type: none"> • Properties of 3D shapes 	<p>Transformations (6)</p> <ul style="list-style-type: none"> • Reflections • Rotations • Enlargements • Translations <p>Angles and Bearings (7)</p> <ul style="list-style-type: none"> • Bearings 	<p>Similarity & Congruence (4H)</p> <ul style="list-style-type: none"> • Similar shapes • Triangle congruence properties • Proof <p>Similarity & Congruence (4I)</p> <ul style="list-style-type: none"> • Similar shapes • Congruent shapes • Triangle congruence properties 	<p>Circle Theorems (2H)</p> <ul style="list-style-type: none"> • Radii & chords • Tangents • Angles in circles • Proof 	<p>Trigonometric Functions & Equations (10)</p> <p>Radian Measure (7)</p>
	Mensuration and calculation		<p>Shape Properties (5)</p> <ul style="list-style-type: none"> • Angle problems in triangles and quadrilaterals • Angles within 2D shapes 	<p>Right Angled Triangles (1)</p> <ul style="list-style-type: none"> • Pythagoras • Trigonometry <p>Angles and Loci (5)</p> <ul style="list-style-type: none"> • Parallel and transversal lines • Angles within parallel lines • Interior and Exterior Angles <p>3D Shapes (6)</p> <ul style="list-style-type: none"> • Circumference and Area of Circles • Surface Area • Volume 	<p>Angles and Bearings (7)</p> <ul style="list-style-type: none"> • Multistep Angle Problems 	<p>Perimeter, Area & Volume (1I)</p> <ul style="list-style-type: none"> • Area & perimeter • SA of prisms • Volume of prisms • Convert area and volume units • Circles • Arc length and sector area • Cylinders <p>Area & Volume (1H)</p> <ul style="list-style-type: none"> • Area and perimeter • Arc length and sector area • SA of prisms • Volume of prisms • Convert area and volume units • Cylinders, spheres, cones, pyramids and compound 3D shapes <p>Similarity & Congruence (4I)</p> <ul style="list-style-type: none"> • Missing lengths (congruence & similarity) • Similar shapes (area & volume) <p>Similarity & Congruence (4H)</p> <ul style="list-style-type: none"> • Missing lengths (congruence & similarity) • Similar shapes (area & volume) <p>Pythagoras & Trigonometry (6I)</p> <ul style="list-style-type: none"> • Pythagoras' Theorem • Trigonometry <p>Advanced Trigonometry (6H)</p> <ul style="list-style-type: none"> • Sine rule & Cosine rule • Area of a triangle • 3D problems 	<p>Area & Volume (1I)</p> <ul style="list-style-type: none"> • Area and perimeter • Sector area & Arc length • Cylinders, pyramids, cones, spheres and compound 3D shapes 	<p>Trigonometric Functions & Equations (10)</p> <p>Triangle Geometry (11)</p> <p>Radian Measure (7)</p> <p>Further Trigonometry (8)</p>
	Vectors				<p>Transformations (6)</p> <ul style="list-style-type: none"> • Translations 			<p>Vectors (2I)</p> <ul style="list-style-type: none"> • Drawing vectors • Vector notation • Vector arithmetic <p>Vectors (4H)</p> <ul style="list-style-type: none"> • Vector arithmetic & notation • Parallel vectors • Collinear points • Geometric problems