St Peter's Whole School Maths Progression Map

	EYFS	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Number and place value	**Counting**						
	verbally count beyond 20, recognising the pattern of the counting system have a deep understanding of number to 10, including the composition of each number	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	count in multiples of 6, 7, 9, 25 and 1 000 find 1000 more or less than a given number count backwards through zero to include negative numbers	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context and calculate intervals across zero
	Comparing numbers						
	compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the	given a number, identify one more an done less	recognise the place value of each digit in a 2-digit number (tens and ones) Use <, > and = signs	recognise the place value of each digit in a 3-digit number (Hundreds, tens and ones)	recognise the place value of each digit in a 4-digit number (Thousands, hundreds, tens and ones)	read, write order and compare numbers to at least 1 000 000 and determine the value of each digit	read, write order and compare numbers up to 10 000 000 and determine the value of each digit

	same as the other quantity		Compare and order numbers from 0 up to 100	Compare and order numbers up to 1000	Compare and order numbers beyond 1000		
	Represent						
	explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally subitise (recognise quantities without counting) up to 5	identify and represent numbers using objects and pictorial representations read and write numbers to 100 in numerals read and write numbers from 1 to 20 in numerals and words	identify, represent and estimate numbers using different representations, including the number line read and write numbers to at least 100 in numerals and words	identify, represent and estimate numbers using different representations read and write numbers to 1000 in numerals and words	identify, represent and estimate numbers using different representations Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals	
	Problems and rounding						
			use place value and number facts to solve problems	solve number problems and practical problems involving these ideas	round any number to the nearest 10, 100 or 1000	round any number up to 1,000,000 to the nearest 10, 100, 1000, 10 000 and 100 000	round any whole number to a required degree of accuracy

					solve number and practical problems that involve all of the above with increasingly large positive numbers	solve number and practical problems that involve all of the above interpret negative numbers in context	solve number and practical problems that involve all of the above use negative numbers in context, and calculate intervals across zero
Addition and subtraction	**Recall, represent, use**						
	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.	read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 show the addition of two numbers can be done in any order (commutative) and subtraction of one number	estimate the answer to the calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	

			from another cannot recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems				
	Calculations						
		add and subtract one-digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ➢ a two-digit number and ones ➢ a two-digit number and tens ➢ two two-digit numbers	add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction add and subtract numbers mentally, including:	add and subtract numbers with up to 4 digits using formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) add and subtract numbers mentally with increasingly large numbers	use their knowledge of the order of operations to carry out calculations involving the four operations perform mental calculations, including with mixed

			➢ adding three one-digit numbers	➢ a three-digit number and ones ➢ a three-digit number and tens ➢ a three-digit number and hundreds			operations and large numbers
	Solve problems						
		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	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems and contexts, deciding which operations and methods to use and why solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding	solve addition and subtraction multi-step problems and contexts, deciding which operations and methods to use and why

						the meaning of the equal sign	
Multiplication and division	**Recall, represent, use**						
	explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally	count in multiples of 2, 5 and 10 up to 100	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers show that multiplication of two numbers can be done in any order (commutative) and division of one number by any other cannot	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12 x 12 use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers recognise and use factor pairs and commutativity in mental calculations	identify multiples and factors, including finding all factor pairs of a numbers, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square	identify common factors, common multiples and prime numbers use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

						numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	
	Calculations						
			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 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 multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one -digit number using the formal written method of short division	multiply multi -digit numbers up to 4 digits by a two -digit whole number using the formal written method of long multiplication 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

						and interpret remainders appropriately for the context multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	divide numbers up to four digits by a two -digit number using the formal written method of short division where appropriate, interpreting remainders according to the context perform mental calculations, including with mixed operations and large numbers
	Solve problems						
		solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial	solve problems using multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication	solve problems, including missing number problems, involving multiplication and division, including positive integer	solve problems involving multiplying and adding, including using the distributive law to multiply two numbers by one digit, integer	solve problems involving multiplication and division including using their knowledge of factors and multiples,	solve problems involving addition, subtraction, multiplication and division

		representations and arrays with the support of the teacher	and division facts, including problems in contexts	scaling problems and correspondence problems in which n objects are connected to m objects	scaling problems and harder correspondence problems such as n objects are connected to m objects	squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	
	Combined operations						
						solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equal sign	use their knowledge of the order of operations to carry out calculations involving the four operations
Fractions, decimals and percentages	**Fractions: recognise and write**						
		recognise, find and name a half as one of two equal parts of an	recognise, find, name and write fractions 1 /3, ¼, 2 /4 and ¾ of a length, shape,	count up and down in tenths; recognise that tenths arise from dividing an	count up and down in hundredths; recognise that hundredths arise	identify, name and write equivalent fractions of a give fraction,	

		object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	set of objects or quantity	object into 10 equal parts and dividing one-digit numbers or quantities by 10 recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	when dividing an object by one hundred and dividing tenths by ten	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 [for example, 2 /5 + 4 /5 = 6 /5 = 1 1 /5]	
	Fractions: compare						
			recognise the equivalence of 2/4 and 1/2	recognise and show, using diagrams, equivalent fractions with	recognise and show, using diagrams, families of common	compare and order fractions whose denominators are all multiples	use common factors to simplify fractions; use common

				small denominators compare and order unit fractions, and fractions with the same denominators	equivalent fractions	of the same number	multiples to express fractions in the same denomination compare and order fractions, including fractions >1
	Fractions: calculations						
			write simple fractions for example, ½ of 6 = 3	add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	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 [for example, ¼ x ½ = 1/8] • divide proper fractions by whole numbers

							[for example, 1/3 ÷ 2 = 1/6]
	Fractions: solve problems						
				solve problems that involve all of the above	solve problems involving increasingly harder fractions ion to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number		
	Decimals: recognise and write						
					recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to ¼, ½, ¾	read and write decimal numbers as fractions [for example, 0.71 = 71/100] recognise and use thousandths and relate them to tenths, hundredths and	identify the value of each digit in numbers given to three decimal places

						decimal equivalents	
	Decimals: compare						
					round decimals with one decimal place to the nearest whole number compare numbers with the same number of decimal places up to two decimal places	round decimals with two decimal places to the nearest whole number and to one decimal place read, write order and compare numbers with up to three decimal places	
	Decimals: calculations and problems						
					find the effect of dividing a one- of two-digit number by 10 and 100, identifying the value of digits in the answer as ones, tenths and hundredths	solve problems involving number up to three decimal places	multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places multiply one-digit numbers with up to two decimal places

							by whole numbers use written division methods in cases where the answer has up to two decimal places solve problems which require answers to be rounded to specified degrees of accuracy
	Fractions, decimals and percentages						
					solve simple measure and money problems involving fractions and decimals to two decimal places	recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator	associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3 /8] recall and use equivalences

						100, and as a decimal solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1 /5, 2 /5, 4 /5 and those fractions with a denominator of a multiple of 10 or 25	between simple fractions, decimals and percentages, including in different contexts
Ration and proportion							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 and algebraic thinking		solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing	solve problems, including missing number problems			use simple formulae generate and describe linear number sequences express missing number

		problems such as 7 = - 9	number problems				problems algebraically find pairs of numbers that satisfy an equation with two unknowns enumerate possibilities of combinations of two variables
Measurement	**Using measures**						
	make comparisons between objects relating to size, length, weight and capacity	compare, describe and solve practical problems for: ➢ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ➢ mass/weight [for example, heavy/light, heavier/lighter, lighter than]	choose and use appropriate standard units to estimate and measure length/height in any direction (m, cm); mass (kg/g); temperature (oC); capacity (litres, ml) to the nearest appropriate unit, using rulers, scales, thermometers	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Convert between different units of measure [for example, kilometre to metre; hour to minute] estimate, compare and calculate different measures	convert between different units of metric measure (for example, kilometre and metre; centimetre and metre, centimetre and millimetre; gram and kilogram; litre and millilitre) understand and use approximate equivalences	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate use, read, write and convert between standard units, converting

		➢ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ➢ time [for example, quicker, slower, earlier, later] • measure and begin to record the following: ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time (hours, minutes, seconds)	and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and =			between metric units and common imperial units such as inches, pounds and pints use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	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
	Money						
		recognise and know the value of different denominations of coins and notes	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	add and subtract amounts of money to give changes, using both £ and p in practical contexts	estimate, compare and calculate different measures, including money in pounds and pence	use all four operations to solve problems involving measure [for example, money]	

			find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change				
	Time						
		sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning,	compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands	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 and read time with	read, write and convert time between analogue and digital 12- and 24- hour clocks solve problems involving converting from hours to	solve problems involving converting between units of time	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

		afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	on a clock face to show these times know the number of minutes in an hour and the number of hours in a day	increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight know the number of seconds in a minute and the number of days in each month, year and leap year compare durations of events [for example to calculate the time taken by	minutes; minutes to seconds; years to months; weeks to days		

				particular events or tasks]			
	Perimeter, area and volume						
				measure the perimeter of simple 2-D shapes	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres 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 estimate volume [for example, using 1 cm3	recognise that shapes with the same areas can have different perimeters and vice versa recognise when it is possible to use formulae for area and volume of shapes calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3),

						blocks to build cuboids (including cubes)] and capacity [for example, using water]	and extending to other units [for example, mm3 and km3]
Geometry	**2-D shapes**						
	compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can select, rotate and manipulate shapes to develop spatial reasoning skills	recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D shapes and everyday objects	draw 2-D shapes	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify lines of symmetry in 2-D shapes presented in different orientations	distinguish between regular and irregular polygons based on reasoning about equal sides and angles use the properties of rectangles to deduce related facts and find missing lengths and angles	draw 2-D shapes using given dimensions and angles compare and classify geometric shapes based on their properties and sizes illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

	3-D shapes						
		recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres]	recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres] compare and sort common 3-D shapes and everyday objects	make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets
	Angles and lines						
				recognise angles as a property of shape of a description of a turn identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn;	identify acute and obtuse angles and compare and order angles up to two right angles by size identify lines of symmetry in 2-D shapes presented in different orientations	know angles are measure in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees identify:	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

				identify whether angles are greater than or less than a right angle identify horizontal and vertical lines and pairs of perpendicular and parallel lines	complete a simple symmetric figure with respect to a specific line of symmetry	➢ angles at a point and one whole turn (total 360°) ➢ angles at a point on a straight line and ½ a turn (total 180°) ➢ other multiples of 90°	find missing angles
	Position and direction						
		describe position, direction and movement, including whole, half, quarter and three-quarter turns	order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position,		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	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 axes

			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 (clockwise and anticlockwise)		left/right and up/down • plot specified points and draw sides to complete a given polygon		
Statistics	**Present and interpret**						
			interpret and construct simple pictograms, tally charts, block diagrams and simple tables	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems
	Solve problems						

			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	solve one -step and two -step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	solve comparison sum and different problems using information presented in bar charts, pictograms, tables and other graphs	solve comparison, sum and difference problems using information presented in a line graph	calculate and interpret the mean as an average