

CURRICULUM OVERVIEW Subject - Maths

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Topic: Number	Topic: Number	Topic: Number	Topic: Number Measurement	Topic: Geometry Number	Topic: Number Measurement
	Concept: Place Value Addition and Subtraction	Concept: Multiplication and Division Fractions	Concept: Multiplication and Division Fractions Decimals and percentages	Concept: Decimals and Percentages Perimeter & Area Statistics	Concept: Shape Position and direction Decimals	Concept: Decimals Negative numbers Converting units Volume
Year 5	<p>Skills: Read, understand, write, order and compare numbers up to 1 000 000.</p> <p>Find powers of 10 and 10/100/1000/ 10,000/ 100,000 more or less</p> <p>Number line to 1, 000, 000</p> <p>Solve roman numerals to 1, 000</p> <p>Rounding to the nearest 10, 100, 1000, 10,000 and 100,000.</p> <p>Add and subtract</p>	<p>Skills: Multiply and divide mentally using known facts.</p> <p>Identify multiples and factors and use these terms with understanding.</p> <p>Find common factors of two whole numbers</p> <p>Identify prime numbers and explain how they are different from composite numbers</p> <p>Understand the meaning of square and cube numbers and be able to use their notations.</p> <p>Multiply and divide</p>	<p>Skills: Use a formal written method for multiplication and division up to four digits and with remainders. (Multiply 4-digit by 2-digit and divide 4-digit by 1-digit)</p> <p>Understand the relationship between multiplication and division and use the inverse to check answers.</p> <p>Multiply proper</p>	<p>Skills: Recognise and use thousandths and relate them to tenths, hundredths and other decimal equivalences</p> <p>Read, write, order and compare decimal up to three places.</p> <p>Round decimals up to two places to the nearest whole number and one decimal place.</p> <p>Recognise the per cent symbol and understand that percent relates to number or parts per</p>	<p>Skills: Measure and draw given angles and measure them in degrees accurately</p> <p>Know and identify the features of triangle, rectangle and regular polygons.</p> <p>Identify angles at a point, around a point, on a straight line and in a triangle.</p> <p>Know the difference between regular and irregular polygons.</p> <p>Use the properties of rectangles to find</p>	<p>Skills: Solve problems involving numbers up to three decimal places.</p> <p>Solve problems which require knowing percentage and decimal equivalence e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$</p> <p>To understand negative numbers and solve problems</p> <p>Convert between different unit of metric measure e.g. km and m, l and ml etc.</p> <p>Understand how to</p>

<p>mentally using increasingly larger numbers.</p> <p>Using a formal written method to add and subtract numbers with more than four digits.</p> <p>Solving multi-step problems using rounding, inversion and estimation to check reliability and accuracy of answers.</p>	<p>whole numbers by 10, 100 and 1000.</p> <p>Use knowledge of multiples of 10, 100 and 1000 to answer related questions.</p> <p>Identify, name and write equivalent fractions.</p> <p>Compare and order fractions greater and less than 1</p> <p>Add and subtract fractions with the same denominator</p> <p>Add 3 or more fractions by finding a common denominator</p> <p>Add and subtract fractions to a mixed number including two mixed numbers</p>	<p>fractions and mixed numbers by whole numbers supported by concrete/pictorial resources.</p> <p>Multiply unit and non-unit fractions by an integer</p> <p>Multiply mixed numbers by integers</p> <p>Calculations fractions of quantity</p> <p>Find fractions of an amount</p> <p>Read and write decimal numbers as fractions.</p>	<p>hundred.</p> <p>Write percentages as a fraction (out of 100).</p> <p>Measure and calculate perimeter of rectilinear shapes and apply this knowledge to calculate unknown side lengths.</p> <p>Find the area of rectangles, compound shapes and irregular shapes.</p> <p>Read, interpret and draw bar charts and line graphs as well as two-way tables</p> <p>Solve comparison, sum and difference problems using bar charts and line graphs.</p> <p>Complete, read and interpret information in tables, including timetables.</p>	<p>missing lengths and angles in shapes</p> <p>Identify 3D shapes, including cubes and cuboids using knowledge of 2D shapes.</p> <p>Read, write and plot co-ordinates in the first quadrant</p> <p>Identify, describe and represent the position of a shape following a reflection or translation.</p> <p>Adding (crossing the whole) and subtracting decimals including with the same number of decimal places</p> <p>To complete decimal sequences</p> <p>Multiplying and dividing decimals by 10, 100 and 1000.</p>	<p>use equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>Solve problems involving converting between units of time.</p> <p>To know what the volume (cubes/ cuboids) and to compare and estimate volume including finding the capacity.</p>
<p>Outcome: To use mental and written methods for addition</p>	<p>Outcome: To be able to multiply and divide mentally</p>	<p>Outcome: To use mental and written methods for multiplication</p>	<p>Outcome: To read, write, order, compare and round decimals</p>	<p>Outcome: To be able to use a protractor to draw, measure and find missing angles</p>	<p>Outcome: To be able to convert between different units of</p>

	and subtraction efficiently	To be able to use fraction understanding to add and subtract any fraction	and division including fractions	To understand what a percent is To interpret, read and solve information in tables, charts, graphs		measure including metric and imperial
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Year 6	Topic: Number	Topic: Number Measurement	Topic: Number	Topic: Number Measure	Topic: Geometry	Topic: Consolidation SATS Y7 Sequences
	Concept: Place Value Addition Subtraction Multiplication Division	Concept: Fractions Converting Units	Concept: Ratio Algebra Decimals	Concept: Fraction, decimals and percentages Area, perimeter and volume Statistics	Concept: Shape Position and Direction Preparation for SATS	Concept: Revision of topics Sequences
	Skills: Read, write, order and compare numbers up to 10,000,000. Find powers of 10 Compare and order any digit and determine the value of each digit. Rounding whole numbers to a required degree of accuracy. Use negative numbers in context and calculate intervals across zero.	Skills: Find equivalent and common factors to simplify fractions and common multiples to find equivalences. Compare and order fractions, including fractions > 1 Add and subtract fractions with different denominators and mixed fractions. To solve multi-step problems with fractions Multiply integers with fractions	Skills: Use ratio language – ‘For every’ Use objects and diagrams to compare ratios and fractions. Use the colon notation as the ratio symbol, and link the language ‘for every’ Begin to calculate ratios to find both a part and a whole. Enlarge shapes using scale factors Find scale factors when given similar shapes	Skills: Convert fraction to percentage using equivalent fraction to ensure denominator is 100 Find common equivalent fraction, percentage and decimals Convert between fractions, percentages and decimals to compare and order Find percentage of an amount starting with 50%, 25%, 10% and 1% only and then building	Skills: Measure with a protractor Draw lines and angles accurately To know the total angles on a straight line To know angles around a point equal to 360 ° Recognise that vertically opposite angles share a vertex Explore interior angles of a triangle which add up to 180 degrees.	Skills: Investigations and Problem solving Across a range of topics Develop calculator skills

<p>Add and subtract any integer</p> <p>Find common factors, multiples including prime, square and cube numbers</p> <p>Multiply multi-digit numbers using the formal written method up to 4 by 2 digit</p> <p>Use short and long division including with remainders</p> <p>Solve multi-step problems with the four operations</p> <p>To use order of operations</p>	<p>Multiply simple pairs of proper fractions, writing the answer in its simplest form.</p> <p>Divide fractions by integers</p> <p>Find fraction of amounts including finding the whole</p> <p>To convert and calculate with metric measures including miles and kilometres</p> <p>To convert between imperial measures</p>	<p>Solve ratio and proportion problems</p> <p>Find and solve one and two step rules and equations</p> <p>To form expressions and using the concept of substitution</p> <p>Understand place value up to 3 decimal places</p> <p>Multiply and Divide whole numbers and decimals by 10,100 and 1000</p> <p>Multiply and Divide decimals by integers</p> <p>Apply understanding of division to solve problems using division up to 2 decimal places.</p> <p>Convert a decimal to a fraction and simplify</p> <p>Convert fraction to decimal finding the equivalent fraction where the denominator is 10, 100</p>	<p>onto multiples of 10% and 5%</p> <p>Use inverse to find missing values when solving a percentage problem</p> <p>Find and draw rectilinear shapes that have the same area.</p> <p>Calculate area and perimeter of rectilinear shapes</p> <p>Explore that shapes with the same area can have the same or different perimeters.</p> <p>Work out the area of different triangles by counting.</p> <p>Use the formula, $\text{base} \times \text{perpendicular height} \div 2$ to calculate the area of a variety of triangles</p> <p>Find the area of a parallelogram.</p> <p>Find volume of cuboids by counting cubes and using formula $(l \times w \times h)$</p>	<p>Find missing angles in right angle triangles and isosceles triangles</p> <p>Explore angles in quadrilateral that add up to 180</p> <p>Explore angles in polygons</p> <p>Draw shapes accurately</p> <p>Identify nets of 3D shapes</p> <p>Describe positions on the full coordinate grid.</p> <p>Describe positions on a four-quadrant grid.</p> <p>Draw and translate simple shapes on the coordinate plane and reflect them in the axes.</p>	
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			<p>1000, so you are able to divide.</p> <p>Understand the fraction line is same a division.</p>	<p>Read and interpret line graphs</p> <p>Draw Line graphs</p> <p>Solve problems using line graphs</p> <p>Label parts of a circle</p> <p>Read and Interpret pie charts</p> <p>Draw Pie charts using knowledge of angles</p> <p>Find the mean using formula Mean = Total ÷ number of items.</p>		
	<p>Outcome: To be able to use written methods confidently</p>	<p>Outcome: To use methods of fractions to solve problems</p>	<p>Outcome: To be able to understand the ratio symbol to solve problems To be able to efficiently multiply and divide</p>	<p>Outcome: To be able to convert fractions, decimals and percentages To calculate the area and perimeter of shapes</p>	<p>Outcome: To measure, accurately draw angles and solve missing angle problems To describe positions on a full coordinate grid to translate and reflect</p>	<p>Outcome: To begin to develop key skills that will be used in KS3</p>

Year 7	Topic: Algebraic Thinking	Topic: Number Place Value and Proportion	Topic: Applications of Number	Topic: Directed Numbers Fractional Thinking	Topic: Lines and Angles	Topic: Reasoning with number
	Concept: Sequences Understanding algebraic notation Equality and Equivalence	Concept: Place Value with integers and decimals Fraction Decimal equivalence	Concept: Solving problems using four operations Fractions and percentages of amounts	Concept: Operations and equations with directed number Addition and subtraction of fractions	Concept: Constructing, measuring and using algebraic notation Developing geometric reasoning	Concept: Develop number sense Sets and Probability Prime numbers and proof
	Skills: Describe and continue sequences in graphs, tables and diagrams as well as in numbers. Identify linear and non- linear sequences and be able to continue them Explain the term to term rule and find missing terms Find input and output using a single function machine	Skills: Recognise place value, write integers in words and figures up to 1 billion Work out intervals on a numberline and position integers Compare and order integers using signs up to 1 billion =, ≠, <, >, ≤, ≥ Understand place value of decimals and position on a number line	Skills: Understand mental strategies for addition and subtraction Use formal methods for addition and subtractions Solve problems in different contexts linked to measure and statistics Add and subtract numbers giving in standard form	Skills: Understand and use representations of directed numbers Order directed number using a number line and appropriate symbols Perform calculations that cross zero Add and subtract directed numbers Multiply and divide directed numbers	Skills: Understand and use letter and labelling conventions Draw and measure line segments including geometric figures Describe angles as a measure of a turn Classify a range of angles Measure and draw angles up to 180 degrees using a protractor	Skills: Know and use mental addition and subtraction strategies for integers Known and use mental multiplication and division strategies for integers Know and use mental arithmetic strategies for decimals and fractions Use estimation as a method for checking mental calculations

Using algebraic expressions to generalise diagrams and letters	Round numbers to 1 significant number	Understand multiples and factors	Use a calculator to solve directed number calculations	Measure and draw angles between 180 and 360 degrees using a protractor	Use known number and algebraic facts to derive other facts
Begin to understand simple expression and use them with a function machine	Begin to use standard form (H)	Use formal methods to multiply and divide integers	Evaluate algebraic expressions with directed numbers	Identify parallel and perpendicular lines	Know when to use mental, formal written or calculator methods
Substitute values into single expressions	Represent fractions on diagrams and on a number line	Understand the order of operation	Solve two step equations	Recognise and describe properties of different triangles	Identify and represent sets
Find functions, substitute values and generate sequences using two step expressions	Convert fractions and decimals including tenths, hundredths, fifths, quarters, eighths and thousandths	Solve problems linked to measures and statistics	Use order of operations	Recognise and describe properties of different quadrilaterals	Interpret and create Venn diagrams
Begin to represent one and two step functions graphically	Convert fluently between fractions, percentages and decimals	Explore multiplication and division in algebraic expressions	Find roots of positive numbers (H)	Recognise and identify polygons up to a decagon	Understand and use the intersection and union of sets
Understand the meaning of equivalence and the use of the = sign	Use fractions to interpret pie charts	Find fraction and percentage of an amount and apply to solve problems greater than 1 and 100%	Explore higher powers and roots (H)	Construct triangles using side-side-side (SSS) Side-angle-side (SAS) Angle-side-angle (ASA)	Understand and use the complement of a set (H)
Solve one step linear equations using inverse operations	Explore fractions above one and convert to decimals and percentages		Represent fractions in various ways	Construct complex polygons	Know and use the vocabulary of probability
Understand the meaning of like and unlike terms and being			Convert mixed numbers into improper fractions	Interpret pie charts using proportion	Generate sample spaces for single events
			Add and subtract unit and non-unit fractions with the same denominator	Interpret and draw pie charts using a protractor	Calculate the probability of a single event
			Add and subtract fractions with integers		Understand and use the probability scale
			Find equivalent fractions		Know that the sum of probabilities for all possible outcomes is 1

to simplify algebraic expressions				<p>Add and subtract unit and non-unit fractions with the different denominator – using multiples</p> <p>Add and subtract mixed numbers and improper fractions</p> <p>Add and subtract fractions and decimals</p> <p>Solving fractions in algebraic contexts</p> <p>Add and subtract algebraic fractions (H)</p>	<p>Understand and use angles on a straight line and on a point</p> <p>Understand and use equality of vertically opposite angles</p> <p>Know and apply sums of angles in a triangle and a quadrilateral</p> <p>Solve angles problems</p> <p>Find and use the angles sum of a polygon (H)</p> <p>Investigate angles in parallel lines</p> <p>Use parallel line angle rules</p> <p>Use known facts to obtain simple proof</p>	<p>Find and use factors and multiples</p> <p>Recognise and identify prime numbers</p> <p>Recognise and identify square numbers and triangular numbers</p> <p>Find lowest common multiples and highest common factors</p> <p>Use factor trees to write a number as a product of its prime factors</p> <p>Use a Venn diagram to calculate HCF and LCM (H)</p> <p>Make and test conjectures and Use counter examples to disprove a conjecture</p>
Outcome: To understand basic concepts on Algebra and write expressions.	Outcome: To use skills of number knowledge and apply to solve real-life problems	Outcome: To use clear written methods and apply to solve real-life problems	Outcome: To understand all methods of fraction calculations and apply to solving problems	Outcome: To understand how to use equipment to construct shapes. To understand all properties of shapes and lines including their angles	Outcome: To understand the different types of numbers and how they can be used to solve calculations and problems	

Year 8	Topic: Proportional Reasoning	Topic: Representations	Topic: Algebraic Techniques	Topic: Developing Number	Topic: Developing Geometry	Topic: Reasoning with Data
	Concept: Ratio and Scale Multiplicative Change Multiplying and Dividing fractions	Concept: Equations of a straight line Interpreting and representing data Finding probability	Concept: Brackets, Equations & Inequalities Sequences Indices	Concept: Fractions and Percentages Standard Index Form Number sense	Concept: Angles Area of Trapeziums and circles Line of symmetry and reflection	Concept: Data Handling Measures of location
	Skills: Understand the meaning of ratio and use the notation Simplify ratios in its simplest form Solve ratio problems by dividing in a given ratio Link ratios to other contexts such as fractions, pie and gradient. Explore conversion graphs and convert between money and units of measures	Skills: Draw, plot and find co- ordinates on a four- quadrant grid Recognise lines that form $y = x$, $y = kx$, $y = x + a$ Explore positive and negative gradients and know how to form lines $y = mx + c$ Link graphs to sequences and explore linear and non-linear graphs To draw and interpret scatter diagrams and	Skills: Identify variables and express relations between variables algebraically and graphically Begin to model situations mathematically and express the results using a range of formal mathematical representations Substitute numerical values into formulae and expressions, including scientific formulae	Skills: Convert fluently between key fractions decimals and percentages Calculate key fractions, decimals and percentages of an amount with and without a calculator Convert between decimals and percentages greater than 100% Calculate percentage increase and decrease using a multiplier Express one number as a fraction or a percentage of	Skills: Understand and use basic angle rules and notation Investigate angles between parallel lines and the transversal Identify and calculate with co-interior, alternate and corresponding angles Solve complex problems with parallel line angles Construct triangles and special quadrilaterals	Skills: Set up a statistical enquiry and design and criticise questionnaires Draw and interpret pictograms, bar charts, multiple bar charts and vertical line charts Draw and interpret line charts and pie charts Choose the most appropriate diagram for given set of data

Explore direct proportion	drawing and using the line of best fit	Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors	another with and without a calculator	Identify and calculate with sides and angles in special quadrilaterals	Represent and interpret grouped quantitative data
Understand scale factor and use to interpret scale diagrams and maps	Identify different types of data and be able to read an interpret ungrouped and grouped frequency tables, discrete dat and two-way tables	Simplify and manipulate algebraic expressions to maintain equivalence by:	Work with percentage change	Understand and use the properties of diagonals of quadrilaterals	Find and interpret the range
Multiply and divide fractions by unit fractions and integers	Construct sample space for one or more events	- collecting like terms	Choose appropriate methods to solve percentage problems and complex percentage problems	Understand and use the sum of exterior angles of any polygon	Compare distributions using charts
Multiply and divide improver fractions and mixed numbers	Find the probability from a sample space diagram, two-way tables, Venn Diagram	- multiplying a single term over a bracket	Find the original amount given the percentage less than OR greater than 100% (H)	Calculate and use the sum of the interior angles in any polygon	Identify misleading graphs
Multiply and divide algebraic fractions	Use product rule for total possible outcomes	- taking out common factors	Investigate positive and negative powers of 10	Prove simple geometric facts (H)	Understand and use the mean, median and mode
		- expanding products of two or more binomials	Work with numbers greater than 1 in standard form	Construct an angle bisector (H)	Find the mean from an grouped and ungrouped frequency table (H)
		Understand and use standard mathematical formulae; rearrange formulae to change the subject	Work with numbers between 0 and 1 in standard form	Construct a perpendicular bisector of a line segment (H)	Identify outliers on graphs and tables
		Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)	Compare, order and mentally calculate numbers in standard form	Calculate the area of triangles, rectangles and parallelograms	Compare distributions using averages and the range
			Add, subtract, multiply and divide numbers in standard form	Calculate the area of a trapezium	

			<p>Generate terms of a sequence from either a term-to-term or a position-to-term rule</p> <p>Recognise arithmetic sequences and find the nth term</p> <p>Recognise geometric sequences and appreciate other sequences that arise.</p> <p>Adding and subtracting expressions with indices</p> <p>Simplify algebraic expressions by multiplying and dividing</p> <p>Use the law of indices</p> <p>Finding powers of powers (H)</p>	<p>Use calculator to work with numbers in standard form</p> <p>Use negative and fractional indices (H)</p> <p>Round numbers to powers of 10 and 1 significant figure</p> <p>Round numbers to a given number of decimal places</p> <p>Estimate the answer to a calculation</p> <p>Understand and use error interval notation (H)</p> <p>Calculate using the order of operations, money</p> <p>Convert metric measures of lengths, weights and capacity</p> <p>Convert metric units of area and volume (H)</p> <p>Solve problems involving time and the calendar</p>	<p>Calculate the perimeter and area of compound shapes (1)</p> <p>Calculate the area of a circle and parts of a circle with AND without a calculator</p> <p>Recognise line symmetry</p> <p>Reflect a shape in a horizontal or vertical line (shapes touching the line and not touching the line)</p> <p>Reflect a shape in a diagonal line 1 (shapes touching the line and not touching the line)</p>	
	Outcome: To know how to use the correct methods to scale and solve real-life problems	Outcome: To draw straight-line graphs and represent data in different forms.	Outcome: To apply algebra skills and methods to solve problems.	Outcome: To apply number knowledge and understand calculator and non-calculator method to use when solving real-life problems	Outcome: To know properties, methods and angle rules to solve complex problem	Outcome: To interpret and find averages of a set of given data linked to real-life.

