

Edward Peake CofE Middle School
Mathematics Curriculum Progression

Curriculum Intent:

The intention of the mathematics curriculum is to provide all pupils with the depth of knowledge and mathematical skills to be able to solve new problems in unfamiliar situations. Pupils will be able to apply the techniques and skills learnt in mathematics lessons to their mathematical studies, all areas of the curriculum and everyday life.

Our main aims are to:

- Live: Ensure every pupil becomes fluent in the fundamentals of mathematics in order to make appropriate choices from a whole toolkit of methods, strategies and approaches preparing them for day to day life and the workplace
- Love: Ensure pupils have the relevant mathematical knowledge and skills to think mathematically explore relationships and connect ideas
- Learn: Develop curious and creative learners who are intrigued by the representations, structures and language of mathematics

The study of mathematics at Edward Peake is underpinned by four main concepts: fluency, mathematical thinking, representations and structures and the language of mathematics.

Fluency:

- Pupils quickly and efficiently recall facts and procedures
- Pupils move between different contexts confidently
- Pupils understand different representations of concepts
- Pupils recognise relationships and connections within mathematics
- Pupils have a toolkit of methods, strategies and approaches

Mathematical thinking:

- Pupils look for patterns to discern structure
- Pupils explore relationships and make connections between ideas
- Pupils reason logically

- Pupils explain and discuss ideas, conjectures and proofs

Representations and Structure

- Pupils use a variety of representations to develop a deep understanding of concepts
- Pupils use Stem sentences to represent concepts
- Pupils use representations to understand and explore the structure of mathematics

Language of mathematics

- Pupils are confident using mathematical language in their written work in maths lessons
- Pupils use mathematical language to discuss mathematics
- Pupils explain their reasoning using mathematical language

Skills and Knowledge	Year 5	Year 6	Skills and Knowledge	Year 7	Year 8
Place Value: Counting	<p>Know how to count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Know how to count forwards and backwards with positive and negative whole numbers, including through zero</p>		<p>Number: Understand Place Value and Representing Number <i>Pupils will consolidate their numerical and mathematical capability from KS2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots</i></p>	<p>Understand and know how to use place value</p> <p>Know how to compare and order numbers</p> <p>Know how to round to powers of ten and 1 Significant Figure</p> <p>Write numbers with 1 significant figure in standard form</p>	<p>Revisit and extend year 7 comparing and ordering numbers</p> <p>Know how to write numbers of any size in standard form</p> <p>Know how to use negative and fractional indices</p> <p>Revisit and extend Year 7 rounding</p> <p>Know how to round to given number of decimal places and significant figures</p>
Place Value: Represent	<p>Know how to read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>Know how to read Roman</p>	<p>Know how to read and write numbers up to 10 000 000 and determine the value of each digit</p>			

	numerals to 1000 (M) and recognise years written in Roman numerals.				
Place Value: Use Place Value and Compare	Know how to order and compare numbers to at least 1 000 000 and determine the value of each digit	Know how to order and compare numbers up to 10 000 000 and determine the value of each digit			
Place Value: Problems and Rounding	Know how to interpret negative numbers in context, Know how to round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 Know how to solve number problems and practical problems that involve all of the above	Know how to round any whole number to a required degree of accuracy Know how to use negative numbers in context, and calculate intervals across zero Know how to solve number and practical problems that involve all of the above			
	Where in the curriculum this is taught: Autumn Block 1	Where in the curriculum this is taught: Autumn 1		Where in the curriculum this is taught: Autumn Block 4 Spring Block 2 Spring Block 4 Summer Block 5	Where in the curriculum this is taught: Spring Block 5 Spring Block 6
Addition and Subtraction: Recall, Represent and Use	Know how to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy		Number: Calculations <i>Pupils select and use appropriate calculation strategies to solve increasingly</i>	Know how to use the four operations with positive integers and decimals Know how to use a	Know how to multiply and divide fractions Know how to multiply and divide mixed numbers

<p>Addition and Subtraction: Calculations</p>	<p>Know how to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>Know how to add and subtract numbers mentally with increasingly large numbers</p>	<p>Know how to perform mental calculations, including with mixed operations and large numbers</p> <p>Know how to use the order of operations to carry out calculations involving the four operations</p>	<p><i>complex problems to include decimals and fractions.</i></p>	<p>calculator</p> <p>Know how to multiply and divide by positive powers of ten</p> <p>Know how to order of operations using the priority triangle</p> <p>Know how to multiply by 0.1 and 0.01</p>	<p>Know how to convert between units of time</p> <p>Know how to revisit order of operations</p> <p>Know how to calculate with money</p> <p>Know how to use estimation</p> <p>Know how to convert metric units of length and area</p> <p>Know how to use error interval notation</p>
<p>Addition and Subtraction: Solve Problems</p>	<p>Know how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>Know how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>			
<p>Multiplication and Division: Recall, Represent and Use</p>	<p>Know how to identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers</p> <p>Know how to establish whether a number up to 100 is prime and recall prime numbers up to 19</p>	<p>Know how to identify common factors, common multiples and prime numbers</p> <p>Know how to use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>			

	Know how to recognise and use square numbers and cube numbers, and the notation for squared (2^2) and cubed (3^3)				
Multiplication and Division : Calculations	<p>Know how to multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p> <p>Know how to multiply and divide numbers mentally drawing upon known facts</p> <p>Know how to divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>Know how to multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p>	<p>Know how to multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>Know how to divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <p>Know how to divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>Know how to perform mental calculations, including with mixed operations and large numbers</p>			
Multiplication and Division: Solve	Know how to solve problems involving multiplication and division	Know how to solve problems involving addition, subtraction, multiplication and division			

<p>Problems</p>	<p>including using their knowledge of factors and multiples, squares and cubes</p> <p>Know how to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p>				
<p>Multiplication and Division: Combined Operations</p>	<p>Know how to solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p>	<p>Know how to use their knowledge of the order of operations to carry out calculations involving the four operations</p>			
<p>Fractions: Calculations</p>	<p>Know how to add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Know how to multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p>	<p>Know how to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>Know how to multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $4 \frac{1}{2} \times 2 \frac{1}{2} = 8 \frac{1}{2}$]</p> <p>Know how to divide proper fractions by whole numbers [for example, $3 \frac{1}{2} \div 2 = 6 \frac{1}{2}$]</p>			

<p>Decimals: Calculations and Problems</p>	<p>Know how to solve problems involving numbers up to three decimal places. Including adding and subtracting decimals</p>	<p>Know how to multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</p> <p>Know how to multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>Know how to use written division methods in cases where the answer has up to two decimal places</p> <p>Know how to solve problems which require answers to be rounded to specified degrees of accuracy</p>			
	<p>Where in the curriculum this is taught:</p> <p>Autumn Block 2 Autumn Block 4 Spring Block 1 Spring Block 3 Summer Block 1</p>	<p>Where in the curriculum this is taught:</p> <p>Autumn 2 Autumn 3 Spring 1</p>		<p>Where in the curriculum this is taught:</p> <p>Spring Block 1 Spring Block 2 Spring Block 4 Spring Block 5 Summer Block 3</p>	<p>Where in the curriculum this is taught:</p> <p>Autumn Block 3 Spring Block 6</p>
<p>Fractions: Recognise and Write</p>	<p>Know how to identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Know how to recognise</p>		<p>Number : Understanding Fractions and Decimals <i>Pupils consolidate their numerical and mathematical capability from KS2</i></p>	<p>Know how to Interchange between fractions and decimals below 1 Explore fractions above 1 Know how to find fractions of an amount</p>	<p>Know how to express one number as a fraction of another</p> <p>Explore calculator and non-calculator methods</p>

	<p>mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $5\frac{2}{6} + 5\frac{4}{6} = 5\frac{6}{6} = 1\frac{5}{6}$]</p>		<p><i>and extend their understanding of the decimals and fractions.</i></p>	<p>up to 1 Know how to solve problems with fractions greater than 1</p>	
<p>Fractions: Compare</p>	<p>Know how to compare and order fractions whose denominators are all multiples of the same number</p>	<p>Know how to use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>Know how to compare and order fractions, including fractions > 1</p>			
<p>Decimals : Recognise and Write</p>	<p>Know how to read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]</p> <p>Know how to recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p>	<p>Know how to identify the value of each digit in numbers given to three decimal places</p>			
<p>Decimals: Compare</p>	<p>Know how to round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>Know how to read, write, order and compare</p>				

	numbers with up to three decimal places				
	Where in the curriculum this is taught: Spring 2 Spring 3	Where in the curriculum this is taught: Autumn 3 Spring 1		Where in the curriculum this is taught: Autumn Block 5 Spring Block 3	Where in the curriculum this is taught: Spring Block 4
Fractions, Decimals and Percentages	<p>Know how to recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal</p> <p>Know how to solve problems which require knowing percentage and decimal equivalents of $\frac{2}{1}$, $\frac{4}{1}$, $\frac{5}{1}$, $\frac{5}{2}$, $\frac{5}{4}$ and those fractions with a denominator of a multiple of 10 or 25.</p>	<p>Know how to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p>Know how to associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{8}{3}$]</p>	<p>Number : Percentages <i>Pupils consolidate and extend their understanding of the equivalence of percentages, fraction and decimals</i> <i>Pupils use appropriate calculation strategies to solve increasingly complex problems involving percentages.</i></p>	<p>Know how to Interchange between fractions, decimals and percentages up to 100%</p> <p>Explore fractions, decimals and percentages over 100%</p> <p>Know how to find percentage of amounts using mental and calculator methods up to 100%</p> <p>Explore percentage of amounts using mental and calculator methods over 100%</p>	<p>Know how to calculate a percentage increase and decrease</p> <p>Know how to use multipliers</p> <p>Know how to express one quantity as a percentage of another to compare two quantities using percentages</p> <p>Know how to work with percentages greater than 100%</p> <p>Know how to find an the original amount after a percentage change</p>
	Where in the curriculum this is taught: Spring 3	Where in the curriculum this is taught: Spring		Where in the curriculum this is taught:	Where in the curriculum this is taught:

		Spring 2		Autumn Block 5 Spring Block 3	Spring Block 4
Algebra		<p>Know how to use simple formulae</p> <p>Know how to generate and describe linear number sequences</p> <p>Know how to express missing number problems algebraically</p> <p>Know how to find pairs of numbers that satisfy an equation with two unknowns</p> <p>Know how to enumerate possibilities of combinations of two variables.</p>	<p>Algebra : Understand Notation and Substitute <i>Pupils will learn how to use algebra to generalise the structure of arithmetic including to formulate mathematical relationships.</i> <i>Pupils will learn how to substitute values into expressions.</i></p>	<p>Know how to use function machines</p> <p>Know algebraic notation</p> <p>Know how to substitute into expressions</p> <p>Know how to calculate using simple algebraic fractions</p> <p>Explore related algebraic expressions</p>	<p>Know how to use more complicated expressions when</p> <ul style="list-style-type: none"> <input type="checkbox"/> Using function machines <input type="checkbox"/> Using algebraic notation <input type="checkbox"/> Substituting into expressions <p>Know how to work with indices</p> <p>Explore powers of powers</p>
				<p>Where in the curriculum this is taught:</p> <p>Autumn Block 2 Spring Block 4 Spring Block 5 Summer 3</p>	<p>Where in the curriculum this is taught:</p> <p>Spring Block 1 Spring Block 3</p>
			<p>Algebra: Equivalence and Proof <i>Pupils will learn to rearrange and simplify expressions.</i></p>	<p>Understand and know the difference between equality and equivalence</p> <p>Know how to collect like terms and directed number</p>	<p>Know how to expand over a single bracket</p> <p>Know how to simplify expressions involving brackets</p> <p>Know how to identify and use formulae,</p>

				<p>Understand simple algebraic fractions</p> <p>Explore related algebraic expressions</p>	<p>expressions, identities and equations</p> <p>Know how to expand a pair of binomials</p>
				<p>Where in the curriculum this is taught:</p> <p>Autumn Block 3 Spring Block 4 Spring Block 5 Summer Block 3</p>	<p>Where in the curriculum this is taught:</p> <p>Spring Block 1</p>
			<p>Algebra: Solve Equations and Inequalities <i>Pupils will learn how to solve increasingly complex linear equations and inequalities</i></p>	<p>Know how to form and solve one step equations</p> <p>Know how to form and solve two step equations</p>	<p>Know how to solve inequalities</p> <p>Know how to form and solve equations with brackets</p> <p>Know how to identify and use formulae, expressions, identities and equations</p> <p>Know how to form and solve equations and inequalities with unknowns on both sides</p>
				<p>Where in the curriculum this is taught:</p>	<p>Where in the curriculum this is taught:</p>

				Autumn Block 3 Spring Block 4	Spring Block 1
			Algebra : Linear and Non-linear Graphs <i>Pupils will develop algebraic and graphical fluency, including understanding linear and simple quadratic functions</i>	Know how to represent functions graphically	Know how to read, interpret and use conversion Graphs Know how to recognise and use direct proportion graphs Know how to use coordinates to Plot graphs of the form $y = k, x = k$ $y = kx$ $y = x + c$ $y = mx + c$ Explore gradient and the y-intercept Explore non - linear graphs
				Where in the curriculum this is taught: Autumn Block 2	Where in the curriculum this is taught: Autumn Block 2 Autumn Block 4
			Algebra: Sequences <i>Pupils develop algebraic fluency and will learn how to move freely between different numerical,</i>	Know how to recognise linear and non-linear sequences Know how to generate sequences from an	Know how to recognise linear and non-linear sequences for more complex rules Know how to generate

			<i>algebraic and diagrammatic representations</i>	algebraic rule	sequences from a more complex algebraic rule Know how to find the rule for the nth term of a linear sequences
	Where in the curriculum this is taught:	Where in the curriculum this is taught:		Where in the curriculum this is taught: Autumn Block 1 Autumn Block 2	Where in the curriculum this is taught: Spring Block 2
Measurements: using Measures	<p>Know how to convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>Know how to understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Know how to use all four operations to solve problems involving measure [for example, length, mass, volume] using decimal notation,</p>	<p>Know how to solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>Know how to use, read, write and convert between standard units, converting measurements of length, mass and volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</p> <p>Know how to convert between miles and kilometres</p>	Ratio, Proportion and Rates of Change: Multiplicative Relationships <i>Pupils will learn to solve problems involving direct and inverse proportion. They will understand that a multiplicative relationship between two quantities can be represented as a fraction or a ratio.</i>	<p>Know how to convert metric unit of measures</p> <p>Know how to use multiplicative relationships between known facts</p>	<p>Understand and know how to use scale factors</p> <p>Know how to use scale diagrams and maps</p> <p>Know how to use currency conversions to solve problems</p> <p>Know how to use conversion Graphs</p> <p>Know how to solve problems using knowledge of similar shapes</p> <p>Know how to direct proportion Graphs</p>

	including scaling.				
Measure: Money	Know how to use all four operations to solve problems involving measure [for example money]				
Measure : Time	Know how to solve problems involving converting between units of time Know how to use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa,	Know how to solve problems converting between standard units of measure, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa.			
	Where in the curriculum this is taught: Summer 1 Summer 4 Summer 5	Where in the curriculum this is taught: Spring 4		Where in the curriculum this is taught: Spring Block 2 Summer Block 3	Where in the curriculum this is taught: Autumn Block 2 Spring Block 6
Ratio and Proportion		Know how to solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Know how to solve problems involving the calculation of percentages [for example, of measures, and such as 15% of	Ratio, Proportion and Rates of change: Ratio and Rates <i>Pupils will apply their use of ratio notation to solve increasingly complicated problems</i>		Understand and know how to use ratio notation Know how to divide in a ratio Know how to work out parts and wholes when working with ratios Know and understand

		<p>360] and the use of percentages for comparison</p> <p>Know how to solve problems involving similar shapes where the scale factor is known or can be found</p> <p>Know how to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>			<p>that Pi is a ratio</p> <p>Know how to use the for 1:n</p> <p>Know how to explain the link between gradient and ratio</p>
	Where in the curriculum this is taught:	Where in the curriculum this is taught:		Where in the curriculum this is taught:	Where in the curriculum this is taught:
		Spring 6			Autumn Block 1 Autumn Block 4
Measurement : Area, Perimeter and Volume	<p>Know how to measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Know how to calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</p> <p>Know how to estimate volume [for example,</p>	<p>Know how to recognise that shapes with the same areas can have different perimeters and vice versa</p> <p>Know how to recognise when it is possible to use formulae for area and volume of shapes</p> <p>Know how to calculate the area of parallelograms and triangles</p> <p>Know how to calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to</p>	Geometry and Measures: Perimeter, Area and Volume <i>Pupils will derive and apply formulae to calculate and solve problems involving perimeter, area and volume.</i>	<p>Know how to solve perimeter problems</p> <p>Know how to calculate areas of rectangles parallelograms and triangles</p> <p>Know how to calculate the Area of Trapezium</p>	<p>Know how to calculate the circumference of a circle</p> <p>Know how to calculate the area of a trapezium</p> <p>Know how to calculate the area of a circle</p> <p>Know how to calculate the area of compound shapes</p> <p>Know how to solve complex problems involving the area of shapes</p>

	using 1 cm ³ blocks to build cuboids (including cubes)] and capacity [for example, using water]	other units [for example, mm ³ and km ³].			
	Where in the curriculum this is taught: Autumn 5 Summer 5	Where in the curriculum this is taught: Spring 5		Where in the curriculum this is taught: Spring Block 1 Spring Block 2	Where in the curriculum this is taught: Autumn Block 1 Summer Block 2 Autumn Block 4
Geometry : Position and Direction	Know how to identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Know how to describe positions on the full coordinate grid (all four quadrants) Know how to calculate the draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	Geometry and Measures: Construct and Transform Geometric Figures <i>Pupils will learn how to draw and measure line segments, angles and 2-D shapes using standard ruler and compass construction. They will identify the properties of translations, rotations and reflections applied to given figures. Pupils will know and use the criteria for congruence of triangles</i>	Know how to use the geometric notation Know how to draw lines, angles and simple shapes Know how to recognise and describe parallel and perpendicular lines Know how the names of and how to construct polygons	Know how to work with scale factors Know how to use more complex geometric notation Know how to recognise line symmetry Know how to reflect shapes in a given line Know how to draw using standard ruler and compass construction
	Where in the curriculum	Where in the curriculum this		Where in the	Where in the

	this is taught:	is taught:		curriculum this is taught:	curriculum this is taught:
		Autumn 4		Summer Block 1	Autumn Block 2 Summer Block 1 Summer Block 3
Geometry: Property of 2D Shapes	<p>Know how to use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>Know how to distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p>	<p>Know how to draw 2-D shapes using given dimensions and angles</p> <p>Know how to compare and classify geometric shapes based on their properties and sizes</p> <p>Know how to illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>	<p>Geometry and Measures: Shape Properties <i>Pupils will derive and illustrate properties of 2-D shapes using appropriate language and technologies. They will use the properties of 3-D shapes to solve problems and explain their reasoning using the correct mathematical language.</i></p>	<p>Know how to properties of Triangles and Quadrilaterals</p>	<p>Know how to more complex problems involving properties of triangles and quadrilaterals</p> <p>Know how to explore diagonals of quadrilaterals</p> <p>Know how to find and prove simple Geometric facts</p>
Geometry: Property of 3D Shapes	Know how to identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Know how to recognise, describe and build simple 3-D shapes, including making nets			
	Where in the curriculum this is taught: Summer 2	Where in the curriculum this is taught: Summer 1		Where in the curriculum this is taught: Summer Block 1	Where in the curriculum this is taught: Summer Blocks 1/2/3
Geometry: angles and Lines	Know how to know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	Know how to recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	Geometry and Measures: Angles <i>Pupils will apply the properties of angles at a point, on a straight line and</i>	<p>Know how to solve problems using the sum of angles at a point</p> <p>Know how to solve problems using the sum</p>	<p>Extend Year 7 content</p> <p>Know how to solve problems using the properties of angles in parallel lines and</p>

	<p>Know how to draw given angles, and measure them in degrees (o)</p> <p>identify:</p> <p>Know how to solve problems using the sum of angles at a point and one whole turn</p> <p>Know how to solve problems using the sum of angles at a point on a straight line and half a turn</p>	<p>Know how to find unknown angles in any triangles, quadrilaterals, and regular polygons</p>	<p><i>vertically opposite to solve increasingly complicated problems. They will understand and use the relationship between parallel lines and alternate and corresponding angles. Pupils will 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.</i></p>	<p>of adjacent angles on a straight line</p> <p>Know how to solve problems using the property of vertically opposite angles</p> <p>Know how to solve problems using the sum of angles in Triangles and Quadrilaterals</p> <p>Know how to solve problems using the properties of angles in Parallel Lines</p> <p>Understand and know how to use simple Angle Proofs</p>	<p>Interior and Exterior Angles of Polygons</p> <p>Know how to solve problems using the properties of Angles formed by diagonals of quadrilaterals</p>
	<p>Where in the curriculum this is taught:</p> <p>Summer 2</p>	<p>Where in the curriculum this is taught:</p> <p>Summer 1</p>		<p>Where in the curriculum this is taught:</p> <p>Summer Block 2</p>	<p>Where in the curriculum this is taught:</p> <p>Summer Block 1</p>
			<p>Probability <i>Pupils will learn to record, describe and analyse the frequency of outcomes of simple probability experiments. They will enumerate sets and</i></p>	<p>Know how to solve problems use the language of probability</p> <p>Know how to solve problems using simple probabilities</p> <p>Know how to use the probability scale</p>	<p>Extend Year 7 content</p> <p>Know how to construct and use sample spaces for more than one event</p> <p>Know how to use sample spaces to find probabilities</p>

			<p><i>unions/intersections of sets systematically using tables, grids and diagrams. Pupils will generate sample space diagrams and use these to calculate theoretical probabilities</i></p>	<p>Know how to solve problems use sample Spaces</p> <p>Understand and know how to use set notation, including Venn Diagrams</p> <p>Know the sum of probabilities is 1</p> <p>Know the complement of a Set</p>	<p>Know how to use tables and Venn Diagrams to find probabilities</p> <p>Know how to use the product rule for finding the total number of probabilities</p>
	Where in the curriculum this is taught:	Where in the curriculum this is taught:		Where in the curriculum this is taught:	Where in the curriculum this is taught:
				Summer Block 4	Autumn Block 6
Statistics: Present and Interpret	Know how to complete, read and interpret information in tables, including timetables.	Know how to interpret and construct pie charts and line graphs and use these to solve problems	<p>Statistics: Represent and Interpret Data</p> <p><i>Pupils will describe, interpret and compare observed distributions of a single variable through appropriate graphical representations. They will construct and interpret appropriate charts and diagrams for ungrouped and grouped data.</i></p>	<p>Know how to solve problems with line charts and bar charts</p> <p>Know how to construct and interpret pie charts</p>	<p>Know how to recognise different types of data</p> <p>Know how to construct and interpret frequency tables, grouped and ungrouped data and two way tables</p> <p>Know how to collect data</p> <p>Know how to draw and interpret multiple bar charts</p>

					<p>Know how to draw and interpret line graphs</p> <p>Identify a misleading graphs and explain your reasoning</p>
	<p>Where in the curriculum this is taught:</p> <p>Autumn 3</p>	<p>Where in the curriculum this is taught:</p> <p>Summer 3</p>		<p>Where in the curriculum this is taught:</p> <p>Spring Block 1 Summer Block 1</p>	<p>Where in the curriculum this is taught:</p> <p>Autumn Block 5 Summer Block 4</p>
<p>Statistics: Solve Problems</p>	<p>Know how to solve comparison, sum and difference problems using information presented in a line graph</p>	<p>Know how to calculate and interpret the mean as an average</p>	<p>Statistics: Statistical Measures <i>Pupils will describe, interpret and compare observed distributions of a single variable through appropriate graphical representation involving discrete, continuous and grouped data. Including measures of central tendency and spread.</i></p>	<p>Know how to find the median and range</p> <p>Know how to find the mean</p>	<p>Know how to find the mode</p> <p>Know how to identify outliers</p> <p>Know how to compare distributions using statistical measures</p> <p>Know how to find the mean from a grouped or ungrouped frequency table</p>
	<p>Where in the curriculum this is taught:</p> <p>Autumn 3</p>	<p>Where in the curriculum this is taught:</p> <p>Summer 3</p>		<p>Where in the curriculum this is taught:</p> <p>Autumn Block 4 Spring Block 2</p>	<p>Where in the curriculum this is taught:</p> <p>Summer Block 5</p>
			<p>Statistics: Bivariate</p>		<p>Know how to draw an</p>

			<p>Data <i>Pupils will describe simple mathematical relationships between two variables(bivariate data) and illustrate using scatter graphs.</i></p>		<p>plot a Scatter Graphs</p> <p>Know how to describe the correlation of two variables correlation</p> <p>Know how to draw a lines of best fit and use a line of best fit to make predictions</p> <p>Understand the difference between correlation and causation</p>
	Where in the curriculum this is taught:	Where in the curriculum this is taught:		Where in the curriculum this is taught:	<p>Where in the curriculum this is taught:</p> <p>Autumn Block 5</p>

Curriculum Impact:

Live: Ensure every pupil becomes **fluent** in the fundamentals of mathematics in order to make appropriate choices from a whole toolkit of methods, strategies and approaches preparing them for day to day life and the workplace

- A high proportion of pupils meet age related expectations.
- Pupils make the progress expected of them or better in mathematics.
- Pupils have a positive attitude to learning mathematics. They are confident and keen to be challenged.

Love: Ensure pupils have the relevant mathematical knowledge and skills to **think mathematically** explore relationships and **connect** ideas

- Pupils are able to apply their mathematical knowledge to solve problems in real life contexts
- Pupils believe they can be successful in mathematics lessons
- A high proportion of pupils meet age related expectations

Learn: Develop curious and creative learners who are intrigued by the **representations, structures and language of mathematics**

- Pupils enjoy learning maths.
- Pupils are able to reason mathematically using the correct mathematical language.
- Pupils are able to work collaboratively and independently to solve new problems in an unfamiliar context.
- A high proportion of pupils and in particular disadvantaged pupils meet age related expectations