

1st Form	Term	1	2	3	4	5	6
	Title	Solve word problems (add and subtract)	Explain and investigate (multiply and divide)	Geometry	Fractions	Applications of Algebra	Percentages and Statistics
	Prior Knowledge	KS2 place value and calculations topics.	Place value and ordering decimals numbers; decimals on a number line. Perimeter of rectangles.	Column addition and subtraction of integers.	Multiplication and Division of Integers. Properties of Triangles and quadrilaterals	Areas of rectangles and triangles. Number patterns. Algebraic notation. Triangle and quadrilateral properties.	Equivalent fractions. Fractions of amounts.
	Core Knowledge	Place value of integers and decimals. Addition and subtraction of integers and decimals. Mental strategies. Rounding. Perimeter. Bar models.	Factors and multiples. Multiplication and division of integers and decimals. Area of rectangle, triangle and parallelogram. Mean average. Order and calculate with negative numbers.	Draw/measure angles. Angle rules and reasoning- at a point, straight line, triangles, quadrilaterals, vertically opposite angles. Properties of triangles and quadrilaterals. Unit conversion. Symmetry.	Equivalent fractions. Compare and order fractions. Convert mixed numbers and improper fractions. Fraction of a quantity. Multiplication and division with fractions.	Order of operations. Algebraic notation. Simplifying expressions. Substitution. Expand and factorise (single brackets) Sequences- term to term.	Construct and interpret bar charts. Pictograms and Pie charts Percentages of a quantity. Fractions /decimals/ percentages conversions. Percentage increase/ decrease. Find the whole given the part.
	Key takeaways for future learning	Place Value. Addition and subtraction of integers. Rounding to nearest 1, 10, 100, 1000.	Multiplication and division of integers. Area of rectangles. Order negative numbers.	Basic angle facts. Identify types of triangles.	Equivalent fractions. Simplify fractions.	Order of operations. Term to term rules. Simplify simple expressions.	Pictograms. Find common percentage of amounts.

2 nd Form	Term	1	2	3	4	5	6
	Title	Number	Number & Algebra	2D Geometry	Proportional Reasoning	2D & 3D Geometry	Statistics
	Prior Knowledge	Square numbers, factors and multiples; HCF and LCM (list method); Equivalent fractions; simplifying fractions; fraction of an amount.	Working with fraction and decimals.	Multiplying and dividing by powers of ten. Solving equations. Area and perimeter.	Percentages, Fractions and Decimals. Converting between percentages, fractions and decimals.	Area of rectangles and triangles. Calculating with integers and decimals.	Bar charts and other ways of presenting data, tally charts, mean median and mode.
	Core Knowledge	Squares and Cubes Primes and indices. Product of primes. Highest Common Factor/ Lowest Common Multiple. Set notation. Add and subtract fractions.	Review of order and calculate with negative numbers. Inequality statements. Form and manipulate expressions and equations. Describe and generate sequences. Nth term of linear sequences	Drawing triangles and quadrilaterals. Angle reasoning. Angles in parallel lines. Areas and perimeters of composite shapes. Area of a trapezium. Unit conversion including area.	Fractions /decimals/ percentages conversions. Percentage increase and decrease including multipliers. Reverse percentages. Ratio and rate Scaling and multipliers Speed/ distance/ time. Density/mass/volume.	Rounding and estimating. Circumference and area of circles. 3D shapes and nets. Plans & Elevations. Isometric representation. Volume of a cuboid, prism, cylinder, composite shapes. Surface area.	Data collection and organisation including surveys. Interpret and compare statistical representations. Averages including from frequency tables. Range and outliers.
	Key takeaways for future learning	Square numbers. Prime Numbers. Factors and Multiples. Equivalent fractions. Simplify fractions.	Order and calculate with negative numbers. Term to term rules. Form and simplify simple expressions.	Basic angle facts. Identify types of triangles and quadrilaterals.	Common fraction, decimal and percentage conversions. Form and simplify ratios.	Round to decimals places. Identify parts of a circle. Volume of cuboids.	Averages and range of list of numbers.

3 rd Form	Term	1	2	3	4	5	6
	Title	Graphs & Proportion	Algebra	2D & 3D Geometry	Equations & Inequalities	Probability & Statistics	Geometry
	Prior Knowledge	Ratio and Proportion. Substitution.	Sequences. Algebraic manipulation.	Angles. Squares and square roots. Area and circumference of circles. Volume and surface area of cuboids and prisms.	Equations with one variable. Different types of graphs.	Averages and range. Plotting graphs. Operations with decimals.	Pythagoras' theorem. Properties of triangles. Ratio. Angle facts.
	Core Knowledge	Cartesian coordinates. Midpoint of a line segment. Linear graphs. Direct and inverse proportion. Calculate with scales. Standard form.	Sequences (arithmetic and geometric). Expand binomials and factorise simple quadratics. Solve quadratics by factorising. Change the subject of formulae.	Construction and loci. Congruence. Pythagoras' theorem. Angles in polygons. Arc length and sector area. Volume of a pyramid, cone, sphere.	Construct and solve equations and inequalities. Simultaneous equations. Graphical solutions to simultaneous linear equations. Quadratic and other graphs.	Probability. Averages including from grouped data. Compare two data sets. Scatter graphs. Vector Geometry.	Similarity and Enlargement. Transformations: reflections, rotation, translations, enlargements. Trigonometry in right angled triangles. Bearings.
	Key takeaways for future learning	Coordinates and midpoints. Direct proportion. Write numbers in standard form.	Term to term and nth term rules. Re-arrange equations.	Pythagoras' theorem. Angles in polygons.	Solve equations.	Probability.	Transformations.
By the end of Key Stage 3, pupils are able to:		<ul style="list-style-type: none"> • Everyday numeracy skills such as working with money and time. • Spatial awareness and shape. • Measurements and units such as speed, distance and time. • Proportional reasoning such as recipe problems or exchange rates. • Statistics. • Estimations. • Percentages. • Identifying patterns. 					

- Trial and improvement.

4 st Form Foundation	Term	1	2	3	4	5	6
	Title	Number 1	Number 2	Statistics 1	Probability 1	Algebra 1	Algebra 3
	Prior Knowledge	Place value and ordering. Written methods of the 4 operations.	Rounding to 1, 10, 100, 1000.	Read axis and graphs. Averages and range	Basic probability. Work with decimals, fractions and percentages.	Basic algebraic manipulation.	Algebraic manipulation. Balancing equations.
	Core Knowledge	Cambridge chapters: 1, 4, 5, 6 Calculate and work with: positive and negative integers, fractions and decimals, factors, multiples and primes.	Cambridge chapters: 12, 13, 14, 15 Rounding and estimation. Calculate and work with percentages and standard form. Evaluate and simplify powers and roots.	Cambridge chapters: 2, 3 Use tables and graphs to represent data. To analyse data using measures of average and spread.	Cambridge chapters: 19, 24 Calculate and work with theoretical, experimental and relative probability. Construct probability trees and use them to calculate probabilities.	Cambridge chapters: 7 Use algebraic notation, simplify expressions, expand linear brackets and binomials. Factorise linear and quadratic expressions.	Cambridge chapters: 23 Write formulae and substitute into formulae.
	Key takeaways for future learning	Operations with integers, fractions and decimals.	Round to 1, 10, 100, 1000 and decimal places. Write numbers in standard form. Square numbers.	Representation of data.	Tree and Venn diagrams.	Expand single brackets. Factorise into single brackets.	Substitute into positive integers into formulae.
	Title			Geometry and Measures 1	Ratio, Proportion and Rates of Change 1	Algebra 2	Geometry and Measures 2
	Prior Knowledge			Basic angle facts. Area and perimeter of rectangles.	Factors and multiples. Proportional relationships.	Balancing equations. Substitution. Rearranging equations. Simplifying.	Recognise triangles and angle facts. Square numbers and roots. Area and volume. Scale factors.
	Core Knowledge			Cambridge chapters: 8, 9, 10, 11	Cambridge chapters: 26	Cambridge chapters: 16, 17, 18	Cambridge chapters: 35, 20, 21

				<p>Name 2D and 3D shapes. Calculate missing angles. Calculate the area and perimeter of polygons, circles, and compound shapes.</p>	<p>Solve ratio problems and to simplify ratios</p>	<p>Solve linear, quadratic and simultaneous equations algebraically. Generate sequences and find the nth term of sequences</p>	<p>Use Pythagoras' theorem. Draw and use nets, plans and elevations. Convert metric units of capacity, mass and length. Use formulae for speed, distance time, density, mass, volume, pressure, force, area. Use maps and bearings. Construct and use scale drawings.</p>
	<p>Key takeaways for future learning</p>			<p>Area of polygons. Angle facts.</p>	<p>Form and simplify ratios. Split quantity in given ratio.</p>	<p>Solve linear equations. Find the nth term of linear sequences.</p>	<p>Find the hypotenuse. Understand speed/distance/time.</p>

4 st Form Higher	Term	1	2	3	4	5	6
	Title	Number 1	Number 3	Algebra 1	Probability 1	Algebra 2	Algebra 3
	Prior Knowledge	Place value and ordering. Written methods of the 4 operations.	Squares and roots. Expanding brackets. Simplifying expressions. Operations with fractions.	Read axis and graphs. Averages and range	Basic probability. Work with decimals, fractions and percentages.	Basic algebraic manipulation.	Algebraic manipulation. Balancing equations.
	Core Knowledge	Cambridge chapters: 1, 4, 5, 6, 12, 13 Calculate and work with: positive and negative integers, fractions, decimals, percentages, factors, multiples and primes.	Cambridge chapters: 19 Simplify and manipulate surds Rationalise the denominator of surds Exact solutions using surds	Cambridge chapters: 7 Algebraic notation, simplify expressions, expand linear brackets and factorise linear expressions.	Cambridge chapters: 20, 25 Calculate and work with theoretical, experimental and relative probability. Construct probability trees and use them to calculate probabilities.	Cambridge chapters: 16, 17 Multiply binomials, factorise quadratics. Solve linear, quadratic & simultaneous equations.	Cambridge chapters: 23 Write formulae and substitute into formulae.
	Key takeaways for future learning	Operations with integers, fractions and decimals.	Simplify and manipulate surds.	Expand single brackets. Factorise into single brackets.	Tree and Venn diagrams.	Solve linear equations. Expand brackets.	Substitute into positive integers into formulae.
	Title	Number 2	Statistics 1	Geometry and Measures 1	Ratio, Proportion and Rates of Change 1	Geometry and Measures 2	Geometry and Measures 3
	Prior Knowledge	Basic index laws. Squares, cubes and roots. Powers of 10. Reciprocals. Operations with fractions and decimals.	Averages and range. Reading graphs and axis.	Basic angle facts. Area and perimeter of rectangles.	Factors and multiples. Proportional relationships.	Recognise triangles and angle facts. Square numbers and roots.	Area and volume. Scale factors.
	Core Knowledge	Cambridge chapters: 14, 15	Cambridge chapters: 2, 3	Cambridge chapters: 8, 9, 10, 11	Cambridge chapters: 27	Cambridge chapters: 37	Cambridge chapters: 21, 22, 24

		Calculate and work with standard form. Evaluate and simplify positive, negative and fractional powers and roots.	Use tables and graphs to represent data. Analyse data using measures of average and spread	Name 2D and 3D shapes. Calculate missing angles. Calculate the area and perimeter of polygons, circles, sectors & compound shapes.	Solve ratio problems and to simplify ratios	Use Pythagoras' theorem to find missing sides in right angle triangles and to use it to solve 2D problems	Use formulae for speed, distance time and density, mass, volume & pressure, force, area. Maps & bearings. Scale drawings. Volume & surface area of pyramids & prisms.
	Key takeaways for future learning	Write numbers in standard form. Square numbers. Index laws	Representation of data.	Area of polygons. Angle facts.	Form and simplify ratios. Split quantity in given ratio.	Find the hypotenuse.	Understand speed/distance/time.

5 st Form Foundat ion	Term	1	2	3	4	5	6
	Title	Algebra 3	Geometry and Measures 4	Geometry and Measures 5	Algebra 4		
	Prior Knowledge	Substitution, Re-arranging. Graphs and axis. Reciprocals.	Scale factors. Shape properties. Types of triangles.	Types of triangles. Square numbers and roots. Angle facts. Substitution. Re-arranging.	Linear graphs. Coordinates. Quadratic equations. Substitution. Re-arranging.		
	Core Knowledge	Cambridge chapters: 28 Plot graphs of linear functions. Equation of a straight line. Equations of parallel lines.	Cambridge chapters: 33, 34 Similarity. Identify mathematically similar shapes. Enlarge a shape by a scale factor. Congruence. Conditions for congruence- SSS, ASA, SAS, RHS.	Cambridge chapters: 32, 36 Construct angles and shapes. Bisect a line and angle Loci. Trigonometry in right-angled triangles. Problems using Pythagoras' theorem and trigonometry.	Cambridge chapters: 37 Graphs of other functions and equations. Quadratic graphs. Reciprocal graphs.		
	Key takeaways for future learning	Plot linear graphs. Equation of a linear graph.	Enlargements and similar shapes. Scale factors.	Finding missing angles and side in right angled triangles.	Identify and match non-linear graphs to their algebraic forms.		
	Title	Geometry and Measures 3	Algebra 4	Ratio, Proportion and Rates of Change 2	Revision		
	Prior Knowledge	Graphs, axis and coordinates. Scale	Graphs, axis and coordinates. Solving linear equations.	Scale factors. Ratios. Proportional			

		factors. Area and perimeter.	Balancing equations. Ordering directed numbers.	relationships. Percentages. Indices.			
	Core Knowledge	Cambridge chapters: 30, 31, 23 Transformations in a plane. Vector geometry. Add and subtract vectors. Volume and surface area.	Cambridge chapters: 29, 25 Interpreting graphs. Express inequalities on a number line. Represent and solve inequalities.	Cambridge chapters: 27, 38 Solve proportion and scaling problems. Solve problems using direct and inverse proportion. Growth and decay. Simple and compound interest.			
	Key takeaways for future learning	Transformations. Operations with vectors.	Solve linear inequalities.	Multipliers. Direct proportion. Simple interest.			

5 st Form Higher	Term	1	2	3	4	5	6
	Title	Algebra 4	Geometry and Measures 5	Ratio, Proportion and Rates of Change 2	Geometry and Measures 6		
	Prior Knowledge	Substitution, Re-arranging. Graphs and axis. Reciprocals.	Scale factors. Shape properties. Types of triangles. Substitution, Re-arranging.	Scale factors. Ratios. Proportional relationships. Percentages. Indices.	Angle facts. Parts of a circle. Algebraic manipulation.		
	Core Knowledge	Cambridge Maths chapters: 29, 30 Plot graphs of linear functions. Equation of a straight line. Equations of parallel and perpendicular lines Equation of a tangent Interpreting graphs.	Cambridge Maths chapters: 34, 38 Constructions and Loci. Trigonometry in right-angled triangles. Cosine and sine rules. Area of a triangle.	Cambridge Maths chapters: 28, 40 Direct and inverse proportion- graphically and algebraically. Growth and decay Simple and compound interest.	Cambridge Maths chapters: 31 Circle theorems. Geometric proof using circle theorems.		
	Key takeaways for future learning	Plot linear graphs. Equation of a linear graph.	Finding missing angles and side in any triangle.	Multipliers. Direct proportion. Simple interest.	Recall and recognise common circle theorems.		
	Title	Geometry and Measures 4		Algebra 5	Algebra 6		
	Prior Knowledge	Graphs, axis and coordinates. Scale factors. Area and perimeter.		Graphs, axis and coordinates. Solving linear equations. Balancing equations. Ordering directed numbers. Quadratics.	Linear graphs. Coordinates. Quadratic equations. Substitution. Re-arranging.		

<p>Core Knowledge</p>	<p>Cambridge Maths chapters: 32, 33, 35, 36</p> <p>Vector geometry Transformations in a plane Similarity Enlarge a shape by a scale factor Conditions for congruence- SSS, ASA, SAS, RHS</p>		<p>Cambridge Maths chapters: 18, 26</p> <p>Nth term of linear and quadratic sequences. Functions. Express inequalities on a number line. Represent and solve inequalities algebraically and graphically. Quadratic inequalities.</p>	<p>Cambridge Maths chapters: 39, 41</p> <p>Graphs of other functions and equations. Quadratic graphs. Reciprocal graphs. Transformations of curves.</p>		
<p>Key takeaways for future learning</p>	<p>Transformations. Operations with vectors.</p>		<p>Spot quadratic sequence. Substitute into functions. Solve linear inequalities.</p>	<p>Identify and match non-linear graphs to their algebraic forms.</p>		
<p>By the end of Key Stage 4, pupils are able to:</p>		<ul style="list-style-type: none"> • Mathematical reasoning. • Problem solving and logical thinking. • Problems within a real life context. • Choosing the most appropriate/efficient approach where there are several possible approaches. • Interleaving. • Interpret mathematical findings. 				