St Mary's Farnham Royal Church of England Primary School
We aspire to grow as a community through FAITH as a FAMILY. Thriving for all our FUTURES enabling us to FLOURISH

Progression Map **Subject: Maths**

Place Value						
EYFS Blue=Nursery Purple=Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. Nursery: Develop fast recognition of up to 3 objects, without having to count them individually Recite numbers past 5. Know that the last number reached when counting a small set of objects tells you how many there are in total Show 'finger numbers' up to 5. Count objects, actions and sounds. Subitise Link the number symbol (numeral) with its cardinal number value.	Count up to and from 100 Identify the place values of numbers up to 20 Read and write numbers up to 10 1 more/less	Count on in 2, 5, 10 and 3 Identify the place value of numbers including hundreds, tens and units Read and write numbers up to 100	count from 0 in multiples of 4, 8, 50 and 100 find 10 or 100 more or less than a given number 10 and 100 more/less	count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number round any number to the nearest 10, 100 or 1 000 round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero count forwards or backwards in steps of powers of 10 for any given number up to 1000 000 read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	use negative numbers in context, and calculate intervals across zero read, write, order and compare numbers up to 10 000000 and determine the value of each digit Round any whole number to a required degree of accuracy
Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. Count beyond 10 Have a deep understanding of number to 10, including the composition of each number Verbally count beyond 20, recognising the pattern of the counting system Compare numbers Understand the 'one more than/one less than' relationship between consecutive numbers.						
Explore the composition of numbers to 10 Automatically recall number bonds for numbers 0–5 and some to 10. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity						

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Progression Map **Subject: Maths**

Addition and Subtraction						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Experiment with their own symbols and marks as well as numerals. Solve real world mathematical problems with numbers up to 5. Compare quantities using language: 'more than', 'fewer than'. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	Add and subtract using a 2 digit and 1 digit number	Add and subtract three 1-digit numbers and two 2-digit numbers Formal column method	Add and subtract two 2-digit numbers Formal column method	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate		
	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction Use inverse operations to check answers	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why Use inverse operations to check answers	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Progression Map **Subject: Maths**

Multiplication and Division					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Multiply and divide using visual resources	Recall multiplication facts for 2, 5 and 10	Recall multiplication facts for 3, 4 and 8	Recall multiplication facts up to 12 x 12		
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	multiply two-digit and three-digit numbers by a one digit number using formal written layout	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 identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations involving the four operations (BIDMAS)
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving addition, subtraction, multiplication and division solve problems involving similar shapes where the scale factor is known or can be found

Progression Map **Subject: Maths**

Fractions					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Name, recognise and find ½ and ¼ of shapes objects and quantities.	Name, recognise and find 1/3, ¼, 2/4, ¾ of a set of shapes, objects of an amount 1/3 of 12 =	compare and order unit fractions, and fractions with the same denominators Add and subtract fractions with the same denominator (less than 1 whole) Solve fraction based problems recognise and write decimal equivalents to 1 / 4 ; 1 / 2 ; 3 / 4	compare numbers with the same number of decimal places up to two decimal places round decimals with one decimal place to the nearest whole number Add and subtract fractions with the same denominator more than 1 whole Recognise and write decimal equivalents to 1/4, 1/2, 3/4 add and subtract fractions with the same denominator	read, write, order and compare numbers with up to three decimal places round decimals with two decimal places to the nearest whole number and to one decimal place compare and order fractions whose denominators are all multiples of the same number read and write decimal numbers as fractions 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 as a decimal fraction Write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number e.g. 2/5 + 4/5 = 6/5 = 1 1/5 add and subtract fractions with the same denominator and multiples of the same number Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams solve problems which require knowing percentage and decimal equivalents of 1 / 2 , 1 / 4 , 1 / 5 , 2 / 5 , 4 / 5 and those with a denominator of a multiple of 10 or 25.	use common factors to simplify fractions; use common multiples to express fractions in the same denomination Associate a fraction with division and calculate decimal fraction equivalents Use common factors to simplify fractions; use common multiples to express fractions in the same denomination recall and use equivalences between simple fractions, decimals and percentages, including in different contexts add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1 / 4 × 1 / 2 = 1 / 8) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. 1 / 3 ÷ 2 = 1 / 6) divide proper fractions by whole numbers multiply one-digit numbers with up to two decimal places by whole numbers identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places associate a fraction

Progression Map **Subject: Maths**

Ratio and Proportion	
Year 6	solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison solve problems involving similar shapes where the scale factor is known or can be found solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Algebra	
Year 6	express missing number problems algebraically find pairs of numbers that satisfy number sentences involving two unknowns se simple formulae generate and describe linear number sequences

Progression Map **Subject: Maths**

Shape						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns.	Recognise and name 2D and 3D shapes	Identify properties of 2D/3D shapes Compare and sort 2D/3D shapes	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them recognise angles as a property of shape or a description of a turn identify right angles, recognise that two right angles make a halfturn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle identify horizontal and vertical lines and pairs of perpendicular and parallel lines	identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify acute and obtuse angles and compare and order angles up to two right angles by size	identify 3-D shapes, including cubes and other cuboids, from 2-D representations draw given angles, and measure them in degrees use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles identify: * angles at a point and one whole turn (total 360o) angles at a point on a straight line and ½ a turn (total 180 o) other multiples of 90 o	recognise, describe and build simple 3-D shapes, including making nets illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice identify 2-D shapes on the the radius draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Progression Map **Subject: Maths**

Position and Direction						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Understand position through words alone – for example, "The bag is under the table," – with no pointing. Describe a familiar route. Discuss routes and locations, using words like 'in front of' and 'behind'.	Describe position /direction/movement of using whole/half/quarter and three quarter turns	Order/arrange combinations of objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns	Order/arrange combinations of objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns	describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon	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	describe positions on the full coordinate grid (all four quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axis.

Progression Map **Subject: Maths**

Measurement						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Make comparisons between objects relating to size, length, weight and capacity. Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc. Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' Compare length, weight and capacity	Measure and compare length/height, mass/weight capacity/volume and time (Standard and non Standard Units if measure) sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) recognise and know the value of different denominations of coins and notes tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. recognise and use language relating to dates, including days of the week, weeks, months and years	compare and order lengths, mass, volume/capacity and record the results using >, < and = compare and sequence intervals of time choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) measure the perimeter of simple 2-D shapes add and subtract amounts of money to give change, using both £ and p in practical contexts tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	estimate, compare and calculate different measures, including money in pounds and pence estimate, compare and calculate different measures, including money in pounds and pence measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days convert between different units of measure (e.g. kilometre to metre; hour to minute)	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm 2) and square metres (m 2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm 3 blocks to build cubes and cuboids) and capacity use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of squares and rectangles including using	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm 3) and cubic metres (m 3), and extending to other units such as mm 3 and km 3 . solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm 3) and cubic metres (m 3), and extending to other units [e.g. mm 3 and km 3]. solve problems involving the

		solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. know the number of minutes in an hour and the number of hours in a day	know the number of seconds in a minute and the number of days in each month, year and leap year	read, write and convert time between analogue and digital 12 and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	standard units, square centimetres (cm 2) and square metres (m 2) and estimate the area of irregular shapes solve problems involving converting between units of time convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) solve problems involving converting between units of time	calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate recognise that shapes with the same areas can have different perimeters and vice versa calculate the area of parallelograms and triangles use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places convert between miles and kilometres recognise when it is possible to use formulae for area and volume of shapes

Progression Map **Subject: Maths**

Statistics						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data	interpret and present data using bar charts, pictograms and tables solve one-step and twostep questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	complete, read and interpret information in tables, including timetables solve comparison, sum and difference problems using information presented in a line graph	interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average