St. Peter's Catholic Primary School –Mathematics Progression Document

Based on White Rose Scheme

Progression Sheet Foundation Stage

Mathematics	0-3 Year Olds	3 and 4 Year Olds	Reception Children	ELG
Number	- Combines Objects. - Takes part in finger rhymes with numbers. - Reacts to changes of amount in a group of up to 3 items. - Compares amounts. Vocab 'Lots' 'More' 'Same' - Develops counting like behaviour. - Counts in everyday contexts, sometimes skipping numbers 1,2,3,5.	- Develop fast recognition of up to 3 objects, without having to count them individually. - Recite numbers past 5. - Say one more for each item in order: 1, 2,3,4,5. - Know that the last number reached when counting a small set of objects tells you how many there are in total. (Cardinal principle) - Show 'finger numbers' up to 5. - Link numeral and amount. - Experiment with their own symbols and marks as well as numerals. - Solve real world mathematical problems with numbers up to 5.	- Count objects, actions and sounds. - Subitise (recognise number patterns without counting) - Link number symbol with its cardinal number value. - Count beyond ten - Compare numbers - Understand the 'one more then/one less than' relationship between consecutive numbers. - Explore the composition of numbers to 10. - Automatically recall number bonds for numbers 0-10.	- Children have a deep understanding of number to 10, including the composition of each number. - Subitise up to 5 - Automatically recall number bonds up to 5 and some number bonds to 10, including double facts.
Numerical Patterns	Notice patterns and arrange things in patterns.	- Talk about and identify the patterns around them. - Extend and create ABAB patterns – stick, leaf, stick, leaf. - Notice and correct an error in a repeating pattern. - Begin to describe a sequence of events using words such as 'first', 'then'	Continue, copy and create repeating patterns.	- Verbally count beyond 20, recognising the pattern of the counting system. - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Shape, Space, Measure	- Uses language such as 'on top of' 'up' 'down' 'through' - Compares sizes, weights. Uses gesture and language 'bigger/little/smaller', 'high/low/heavy'.	- Talk about and explore 2D and 3D shapes. - Understand position through words alone. - Compare quantities with language: 'more than', 'fewer than'	- Select, rotate and manipulate shapes in order to develop spatial reasoning skills. - Compose and decompose shapes so that children	

		• Describe a familiar route. • Discuss routes and locations using words like 'in front of' and 'behind' • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, triangular prism for roof etc.	recognise a shape can have other shapes within it, just as numbers can. • Compare length, weight and capacity.	

Autumn Term

Reception Number	**Baseline**	**Matching, sorting and comparing amount**		**Number of the week: 1, 2, 3, 4, 5**	**One more, one less**
Reception SSM	**Baseline**	**Measurement: Comparing weight and size, positional language**	**Patterns**	**2D shapes**	**Time**
Year 1	**Place Value (within 10)** *Sort objects, count objects, count objects from a larger group, represent objects, recognise numbers as words, count on from any number, 1 more, count backwards within 10, 1 less, compare groups by matching, fewer/more/some, less than/greater than/equal to, compare numbers, order objects and*	**Addition and Subtraction (within 10)** *Introduce parts and wholes, part-whole model, write number sentences, fact families – addition facts, number bonds within 10, systematic number bonds within 10, number bonds to 10, addition – add together, addition – add more, addition problems, find a part, subtraction – find a part, fact families – the eight facts, subtraction – take away/crossing out (How*		**Shape** *Recognise and name 3D shapes, sort 3D shapes, recognise and name 2D shapes, sort 2D shapes, patterns with 3D and 2D shapes*	

	numbers, the number line	*many left?), subtraction – take away (how many left?), subtraction on a number line, add or subtract 1 or 2.*	
Year 2	**Place Value** *Numbers to 20, count objects to 100 by making 10s, recognise tens and ones, use a place value chart, partition numbers to 100, write numbers to 100 in words, flexibly partition numbers to 100, write numbers to 100 in expanded form, 10s on the number line to 100, estimate numbers on a number line, compare objects, compare numbers, order objects and numbers, count in 2s, count in 5s, count in 10s, count in 3s.*	**Addition and Subtraction** *Bonds to 10, fact families – addition and subtraction bonds within 20, bonds to 100 (tens), add and subtract 1s, add by making 10, add three 1 digit numbers, add to the next 10, add across a 10, subtract across ten, subtract from a 10, subtract a 1 digit number from a 2 digit number (across a 10), 10 more/10 less, add and subtracts 10s, add two 2 digit numbers (not across a 10), add two 2 digit numbers (across a 10), subtract two 2 digit numbers (not across a 10), subtract two 2 digit numbers (across a 10), mixed addition and subtraction, compare number sentences,*	**Shape** *Recognise 2D and 3D shapes, count sides of 2D shapes, count verticies on 2D shapes, draw 2D shapes, lines of symmetry on 2D shapes, use lines of symmetry to complete shapes, sort 2D shapes, count faces on 3D shapes, count edges on 3D shapes, count vertices on 3D shapes, sort 3D shapes, make patterns with 2D and 3D shapes*

		missing number problems	
Year 3	**Place Value** *Represent numbers to 100, partition numbers to 100, number line to 100, hundreds, represent numbers to 1000, partition numbers to 1000, flexible portioning of numbers to 1000, 100s, 10s and 1s, find 1, 10 or 100 more or less, number line to 1000, estimating on a number line to 1000, compare numbers to 1000, order numbers to 1000, count in 50s.*	**Addition and Subtraction** *Apply number bonds within 10, add and subtract 1s, add and subtract 10s, add and subtract 100s, spot the pattern, add 1s across a 10, add 10s across a 100, subtract 1s across a 10, subtract 10s across 100, make connections, add two numbers (no exchange), subtract two numbers (no exchange), add two numbers (across a 10), add two numbers (across a 100), subtract two numbers (across a 10), subtract two numbers (across a 100), add 2 digit and 3 digit numbers, subtract a 2 digit number from a 3 digit number, complements to 100, estimate answers, inverse operations, make decisions*	**Multiplication and Division** *Multiplication – equal groups, use arrays, multiples of 2, multiples of 5 and 10, sharing and grouping, multiply by 3, divide by 3, the 3 times table, multiply by 4, divide by 4, the 4 times table, multiply by 8, divide by 8, the 8 times table, the 2, 4 and 8 times tables*

Year 4	**Place Value**	**Addition and Subtraction**	**Measurement: Area**	**Multiplication and Division**
	Represent numbers to 1000, partition numbers to 1000, number line to 1000, thousands, represent numbers to 10,000, partition numbers to 10,000, flexible partitioning of numbers to 10,000, find 1, 10, 100, 1000 more or less, number line to 10,000, estimate on a number line to 10,000, compare numbers to 10,000, order numbers to 10,000, roman numerals, round to the nearest 10, round to the nearest 100, round to the nearest 1000, round to the nearest 10, 100 or 1000	*Add and subtract 1s, 10s, 100s and 1000s, , add up to two 4 digit numbers – no exchange, add two 4 digit numbers – one exchange, add two 4 digit numbers – more than one exchange, subtract two 4 digit numbers – no exchange, subtract two 4 digit numbers – one exchange, subtract two 4 digit numbers – more than one exchange, efficient subtraction, estimate answers, checking strategies*	*What is area?, counting squares, making shapes, comparing area*	*Multiples of 3, multiply and divide by 6, 6 times-table and division facts, multiply and divide by 9, 9 times table and division facts, the 3, 6, and 9 times tables, multiply and divide by 7, 7 times table and division facts, 11 times table and division facts, 12 times table and division facts, multiply by 1 and 0, divide 1 and itself, multiply three numbers*
Year 5	**Place Value**	**Addition and Subtraction**	**Multiplication and Division**	**Fractions**
	Roman numerals to 1000, numbers to 10,000, numbers to 100,000, numbers	*Mental strategies, add whole numbers with more than 4 digits,*	*Multiples, common multiples,*	Find fractions equivalent to a unit fraction, find fractions

to a million, read and write numbers to 1,000,000, powers of 10, 10/100/1000/100,00 more or less, partition numbers to 1,000,000, number line to 1,000,000, compare and order numbers to 100,000, compare and order numbers to one million, round to the nearest 10, 100 or 1000, round within 100,000, round within 1,000,000	*subtract whole numbers with more than 4 digits, round to check answers, inverse operations (addition and subtraction), multi-step addition and subtraction problems, compare calculations, find missing numbers*	*factors, common factors, prime numbers, square numbers, cube numbers, multiply by 10, 100 and 1000, divide by 10, 100, 1000, multiples of 10, 100 and 1000.*	equivalent to a non-unit fraction, recognise equivalent fractions, convert improper fractions to mixed numbers, convert mixed numbers to improper fractions, compare fractions less than 1, order fractions less than 1, compare and order fractions greater than 1, add and subtract fractions with the same denominator, add fractions within 1, add fractions with total greater than 1, add to a mixed number, add

				two mixed numbers, subtract fractions, subtract from a mixed number, subtract from a mixed number – breaking the whole, subtract two mixed numbers
Year 6	**Place Value** *Numbers to 1,000,000, numbers to 10,000,000, read and write numbers to 10,000,000, powers of 10, number line to 10,000,000, compare and order any integers, round any integers, negative numbers*	**Addition, Subtraction, Multiplication & Division** *Add and subtract integers, common factors, common multiples, rules of divisibility, primes to 100, square and cube numbers, multiply up to a 4 digit number by a 2 digit number, solve problems with multiplication, short division, division using factors, introduction to long division, long division with remainders, solve problems with division,*	**Fractions A** *Equivalent fractions and simplifying, equivalent fractions on a number line, compare and order (denominator), compare and order (numerator), add and subtract simple fractions, add and subtract any two fractions, add mixed*	**Fractions B** *Multiply fractions by integers, multiply fractions by fractions, divide fractions by an integer, divide any fractions by an integer, mixed questions with fractions, fraction of an amount, fraction of an*

		solve multi-step problems, order of operations, mental calculations and estimation, reason from known facts	numbers, subtract mixed numbers, multi-step problems	amount – find the whole.

Spring Term

Reception Number	Numbers to 5	Number of the week: 6, 7, 8, 9, 10	Comparing numbers to 10	Number bonds to 10	
Reception SSM	Measurement: Comparing mass and capacity	Measurement: Length & Height	Time	3D shapes	Patterns
Year 1	**Place Value (within 20)** *Count within 20, understand 20, understand 11, 12 and 13, understand 14, 15 and 16, understand 17, 18 and 19, understand 20, 1 more and 1 less, the number line to 20, use a number line to 20, compare*	**Addition and Subtraction (within 20)** *Add by counting on within 20, add ones using number bonds, find and make number bonds to 20, doubles, near doubles, subtract ones using number bonds, subtraction – counting back, subtraction –*	**Place value to 50** *Count from 20 to 50, 20, 30, 40 and 50, count by making groups of ten, groups of ten and ones, partition into tens and ones, the number line to 50, estimate on a number line to 50, 1 more/1 less,*	**Measurement (Length & Height)** *Compare lengths and heights, measure length using objects, measure length in centimetres.*	

	numbers to 20, order numbers to 20.	*finding the difference, related facts, missing number problems*		
Year 2	**Money** *Count money – pence, count money – pounds (notes and coins), count money – pounds and pence, choose notes and coins, make the same amount, compare amounts of money, calculate with money, make a pound, find change, two step problems.*	**Multiplication and Division** *Recognise equal groups, make equal groups, add equal groups, introduce the multiplication symbol, multiplication sentences, use arrays, make equal groups – grouping, make equal groups – sharing, the 2 times table, divide by 2, doubling and halving, odd and even numbers, the 10 times table, divide by 10, the 5 times table, divide by 5, the 5 and 10 times table*	**Measurement: Length & Height** *Measure in centimetres, measure in metres, compare lengths and heights, order lengths and heights, four operations with lengths and heights*	**Measurement: Mass, capacity & temperature** *Compare mass, measure in grams, measure in kilograms, four operations with mass, compare volume and capacity, measure in millimetres, measure in litres, four operations with volume and capacity, temperature*

Year 3	Multiplication and Division	Measurement – Length and Perimeter	Fractions	Measurement: Mass and capacity
	Multiples of 10, related calculations, reasoning about multiplication, multiply a 2 digit number by a 1 digit number – no exchange, multiply a 2 digit number by a 1 digit number – with exchange, link multiplication and division, divide by a 2 digit number by a 1 digit number – no exchange, divide by a 2 digit number by a 1 digit number – flexible partitioning, divide a 2 digit number by a 1 digit number – with remainders, scaling, how many ways?	*Measure in metres and centimetres, measure in millimetres, measure in centimetres and millimetres, metres, centimetres and millimetres, equivalent lengths (metres and centimetres), equivalent lengths (centimetres and millimetres), compare lengths, add lengths, subtract lengths, what is perimeter?, measure perimeter, calculate perimeter.*	*Understand the denominators of unit fractions, compare and order unit fractions, understand the numerators or non unit fractions, understand the whole, compare and order non unit fractions, fractions and scales, fractions on a number line, count in fractions on a number line, equivalent fractions on a number line, equivalent fractions as bar models*	*Use scales, measure mass in grams, measure mass in kilograms and grams, equivalent masses (kilograms and grams), compare mass, add and subtract, measure capacity and volume in millimetres, measure capacity and volume in litres and millilitres, equivalent capacities and volumes (litres and millilitres), compare capacity and volume, add and subtract capacity and volume.*

Year 4	Multiplication and Division	Measurement: Length and Perimeter	Fractions	Decimals
	Factor pairs, use factor pairs, multiply by 10, multiply by 100, divide by 10, divide by 100, related facts – multiplication and division, informal written methods for multiplication, multiply a 2 digit number by a 1 digit number, multiply a 3 digit number by a 1 digit number, divide a 2 digit number by a 1 digit number (1), divide a 2 digit number by a 1 digit number (2), divide a 3 digit number by a 1 digit number, correspondence problems, efficient multiplication	*Measure in kilometres and metres, equivalent lengths (kilometres and metres), perimeter on a grid, perimeter of a rectangle, perimeter of rectilinear shapes, find missing lengths in rectilinear shapes, calculate perimeter of rectilinear shapes, perimeter of regular polygons, perimeter of polygons*	*Understand the whole, count beyond 1, partition a mixed number, number lines with mixed numbers, compare and order mixed numbers, understand improper fractions, convert mixed numbers to improper fractions, convert improper fractions to mixed numbers, equivalent fractions on a number line, equivalent fraction families, add two or more fractions, add fractions and mixed*	*Tenths as fractions, tenths as decimals, tenths on a place value chart, tenths on a number line, divide a 1 digit number by 10, divide a 2 digit number by 10, hundredths as fractions, hundredths as decimals, hundredths on a place value chart, divide a 1 or 2 digit number by 100.*

			numbers, subtract two fractions, subtract from whole amounts, subtract from mixed numbers		
Year 5	**Multiplication and Division** *Multiply up to a 4 digit number by a 1 digit number, multiply a 2 digit number by a 2 digit number (area model), multiply a 2 digit number by a 2 digit number, multiply a 3 digit number by a 2 digit number, multiply a 4 digit number by a 2 digit number, solve problems with multiplication, short division, divide a 4 digit number by a 1 digit number,*	**Fractions** *Multiply a unit fraction by an integer, multiply a non-unit fraction by an integer, multiply a mixed number by an integer, calculate a fraction of a quantity, fraction of an amount, find the whole, use fractions as operators*	**Decimals and Percentages** *Decimals up to 2 decimal places, equivalent fractions and decimals (tenths), equivalent fractions and decimals (hundredths), equivalent fractions and decimals, thousandths as decimals, thousandths on a place value chart, order and compare decimals (same*	**Perimeter and Area** *Perimeter of rectangles, perimeter of rectilinear shapes, perimeter of polygons, area of rectangles, area of compound shapes, estimate area*	**Statistics** *Draw line graphs, read and interpret line graphs, read and interpret tables, two way tables, read and interpret timestables*

	divide with remainders, efficient division, solve problems with multiplication and division		*number of decimal places), order and compare any decimals with up to 3 decimal places, round to the nearest whole number, round to 1 decimal place, understand percentages, percentages as fractions, percentages as decimals, equivalent fractions, decimals and percentages*			
Year 6	**Ratio** *Add or multiply?, use ratio language, introduction to the ratio symbol, ratio and fractions, scale drawing, use scale factors, similar shapes, ratio*	**Algebra** *1 step function machines, 2 step function machines, form expressions, substitution, formulae, form equations, solve 1 step equations, solve 2 step*	**Decimals** *Place value within 1, place value – integers and decimals, round decimals, add and subtract decimals, multiply by 10, 100 and 1000,*	**Fractions, Decimals and Percentages** *Decimal and fraction equivalents, fractions as division, understand percentages, fractions to percentages,*	**Measurement: Perimeter, Area & Volume** *Shapes – same area, area and perimeter, area of a triangle – counting squares, area of a right-*	**Statistics** *Line graphs, dual bar charts, read and interpret pie charts, pie charts with percentages, draw pie charts, the mean*

	problems, proportion problems, recipes	equations, find pairs of values, solve problems with two unknowns	divide by 10, 100 and 1000, multiply decimals by integers, divide decimals by integers, multiply and divide decimals in context.	equivalent fractions, decimals and percentages order fractions, decimals and percentages, percentage of an amount – one step, percentage of an amount – multistep, percentages – missing values	angled triangle, area of a parallelogram, volume – counting cubes, volume of a cuboid	

Summer Term

Reception Number	**Numbers of the week 11-20**		**Doubling**	**Sharing and grouping**	**Odds and Evens**	**Deepening understanding, patterns and relationships**	
Reception SSM	**Spatial reasoning**						
Year 1	**Multiplication and Division** *Count in 2s, count in 10s, count in 5s, recognise equal groups, add equal groups, make arrays, make doubles, make equal groups – grouping.*	**Fractions** *Recognise a half of an object or a shape, find a half of an object or a shape, recognise a half of a quantity, find a half of a quantity, recognise a quarter of a quantity, recognise a quarter of an object or a shape, find a quarter of an object or a shape, recognise a quarter of a quantity, find a quarter of a quantity.*	**Position and Direction** *Describe turns, describe position – left and right, describe a position above and below, ordinal numbers*	**Place Value (within 100)** *Count from 50 to 100, tens to 100, partition into tens and ones, the number line to 100, 1 more, 1 less, compare numbers with the same number of tens, compare only two numbers*	**Money** *Unitising, recognise coins, recognise notes, count in coins*	**Time** *Before and after, days of the week, months of the year, hours, minutes and seconds, tell the time to the hour, tell the time to the half hour*	

Year 2	**Fractions** *Introduction to parts and whole, equal and unequal parts, recognise a half, find a half, recognise a quarter, recognise a third, find a third*	**Time** *O'Clock and half past, quarter past and quarter to, tell the time past the hour, tell the time to the hour, tell the time to 5 minutes, minutes in an hour, hours in a day*	**Statistics** *Make tally charts, tables, block diagrams, draw pictograms (1-1), interpret pictograms (1-1), draw pictograms (2, 5 and 10), interpret pictograms (2, 5 and 10)*	**Position and direction** *Language of position, describe movement, describe turns, describe movement and turns, shape patterns with turns*			
Year 3	**Fractions** *Add fractions, subtract fractions, partition the whole, unit fractions of a set of objects, non-unit fractions of a set of objects, reasoning with fractions of an amount*	**Money** *Pounds and pence, convert pounds and pence, add money, subtract money, find change*	**Time** *Roman numerals to 12, tell the time to 5 minutes, tell the time to the minute, read time on a digital clock, use am and pm, years, months and days, days and hours, hours and minutes – use start and end times*	**Shape** *Turns and angles, right angles, compare angles, measure and draw accurately, horizontal and vertical, parallel and perpendicular, recognise and describe 2D shapes, draw polygons*	**Statistics** *Interpret pictograms, draw pictograms, interpret bar charts, draw bar charts, collect and represent data, two way tables*		
Year 4	**Decimals** *Make a whole with tenths, make a whole with hundredths, partition*	**Money** *Write money using decimals, covert between pounds and pence, compare*	**Time** *Years, months and days, hours minutes and seconds, covert between*	**Shape** *Understand angles as turns, identify angles, compare and*	**Statistics** *Interpret charts, comparison, sum and difference, interpret line*	**Properties of shape** *Turns and angles, right angles in shapes,*	**Position & Direction** *Describe position using coordinates, plot*

	decimals, flexibly partition decimals, compare decimals, order decimals, round to the nearest whole number, halves and quarters as decimals	*amounts of money, estimate with money, calculate with money, solve problems with money*	*analogue and digital times, covert to the 24-hour clock, convert from the 24 hour clock*	*order angles, triangles, quadrilaterals, polygons, lines of symmetry, complete a symmetric figure*	*graphs, draw line graphs*	*compare angles, identify angles, compare and order angles, recognise and describe 2D shapes, triangles, quadrilaterals, horizontal and vertical, lines of symmetry, complete a symmetric figure*	*coordinates, draw 2D shapes on a grid, translate on a grid, describe translation on a grid*
Year 5	**Shape** *Understand and use degrees, classify angles, estimate angles, measure angles up 180, draw lines and angles accurately, calculate angles around a point, calculate angles on a straight line, lengths and angles in shapes*	**Position and Direction:** *Read and plot coordinates, problem solving with coordinates, translation, translation with coordinates, lines of symmetry, reflection in horizontal and vertical lines*	**Decimals** *Use known facts to add and subtract decimals within 1, complements to 1, add and subtract decimals across 1, add decimals with the same number of decimal places, add decimals with different*	**Negative Numbers** *Understand negative numbers, count through zero in 1s, count through zero in multiples, compare and order negative numbers, find the difference*	**Converting Units** *Kilograms and kilometres, millimetres and millilitres, covert units of length, convert between metric and imperial units, covert units of time, calculate with timetables*	**Volume** *Cubic centimetres, compare volume, estimate volume, estimate capacity*	

			numbers of decimal places, subtract decimals with different numbers of decimal places, efficient strategies for adding and subtracting decimals			
Year 6	**Shape** *Measure and classify angles, calculate angles, vertically opposite angles, angles in a triangle, angles in a triangle – special cases, angles in a triangle – missing angles, angles in a quadrilateral, angles in polygons*	**Position and Direction** *The first quadrant, read and plot points in four quadrants, solve problems with coordinates, translations, reflections*	**Projects**			