



St. Peter and St. Paul's RC Primary School

Mathematics - Unit and Progression Overview



**Holding God's hand,
we grow in faith together,
we dream, believe, achieve.
Following the footsteps of Jesus,
we act with love,
we care for one another
and our world.**

Subject Long Term Plan

Nursery

- Fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Say one number 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 numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- 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'.
- 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'.
- 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'.
- 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.
- Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.
- 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, real or fictional, using words such as 'first', 'then...'

Reception

- Count objects, actions and sounds.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value
- Count beyond ten.
- 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 0–10.
- Select, rotate and manipulate shapes in order 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.
- Compare length, weight and capacity.

Early Learning Goals	Number	Numerical Patterns
	<ul style="list-style-type: none"> ○ Have a deep understanding of number to 10, including the composition of each number. ○ Subitise (recognise quantities without counting) up to 5. ○ 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. 	<ul style="list-style-type: none"> ○ 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

YEAR 1

Counting and ordering	Number s and more/less	Table and multiples	Bonds and facts	Calculations + and -	Calculations x and ÷	Fractions and percentages	Time	Measure	Geometry
Count to & across 100, forwards & backwards from any number.	Read & write numbers to 20 in digits & words.	Count in multiples of 1, 2, 5 & 10	Know bonds to 10 by heart.	Add & subtract: 1 digit & 2 digit numbers to 20, including zero.	Solve simple multiplication & division with apparatus & arrays.	Recognise half and quarter of object, shape or quantity.	Sequence events in order.	Recognise and know the value of different coins	Recognise common 2D and 3D shapes
	Read & write numbers to 100 in digits.		Use bonds & subtraction facts to 20.	Add any three 1-digit numbers with a total up to 20.	Solve one-step problems involving multiplication and division	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	Use language of day, week, month and year.	Measure and begin to record the following: Lengths and heights Mass and weight Capacity and volume	Describe position, direction and movement, including whole, half, quarter and three-quarter turns.

	Say 1 more/1 less to 100			Read, write and interpret mathematical statements involving + - =			Tell time to hour & half past and draw hands on a clock to show these	Compare, describe and solve practical problems for measures.	
				Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial repr and missing number problems $7 = \square - 9$				Use Language- Long, short/shorter/tall/ double/half/heavy/light er/ full/empty/ more than/ less than/ half full/quarter full	

YEAR 2

Counting and ordering	Numbers and more/less	Table and multiples	Bonds and facts	Place value and rounding	Calculations + and -	Calculations x and ÷	Fractions and percentages	Time	Measure	Geometry	Statistics
Count in steps of 2,3,5 from 0 in tens and from any number, forward and backward	Identify, represent and estimate numbers using different representations, including the number line	Recall and use x and ÷ facts for the 2, 5 and 10 times tables	Recall & use +/- facts to 20.	Recognise the place value of each digit in a two-digit number(tens, ones)	Add & subtract: 2-digit nos & ones 2-digit nos & tens Two 2-digit nos Three 1-digit nos	Calculate mathematical statements for x and ÷ within the x tables and write them using the symbols	Recognise, find, name & write $\frac{1}{3}$; $\frac{1}{4}$; $\frac{2}{4}$; $\frac{3}{4}$ of a length, shape, set of objects or quantity	Tell time to five minutes, including quarter past/to and draw the hands on a clock face	Choose and use standard units to estimate and measure length/height in any direction(m/cm); mass (kg/g); temp (°C); capacity (l, ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
Compare and order numbers 0-100; use <, > and =	Read and write numbers to at least 100 in numerals and in words	Recognise even and odd numbers	Derive & use related facts to 100		Show that addition of numbers can be done in any order and subtraction of one	Show that x of two numbers can be done in any order and division of one number	Recognise equivalence of simple fractions	Know the number of minutes in an hour and hours in a day	Compare and order lengths, mass, capacity and record the results using <, > and =	Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces	Ask and answer simple questions by counting the number of objects in each

					number from another cannot	by another cannot					category and sorting the categories by quantity
	Use place value and number facts to solve problems		Say 10 more/less than any number to 100		Use the inverse of + and – to check calculations and solving missing number problems	Solve problems involving \times and \div , using materials, arrays, repeated addition, mental methods, and facts including problems in context		Compare and sequence intervals of time	Recognise £ and p; combine amounts to make a particular value	Identify 2D shapes on the surface of 3D shapes	Ask and answer questions about totalling and comparing data
									Find different coin combinations of coins that equal the same amount of money	Compare and sort common 2D and 3D shapes and everyday objects	
									Solve simple problems in a practical context involving + and – of money of the same unit, including giving change	Order and arrange combinations of objects in patterns and sequences	
										Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line. Recognise right angles for quarter turns, half and three quarter turns (clockwise and anti-clockwise)	

YEAR 3

Counting and ordering	Numbers and more/less	Table and multiples	Bonds and facts	Place value and rounding	Calculations + and -	Calculations x and ÷	Fractions and percentages	Time	Measure	Geometry	Statistics
Compare & order numbers up to 1000.	Read & write all numbers to 1000 in digits & words.	Recall & use multiplication & division facts for 3, 4, 8 tables		Recognise PV of any 3-digit number.	Add & subtract: 3-digit nos & ones 3-digit nos & tens 3-digit nos & hundreds Add & subtract: Numbers with up to 3-digits using efficient written method (column).	Multiply: 2-digit by 1-digit	Count up/down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing numbers by 10	Tell and write the time from an analogue clock, including Roman numerals from 1 - X11, and 12 hour and 24 hour clocks	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity l/ml)	Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations	Interpret and present data using bar charts, pictograms and tables
Count from 0 in multiples of 4, 8, 50 & 10	Find 10 or 100 more/less than a given number				Use inverse to check.	Write and calculate mathematical statements for x and ÷ using the multiplication facts they know, including for two-digit numbers times one digit numbers, using mental and progressing to formal written methods	Recognise, find and write fractions of a discrete set of objects	Tell time to nearest minute.	Measure the perimeter of simple 2D shapes	Recognise angles as a property of shape or a description of a turn	Solve one-step and two-step questions using the information presented in scaled bar charts and pictograms and tables
	Solve number problems and practical problems involving these ideas				Solve problems, involving missing number problems, using number facts, place value, and more complex addition and subtraction		Compare & order fractions with same denominator.	Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight	Add and subtract amounts of money to give change, using both £ and p in practical contexts	Identify right angles, recognise 2 right angles make a half-turn, 3 make a $\frac{3}{4}$ of a turn and 4 make a complete turn; whether angles are >	

										or < a right angle	
					Solve problems, including missing number problems, involving \times and \div , including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.		+/- fractions with same denominator within one whole.	Know number of days in each month, year and leap year		Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	
							Know pairs of fractions that total 1.	Compare durations of events			
							Solve problems that involve all the above				

YEAR 4 APP

Counting and ordering	Numbers and more/less	Table and multiples	Bonds and facts	Place value and rounding	Calculations + and -	Calculations \times and \div	Fractions, decimals and percentages	Time	Measure	Geometry	Statistics
Count backwards through zero to include negative numbers.	Compare & order numbers beyond 1000.	Recall & use multiplication & division facts all tables to 12x12.		Recognise PV of any 4-digit number.	Add & subtract: Numbers with up to 4-digits using efficient written method (column). Numbers with up to 1dp.	Multiply: 2-digit by 1-digit 3-digit by 1-digit Divide: 3-digit by 1-digit	Count up/down in hundredths.	Read, write & convert time between analogue & digital 12 & 24	Convert between different units of measure Eg km to m; hour to min	Compare and classify geometric shapes, including quadrilaterals and triangles,	Interpret and present discrete and continuous data using appropriate graphical methods,

								hour clocks.		based on their properties and sizes	including bar charts and time graphs
Compare & order numbers with 2 decimal places.	Read Roman numerals to 100.			Round any number to the nearest 10, 100 or 1000.	Estimate and use inverse operations to check answers to a calculation	Use place value, known and derived facts to x and ÷ mentally, including: x by 0 and 1; dividing by 1; x together 3 numbers	Recognise and show, using diagrams, families of common equivalent fractions. Write equivalent fractions	Solve problems involving convertin g from hours to minutes: minutes to seconds; years to months; weeks to days	Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m	Identify acute and obtuse angles and compare and order angles up to two right angles by size	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables, and other graphs
Count in multiples of 6, 7, 9, 25 & 1000.	Find 1000 more/less than a given number.			Round decimals with 1dp to nearest whole number	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Recognise and use factor pairs	+/- fractions with same denominator.		Find the area of rectilinear shapes by counting squares	Identify lines of symmetry in 2-D shapes presented in different orientations	
Solve number and practical problems that involve the above						Solve two step problems	Compare numbers with the same number of decimal places up to two decimal places			Complete a simple symmetric figure with respect to a specific line of symmetry	
						Find the effect of dividing a one or two-digit number by 10 and 100- ones, tenths and hundredths	Solve problems involving increasingly hard fractions to calculate quantities		Estimate, compare and calculate different measures, including money in pounds and pence.	Describe positions on a 2D grid as coordinates in the first quadrant	

							Recognise and write decimal equivalent of any number of tenths or hundredths			Describe movements between positions as translations of a given unit to the left/right and up/down	
							Recognise and write decimals equivalent to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$			Plot specified points and draw sides to complete a given polygon	
							Solve simple measure and money problems involving fractions and decimals				

YEAR 5

Counting and ordering	Numbers and more/less	Table and multiples	Bonds and facts	Place value and rounding	Calculations + and -	Calculations x and ÷	Fractions, decimals and percentages	Time	Measure	Geometry	Statistics
Count forwards & backward with positive & negative numbers through zero.	Read Roman numerals to 1000 and recognise years written in Roman numerals	Identify all multiples & factors, including finding all factor pairs.	Recall prime numbers up to 19. Establish whether a number up to 100 is prime.	Compare & order numbers with 3 decimal places.	Add & subtract: Numbers with more than 4-digits using efficient written	Multiply: 4-digits by 1-digit/ 2-digit	Recognise mixed numbers & fractions & convert from one to another.	Solve time problems using timetables and converting between different units of time	convert between different units of metric measure (for example, kilometre	identify, describe and represent the position of a shape following a reflection	solve comparison, sum and difference problems using information

					method (column).				and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	or translation, using the appropriate language, and know that the shape has not changed.	presented in a line graph
Count forwards/backwards in steps of powers of 10 for any given number up to 1000000.	Recognise and use square numbers and cube numbers and the notation.	Use known tables to derive other number facts.	Use the vocabulary of prime numbers, prime factors and composite numbers	Recognise PV of any number up to 1000000.	Numbers with up to 2dp. Not red gp	Divide: 4-digits by 1-digit using short division and interpret remainders in context.	Multiply proper fractions and mixed numbers by whole numbers.		understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	complete, read and interpret information in tables, including timetables.
Count up/down in thousandths.	Construct equivalent statements and missing number problems			Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 or 100000.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	Multiply & divide: Whole numbers & decimals by 10, 100 & 1000	Round decimals with 2dp to nearest whole number & 1dp.		measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	

Solve number problems and practical problems				Round decimals with 2dp to the nearest whole number and 1dp Not red/amber gp	Understand the meaning of the equals sign.	Solve problems involving \times and \div using their knowledge of factors, multiples, squares and cubes	Compare and order fractions whose denominators are all multiples of the same number		calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	draw given angles, and measure them in degrees (o)	
						Solve problems involving \times and \div , including scaling by simple fractions and problems involving simple rates.	Read and write decimal numbers as fractions $0.71 = \frac{71}{100}$		estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	identify: □ angles at a point and one whole turn (total 360o) □ angles at a point on a straight line and 2 1 a turn (total 180o)	

										□ other multiples of 90o	
							Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalent Blue/green/amber gps		solve problems involving converting between units of time	use the properties of rectangles to deduce related facts and find missing lengths and angles	
							Solve problems involving numbers up to 3dp		use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	

YEAR 6 APP

Counting and ordering and place value	Estimation and check	Table and multiples	Algebra	Ratio and proportion	Calculations + and -	Calculations x and ÷	Fractions and percentages	Measurement and time	Geometry	Statistics
read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.		use simple formulae □ generate and describe linear number sequences □ express missing number problems algebraically □ find pairs of numbers that satisfy an equation with two unknowns	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 addition, subtraction, multiplication and division	multiply one-digit numbers with up to two decimal places by whole numbers	use common factors to simplify fractions; use common multiples to express fractions in the same denomination	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate □	draw 2-D shapes using given dimensions and angles □	Pupils connect their work on angles, fractions and percentages to the interpretation of pie charts.
round any whole number to a required degree of accuracy				□ solve problems involving similar shapes where the scale factor is known or can be found	solve problems involving addition, subtraction, multiplication and division	□ use written division methods in cases where the answer has up to two decimal places	compare and order fractions, including fractions > 1	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	recognise, describe and build simple 3-D shapes, including making nets	Pupils both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.

								vice versa, using decimal notation to up to three decimal places		
use negative numbers in context, and calculate intervals across zero				solve problems involving unequal sharing and grouping using knowledge of fractions and multiples		solve problems which require answers to be rounded to specified degrees of accuracy	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	recognise that shapes with the same areas can have different perimeters and vice versa	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	They should connect conversion from kilometres to miles in measurement to its graphical representation.
solve number and practical problems that involve all of the above.						recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	<input type="checkbox"/> solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison	recognise when it is possible to use formulae for area and volume of shapes	illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	Pupils know when it is appropriate to find the mean of a data set
<input type="checkbox"/> identify the value of each							multiply simple pairs of proper fractions,	calculate the area of parallelograms and triangles	<input type="checkbox"/> recognise angles where they meet at a	

digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal							writing the answer in its simplest form [for example, $\frac{4}{1 \times 2} = \frac{1}{1} = 8$]		point, are on a straight line, or are vertically opposite, and find missing angles.	
							divide proper fractions by whole numbers [for example, $3 \frac{1}{2} \div 2 = 6 \frac{1}{1}$]	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 [for example, mm^3 and km^3].		
							associate a fraction with division and calculate decimal fraction	convert between miles and kilometres		

							equivalents [for example, 0.375] for a simple fraction [for example, $\frac{8}{3}$]			
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