

KS3 Maths Curriculum Map

KS3 Objectives

Taken from the Mathematics Programmes of Study: Key Stage 3



KS3 Maths Curriculum Map

Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
Understand and use place value for decimals, measures and integers of any size.			This can be achieved through any of the place value worksheets.
Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥.	<ul style="list-style-type: none"> Place value. Using a place value chart. 	Students should have a good understanding of place value from KS2.	Ordering Integers
	<ul style="list-style-type: none"> Place value. Using a place value chart. Converting money between pounds and pence. 	Students should have a good understanding of place value from KS2.	Ordering Decimals
	<ul style="list-style-type: none"> Place value. How to order positive numbers. 	Ordering Integers	Ordering Negative Numbers
	<ul style="list-style-type: none"> An understanding of place value for both positive and negative numbers, including integers and decimals. Be able to apply the four operations to positive and negative numbers. Be able to apply the rules of BIDMAS to calculations. 	Ordering Integers	Greater Than, Less Than or Equal To
Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property.	<ul style="list-style-type: none"> Finding factors. Prime numbers. Times tables. 		Prime Factor Decomposition
	<ul style="list-style-type: none"> Times tables. 	Students should have a good understanding of place value from KS2.	Types of Number

Subject Content: Number

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Subject Content: Number

<p>Use the four operations, including the formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.</p>	<ul style="list-style-type: none"> • How to use a place value chart. • An understanding of place value. 	<p>Students should have a good understanding of place value from KS2.</p>	<p>Multiplying and Dividing by Powers of 10</p>
	<ul style="list-style-type: none"> • An understanding of place value. • Dividing whole numbers and decimals by 10 or 100. 	<p>Multiplying and Dividing by Powers of 10</p>	<p>Multiplying by 0.1 and 0.01</p>
	<ul style="list-style-type: none"> • An understanding of place value. • Multiply whole numbers and decimals by 10 or 100. 	<p>Multiplying and Dividing by Powers of 10</p>	<p>Dividing by 0.1 and 0.01</p>
	<ul style="list-style-type: none"> • Times tables. 	<p>Students should have a good understanding of times tables from KS2.</p>	<p>Long Multiplication</p>
	<ul style="list-style-type: none"> • Times tables. 	<p>Students should have a good understanding of times tables from KS2.</p>	<p>Division with Remainders</p>
	<ul style="list-style-type: none"> • Times tables. • Division with remainders. 	<p>Division with Remainders</p>	<p>Short Division</p>
	<ul style="list-style-type: none"> • Be able to correctly place numbers (integers and decimals) into a place value chart. • Be able to change money between pence and pounds. 	<p>Students should have a good understanding of place value from KS2.</p>	<p>Addition: Column Method</p>
	<ul style="list-style-type: none"> • Be able to correctly place numbers (integers and decimals) into a place value chart. • Be able to read numbers confidently. • Be able to change money between pence and pounds. 	<p>Addition: Column Method</p>	<p>Subtraction: Column Method</p>
	<ul style="list-style-type: none"> • Be able to perform the four operations with positive numbers. 	<p>Addition: Column Method</p> <p>Subtraction: Column Method</p>	<p>The Four Operations with Negative Numbers</p>

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Subject Content: Number

	<ul style="list-style-type: none"> • How to calculate the highest common factor of two numbers. • Using inverse operations. 	Inverse Operations	Writing Equivalent and Simplified Fractions
	<ul style="list-style-type: none"> • Division with remainders. • Times tables. • Writing fractions in their simplest form. 	Division with Remainders	Calculations with Fractions
	<ul style="list-style-type: none"> • Writing fractions in their simplest form. • Division with remainders 	Writing Equivalent and Simplified Fractions	Converting between Mixed Number and Improper Fractions
	<ul style="list-style-type: none"> • Equivalent fractions. • Writing fractions in their simplest form. • Lowest common multiple. • How to convert between mixed number and improper fractions. 	Writing Equivalent and Simplified Fractions	Adding and Subtracting Fractions
	<ul style="list-style-type: none"> • Equivalent fractions. • Writing fractions in their simplest form. • Lowest common multiple. • How to convert between mixed number and improper fractions. 	Writing Equivalent and Simplified Fractions	Multiplying and Dividing Fractions
Use conventional notation for the priority of operations, including brackets, powers roots and reciprocals.	<ul style="list-style-type: none"> • Times tables. • Powers. • Be able to apply the four operations to both positive and negative numbers. • Be able to apply the four operations to both positive and negative numbers. 	The Four Operations with Negative Numbers	BIDMAS
Recognise and use relationships between operations including inverse operations.	<ul style="list-style-type: none"> • Be able to apply the four operations to both positive and negative numbers. 	The Four Operations with Negative Numbers	Inverse Operations

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Subject Content: Number	Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations or roots and their decimal approximations.	<ul style="list-style-type: none"> • Square numbers. • Cube numbers. • Square roots. • Cube roots. • Multiplying negative numbers. 	Types of Number	Indices and Roots
	Interpret and compare numbers in standard form $A \times 10^n$ ($1 \leq A < 10$), where n is a positive or negative integer or zero.	<ul style="list-style-type: none"> • Multiplying and dividing numbers by powers of 10 	Multiplying and Dividing by Powers of 10	Standard Form
	Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$).	<ul style="list-style-type: none"> • Finding equivalent fractions. • How to multiply and divide by 10 and 100. 	Writing Equivalent and Simplified Fractions Multiplying and Dividing by Powers of 10	Fractions, Decimals and Percentages
	Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%.	<ul style="list-style-type: none"> • How to convert a decimal to a percentage. • How to multiply and divide by 10 and 100. 	Multiplying and Dividing by Powers of 10	Finding a Percentage of an Amount (Without a Calculator)
		<ul style="list-style-type: none"> • Finding the percentage of an amount without a calculator. • How to convert a percentage to a decimal. 	Finding a Percentage of an Amount (Without a Calculator)	Finding the Percentage of an Amount Using a Multiplier
		<ul style="list-style-type: none"> • Finding equivalent fractions. • Convert between fractions and percentages. 	Writing Equivalent and Simplified Fractions	Expressing a Quantity as a Fraction or Percentage of Another
		<ul style="list-style-type: none"> • Equivalent fractions. • Multiplying by 100. • Dividing by 100. 	Writing Equivalent and Simplified Fractions Multiplying and Dividing by Powers of 10	Fractions, Decimals and Percentages

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Subject Content: Number	Interpret fractions and percentages as operators.	<ul style="list-style-type: none"> • How to convert a decimal to a percentage. • How to multiply and divide by 10 and 100. 	Multiplying and Dividing by Powers of 10	Finding a Percentage of an Amount (Without a Calculator)
		<ul style="list-style-type: none"> • Finding the percentage of an amount without a calculator. • How to convert a percentage to a decimal. 	Finding a Percentage of an Amount (Without a Calculator)	Finding the Percentage of an Amount Using a Multiplier
	Use standard units of mass, length, time, money and other measures, including with decimal quantities.	Examples included throughout number worksheets.		
	Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures).	<ul style="list-style-type: none"> • Place values. • Finding a midpoint between two numbers. 	Students should have a good understanding of place value from KS2.	Rounding to the Nearest 10, 100 and 1000
		<ul style="list-style-type: none"> • It may be useful to know how to round to the nearest 10, 100 and 1000. • Place values. 	Rounding to the Nearest 10, 100 and 1000	Rounding to a Given Number of Decimal Places
		<ul style="list-style-type: none"> • Place value. • The four operations. • Writing numbers as digits from words. 	Students should have a good understanding of place value from KS2.	Rounding to Significant Figures
	Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$.	<ul style="list-style-type: none"> • Rounding numbers to 1 significant figure. • Powers and roots. • Be able to apply the four operations to both positive and negative numbers. 	Rounding to Significant Figures	Estimation
	Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.	This sheet is geared towards the use of a CASIO fx-85GT.		Using a Calculator
Appreciate the infinite nature of the sets of integers, real and rational numbers.	Number Vocabulary			

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Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
Use and interpret algebraic notation, including: <ul style="list-style-type: none"> • ab in place of $a \times b$; • $3y$ in place of $y + y + y$ and $3 \times y$; • a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$; a^2b in place of $a \times a \times b$; • $\frac{a}{b}$ in place of $a \div b$; • coefficients written as fractions rather than as decimals; • brackets. 	<ul style="list-style-type: none"> • Adding and subtracting with positive and negative numbers. • Perimeter (challenge only). 	The Four Operations with Negative Numbers	Collecting Like Terms
	<ul style="list-style-type: none"> • Multiplying and dividing with positive and negative numbers. • Index laws. 	The Four Operations with Negative Numbers	Simplifying Terms
Substitute numerical values into formulae and expressions, including scientific formulae.	<ul style="list-style-type: none"> • BIDMAS. • Solving equations. 	BIDMAS Solving Equations with One Variable	Putting Numbers into Formulae
	<ul style="list-style-type: none"> • Be able to apply the four operations to positive and negative numbers. • BIDMAS. • Powers. 	The Four Operations with Negative Numbers BIDMAS	Substituting into Formulae
Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors.	Algebra Vocabulary		
Simplify and manipulate algebraic expressions to maintain equivalence by: <ul style="list-style-type: none"> • collecting like terms; • multiplying a single term over a bracket; • taking out common factors; • expanding products of two or more binomials. 	<ul style="list-style-type: none"> • Adding and subtracting with positive and negative numbers. • Perimeter (challenge only). 	The Four Operations with Negative Numbers	Collecting Like Terms
	<ul style="list-style-type: none"> • Multiplication of positive and negative numbers. • Collecting like terms. • Area (challenge only). 	The Four Operations with Negative Numbers	Expanding Single Brackets

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Subject Content: Algebra		<ul style="list-style-type: none"> • Be familiar with algebraic vocabulary such as term, expand and expression. • Calculate factors and the highest common factor. • Expanding brackets. 	Algebra Vocabulary Expanding Single Brackets	Factorising
		<ul style="list-style-type: none"> • Expanding single brackets. • Collecting like terms and simplifying expressions. • Adding and multiplying negative numbers. 	Expanding Single Brackets	Expanding Double Brackets
	Understand and use standard mathematical formulae; rearrange formulae to change the subject.	<ul style="list-style-type: none"> • Be confident in using BIDMAS. • Solving linear equations. 	BIDMAS Solving Equations with One Variable	Rearranging Formulae
	Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.	<ul style="list-style-type: none"> • How to solve linear equations. • Substituting into expressions. • Perimeter of rectangles. 	Solving Equations with One Variable Substituting into Formulae	Forming and Solving Equations
		<ul style="list-style-type: none"> • Perimeter. • Collecting like terms. • Area of a rectangle. 	Collecting Like Terms Area Questions	Forming Expressions
	Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement).	<ul style="list-style-type: none"> • Be confident in using BIDMAS. • Familiar with multiplying algebraic expressions and substitution. 	BIDMAS Simplifying Terms	Solving Equations with One Variable
	Work with coordinates in all four quadrants.	Coordinates in 4 Quadrants		

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Subject Content: Algebra	Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane.	<ul style="list-style-type: none"> Plot coordinates in all 4 quadrants. Have knowledge of $y = mx + c$ 	Coordinates in 4 Quadrants	Recognise, Sketch and Produce Graphs of Linear and Quadratic Functions of 1 Variable
	Interpret mathematical relationships both algebraically and graphically.	<ul style="list-style-type: none"> Plot coordinates in all 4 quadrants. Solve 2-step equations with unknowns on one side. Form equations. Rearrange formulae. 	Coordinates in 4 Quadrants Solving Equations with One Variable	Interpret Mathematical Relationships Both Algebraically and Graphically
	Reduce a given linear equation in two variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically.	<ul style="list-style-type: none"> Substituting into algebraic expressions. 	Substituting into Formulae	Drawing Straight-Line Graphs
		<ul style="list-style-type: none"> Plot coordinates. Plot a straight line using an equation. 	Coordinates in 4 Quadrants	Finding the Gradient of a Straight-Line Graph
		<ul style="list-style-type: none"> Calculating the gradient of a straight line. Adding and subtracting negative numbers. How to read and write coordinates. 	Coordinates in 4 Quadrants Finding the Gradient of a Straight-Line Graph	Finding the Equation of a Straight Line
		<ul style="list-style-type: none"> How to read, write and plot coordinates in all 4 quadrants. 	Coordinates in 4 Quadrants	Straight-Line Graphs
<ul style="list-style-type: none"> How to read, write and plot coordinates in all 4 quadrants. How to substitute into expressions. Be able to apply all four operations to positive and negative numbers. 	Coordinates in 4 Quadrants Substituting into Formulae The Four Operations with Negative Numbers	Straight Line Graphs with Equations of the Form $y = mx$		

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Subject Content: Algebra	Use linear and quadratic graphs to estimate the values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations.	<ul style="list-style-type: none"> • Draw a straight-line graph. • Reading coordinates. • Rearranging formulae. 	Coordinates in 4 Quadrants Drawing Straight-Line Graphs Rearranging Formulae	Solving Simultaneous Equations Graphically
	Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs.	<ul style="list-style-type: none"> • Read coordinates in all 4 quadrants. 	Coordinates in 4 Quadrants	Contextual Problems in Given Graphs
	Generate terms of a sequence from either a term-to-term or a position-to-term rule.	<ul style="list-style-type: none"> • Substituting into formulae. • Solve a linear equation. 	Substituting into Formulae Solving Equations with One Variable	Generating Linear Sequences
	Recognise arithmetic sequences and find the n^{th} term.	<ul style="list-style-type: none"> • Times tables. • Solving linear equations. 	Solving Equations with One Variable	Linear Sequences
	Recognise geometric sequences and appreciate other sequences that arise.	<ul style="list-style-type: none"> • Confidently multiply and divide two numbers. • Multiply and divide fractions. 	Multiplying and Dividing Fractions	Geometric Sequences

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Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
Change freely between standard units (for example, time, length, area, volume/capacity, mass).	<ul style="list-style-type: none"> • Multiplying and dividing by 10, 100 and 1000. • Multiplication and division. 	Multiplying and Dividing by Powers of 10	Converting Between Units
Use scale factors, scale diagrams and maps.	<ul style="list-style-type: none"> • Be able to draw and measure accurately using a ruler. • Multiplication and division. 	Drawing and Measuring Line Segments	Scale Drawings
Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1.	<ul style="list-style-type: none"> • Find equivalent fractions. • Convert between fractions and percentages. 	Writing Equivalent and Simplified Fractions	Expressing a Quantity as a Fraction or Percentage of Another
Use ratio notation, including reduction to simplest form.	<ul style="list-style-type: none"> • Finding the highest common factor. • Times tables. • Multiplication and division. 	Students should have a good understanding of times tables from KS2.	Working with Ratio
Divide a given quantity into two parts in a given part : part or part : whole ratio; express the division of a quantity into two parts as a ratio.	<ul style="list-style-type: none"> • Be able to apply all four operations to positive numbers. • Substitution. • An understanding of what ratio is. 	Working with Ratio	Sharing an Amount in a Given Ratio
Understand that a multiplicative relationship between two quantities can be expressed as a ratio or fraction.	<ul style="list-style-type: none"> • Sharing an amount in a given ratio. • Finding a fraction of an amount. • Writing fractions. 	Sharing an Amount in a Given Ratio Calculations with Fractions	Working with Fractions and Ratio
Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions.	<ul style="list-style-type: none"> • Sharing an amount in a given ratio. • Finding a fraction of an amount. • Writing fractions. 	Sharing an Amount in a Given Ratio Calculations with Fractions	Working with Fractions and Ratio
Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics.	Calculating percentage increase/decrease by calculating the percentage and then adding to/subtracting from the original amount.		Percentage Increase and Decrease
	<ul style="list-style-type: none"> • Calculate a percentage increase or decrease using a multiplier. 	Percentage Increase and Decrease	Percentages Original Value

Subject Content: Ratio, Proportion and Rates of Change



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Solve problems involving direct and inverse proportion, including graphical and algebraic representations.	Calculate proportions using the unit method.		Direct and Inverse Proportion
Use compound units such as speed, unit pricing and density to solve problems.	<ul style="list-style-type: none">• Multiplication and division.• An understanding of time.		Speed, Distance, Time
	<ul style="list-style-type: none">• Rearranging formulae.• Substituting into formulae.	Rearranging Formulae Substituting into Formulae	Compound Measures

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Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders).	<ul style="list-style-type: none"> • Be able to find the area of a shape by counting squares. • Be familiar with solving equations. 	Solving Equations with One Variable	Area
	<ul style="list-style-type: none"> • Be familiar with cubes and cuboids, and their properties. 	3D Shapes	Volume of Cubes and Cuboids
	<ul style="list-style-type: none"> • How to calculate the area of a circle • Rounding numbers to whole numbers, 1 and 2 decimal places. 	Area of Circles Rounding to a Given Number of Decimal Places	Volume of Cylinders
	<ul style="list-style-type: none"> • Calculate the area of a circle. • Round numbers to the nearest whole number. • Calculate the area of a triangle, rectangle, square and trapezium. 	Area of Circles Rounding to the Nearest 10, 100 and 1000 Area	Volume of Prisms
Calculate and solve problems involving: perimeters of 2D shapes (including circles), areas of circles and composite shapes.	<ul style="list-style-type: none"> • Round numbers to the nearest whole number, as well as 1 and 2 decimal places. • Calculating the area of other 2D shapes such as triangles. • Substituting numbers into formulae. 	Rounding to a Given Number of Decimal Places Substituting into Formulae Area	Area of Circles Answers in Terms of pi
	<ul style="list-style-type: none"> • Round numbers to the nearest whole numbers, as well as 1 and 2 decimal places. • Be confident using a calculator. • Familiar with substituting into formulae. 	Rounding to a Given Number of Decimal Places Substituting into Formulae	Circumference of Circles Answers in Terms of pi
	<ul style="list-style-type: none"> • How to calculate the area of squares, rectangles and triangles. 	Area	Area of Composite Shapes

Subject Content: Geometry and Measures

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Subject Content: Geometry and Measures		<ul style="list-style-type: none"> • How to calculate the area of rectangles and squares. • How to calculate the area of circles and semicircles. • How to round numbers to the nearest whole number, 1 and 2 decimal places. • Be able to leave answers in terms of pi. 	Area Area of Circles Rounding to a Given Number of Decimal Places Answers in Terms of pi	Area of Compound Shapes
		How to calculate the perimeter of simple shapes such as rectangles, squares and triangles.		Perimeter of Composite Shapes
	Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.	You will need a pencil and ruler for this sheet.		Drawing and Measuring Line Segments
		<ul style="list-style-type: none"> • Be able to use a ruler to draw straight lines. • You will need a protractor, ruler and pencil to complete the sheet. 	Drawing and Measuring Line Segments	Drawing and Measuring Angles
	<ul style="list-style-type: none"> • Be able to accurately draw and measure line segments using a ruler. • Multiplication and division. 	Drawing and Measuring Line Segments	Scale Drawings	
Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line.	<ul style="list-style-type: none"> • Be able to accurately draw and measure line segments using a ruler. 	Drawing and Measuring Line Segments	Perpendicular Bisectors	
	You will need a pencil, ruler and pair of compasses to complete the sheet.			
	<ul style="list-style-type: none"> • Be confident in how to use a ruler and a pair of compasses. 	Drawing and Measuring Line Segments	Loci from a Given Point	
	<ul style="list-style-type: none"> • How to draw and measure angles using a protractor. 	Drawing and Measuring Angles	Angle Bisectors	

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Subject Content: Geometry and Measures	Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric.	Geometry and Measure Vocabulary		
		<ul style="list-style-type: none"> A basic understanding of rotational symmetry. <p>You will also need some tracing paper to complete the questions.</p>	Rotational Symmetry	
		<ul style="list-style-type: none"> A basic understanding of line symmetry. 	Drawing and Measuring Line Segments	Lines of Symmetry
	Use the standard conventions for labelling the sides and angles of triangles ABC, and know and use the criteria for congruence of triangles.	<ul style="list-style-type: none"> An understanding of rotation, reflection and translations. <p>Knowledge of the hypotenuse in right-angled triangles.</p>	An Introduction to Congruence	
	Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures (for example, equal lengths and angles) using appropriate language and technologies.	Parts of a Circle		
	Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures.	<ul style="list-style-type: none"> Draw lines of $x = n$, $y = n$ and $y = x$. 	Straight-Line Graphs	Transformations: Reflections Worksheet
		<ul style="list-style-type: none"> How to read and write coordinates in 4 quadrants. <p>It might help to have some tracing paper for this activity.</p>	Coordinates in 4 Quadrants	Rotation Worksheet
		<ul style="list-style-type: none"> How to read and write coordinates in 4 quadrants. 	Coordinates in 4 Quadrants	Translations
		<ul style="list-style-type: none"> Multiplication and division. Be able to accurately draw and measure line segments using a ruler. 	Drawing and Measuring Line Segments	Transformations: An Introduction to Enlargements

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Subject Content: Geometry and Measures	Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids.	<ul style="list-style-type: none"> • How to draw and measure an angle using a protractor. • Be able to label the sides and angles of triangles. 	Drawing and Measuring Angles	Constructing Triangles (with a Protractor)
		<ul style="list-style-type: none"> • Be able to accurately draw and measure line segments using a ruler. <p>You will need a pencil, ruler and pair of compasses to complete the sheet.</p>	Drawing and Measuring Line Segments	Constructing Triangles
	Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles.	<ul style="list-style-type: none"> • Be able to form and solve linear equations. • Be able to apply all four operations to positive and negative numbers. 	Solving Equations with One Variable	Angle Properties
	Understand and use the relationship between parallel lines and alternate and corresponding angles.	<ul style="list-style-type: none"> • Angles on straight lines. • Angles in triangles. 	Angle Properties	Angles in Parallel Lines
	Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons.	<ul style="list-style-type: none"> • Substitution. • Be able to apply all four operations to positive and negative numbers. • Angles on straight lines. 	Angle Properties	Angles in Polygons
	Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' theorem, and use known results to obtain simple proofs.	<ul style="list-style-type: none"> • How to round numbers to whole numbers, significant figures as well as 1 and 2 decimal places. • Substituting into formulae. • Rearranging formulae 	Rearranging Formulae Substituting into Formulae Rounding to the Nearest 10, 100 and 1000 Rounding to Significant Figures Rounding to a Given Number of Decimal Places	Pythagoras' Theorem
<ul style="list-style-type: none"> • Multiplication and division. 			Short Division	Similar Shapes

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Subject Content: Geometry and Measures	Use Pythagoras' theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles.	<ul style="list-style-type: none"> • Substitution. • Confidently use a calculator. • Rounding numbers to 1 decimal place. 	Rounding to a Given Number of Decimal Places	Trigonometry Missing Sides
		<ul style="list-style-type: none"> • How to round numbers to whole numbers, significant figures as well as 1 and 2 decimal places. • Substituting into formulae. • Rearranging formulae. 	Rearranging Formulae Substituting into Formulae Rounding to the Nearest 10, 100 and 1000 Rounding to Significant Figures Rounding to a Given Number of Decimal Places	Pythagoras' Theorem
	Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D.	3D Shapes		
Interpret mathematical relationships both algebraically and geometrically.	<ul style="list-style-type: none"> • Simplifying an algebraic expression. • Expanding single and double brackets. • Forming and solving equations. • Finding the area and perimeter of a triangle, quadrilateral, circle or compound shape. • Finding a missing angle on a line, about a point or in a triangle. • Finding a missing side or angle in similar shapes. 	Simplifying Terms Expanding Single Brackets Forming and Solving Equations	Algebra and Geometric Relationships	

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Subject Content: Probability	Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
	Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale.	<ul style="list-style-type: none"> • Adding and subtracting decimals. • Writing fractions. 	Addition: Column Method Subtraction: Column Method	An Introduction to Probability
	Understand that the probabilities of all possible outcomes sum to 1.	<ul style="list-style-type: none"> • Be able to calculate probabilities of independent events. • Enter discrete data in tables. 	An Introduction to Probability	Relative Frequency
	Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams.	<ul style="list-style-type: none"> • Be able to calculate probabilities of independent events. 	An Introduction to Probability	Introduction to Venn Diagrams
	Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities.	<ul style="list-style-type: none"> • Be able to calculate probabilities of independent events. 	An Introduction to Probability	Sample Space Diagrams

KS3 Maths Curriculum Map
Subject Content: Statistics

Pupils should be taught to:	Prior Knowledge Needed	Try This First	Resource
Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers).	<ul style="list-style-type: none"> The different types of data. How data can be collected. Be able to calculate the mean average of a set of data. Be able to apply all four operations to positive and negative numbers. Round numbers to decimal places. 	<ul style="list-style-type: none"> Rounding to a Given Number of Decimal Places Calculating Averages and Measures of Spread 	<ul style="list-style-type: none"> Calculating Averages and Measures of Spread Reverse Mean
Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data.	<ul style="list-style-type: none"> How to find fractions of amounts. Best used as revision of tally charts, bars charts and pictograms. How to draw angles using a protractor. Simplifying fractions. Rounding numbers to the nearest whole number. 	<ul style="list-style-type: none"> Calculations with Fractions Drawing and Measuring Angles Rounding to the Nearest 10, 100 and 1000 	<ul style="list-style-type: none"> Tally Charts, Bar Charts and Pictograms Pie Charts
Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.	<ul style="list-style-type: none"> Be able to read and plot coordinates. Be able to draw a line of best fit using a ruler. 	<ul style="list-style-type: none"> Drawing and Measuring Line Segments Coordinates in 4 Quadrants 	<ul style="list-style-type: none"> Scatter Graphs