St Mary's Catholic Primary School

Living and Learning Together – Shining in our Faith

Mathematics Progression of
Disciplinary Knowledge 2025-2026

EARLY YEARS FOUNDATION STAGE CURRICULUM

Mathematics

EYFS Statutory Educational Programme:

Mathematics EYFS Statutory Educational Programme Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

Nursery 3- and 4-year-olds	**Reception** End of Reception Early Learning Goals
Number **Comparison** Compares two small groups of up to five objects, saying when they are the same number of objects in each group, e.g. *You've got two, I've got two. Same!* **Counting** May enjoy counting verbally as far as they can go. Point or touches each item, saying one number each item, using the stable 1,2,3,4,5. Uses some number names and number language within play and may show fascination with large numbers. Begin to recognise numerals 0-10. **Cardinality** Subitises one, two and three objects (without counting) Counts to five items, recognising that the last number said represents the total counted so far (cardinal principle) Links numerals with amounts up to 5 and maybe beyond. Explores using a range of their own marks and signs to which they ascribe mathematical meanings.	**Number** **Comparison** Uses number names and symbols when comparing numbers, showing interest in large numbers. Estimates numbers of things, showing understanding of relative size. **Counting** Enjoys reciting numbers from 0 – 10(and beyond) and back from 10-0. Increasingly confident at putting numerals in order 0 – 10(ordinality) **Cardinality** Engages in subitising number to four and five. Counts out up to 10 objects from a larger group. Matches the numeral with a group of items to show how many there are (up to 10) **Composition** Shows awareness that numbers are made of (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three. In practical activities, adds one and subtracts one with numbers to 10.

Composition Through play and exploration, beginning to learn numbers are made up (composed) of smaller numbers. Beginning to use understanding of number to solve practical problems in play and meaningful activities Beginning to recognise that each counting number is one more than the one before. Separates a group of three or four objects in different ways, beginning to recognise that the total is the same. **Spatial Awareness** Responds to and uses language of position and direction. Predicts, moves and rotates objects to fit the space or create the shape they would like. **Shape** Creates their own spatial patterns showing some organisation or regularity. Explores and adds to simple linear patterns of two or three repeating items, e.g. stick (AB), or stick, leaf and stone (ABC) Joins in with simple patterns in sounds, objects, games and stories, dance and movement, predicting what comes next. **Measure** In meaningful contexts, finds the linger or shorter, heavier or lighter and more/less full of two items. Recalls a sequence of events in everyday life and stories.	Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-" **Spatial Awareness** Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints. Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they look (spatial reasoning) May enjoy making simple maps of familiar and imaginative environments, with landmarks. **Shape** Spots patterns in the environment, beginning to identify the pattern 'rule.' Chooses familiar objects to create and recreate patterns beyond AB patterns and begins to identify the unit of repeat. **Measure** Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy. Becomes familiar with measuring tools in everyday experiences and play. Is increasingly able to order and sequences events using everyday language related to time. Beginning to experience measuring time with timers and calendars.

NATIONAL CURRICULUM KEY STAGES 1 & 2

The National Curriculum aims to ensure that all pupils:

• become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing.
• sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Number - number and place value						
Aims	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Counting	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. 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 and backward	Count from 0 in multiples of 4, 8, 50 and 100 Count up and down in tenths	Count in multiples of 6, 7, 9, 25 and 1000 Count backwards through zero to include negative numbers Count up and down in hundredths	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 Count forwards and backwards in decimal steps	Count forwards or backwards in steps of integers, decimals or powers of 10 for any number

Place Value	Read and write numbers to 100 in numerals. Read and write numbers from 1 to 20 in numerals and words. Begin to recognise the place value of numbers beyond 20 (tens and ones) Identify and represent numbers using objects and pictorial representations including the number line	Read and write numbers to at least 100 in numerals and in words. Recognise the place value of each digit in a two-digit number (tens, ones Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) Identify, represent and estimate numbers using different representations, including the number line	Read and write numbers up to 1000 in numerals and in words. Read and write numbers with one decimal place. Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Identify the value of each digit to one decimal place. Partition numbers in different ways (for example, 146 = 100 + 40 + 6 & 146 = 130 + 16) identify, represent and estimate numbers using different representations, including the number line.	Read and write numbers to at least 10 000. Read and write numbers with up to two decimal places. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) Identify the value of each digit to two decimal places. Partition numbers in different ways (for example, 2.3 = 2 + 0.3 and 2.3 = 1 + 1.3) Identify, represent and estimate numbers using different representations, including the number line	Read and write numbers to at least 1 000 000. Read and write numbers with up to three decimal places. Determine the value of each digit in numbers to at least 1 000 000. Identify the value of each digit to three decimal places. Identify, represent and estimate numbers using the number line	Read and write numbers up to 10 000 000. Determine the value of each digit in numbers up to 10 000 000. Identify the value of each digit to three decimal places Identify, represent and estimate numbers using the number line
Comparing and ordering	Use the language of equal to, more than, less than (fewer), most, least	Compare and order numbers from 0 up to 100; use and = signs	Compare and order numbers up to 1000.	Order and compare numbers beyond 1000	Order and compare numbers to at least 1 000 000	Order and compare numbers up to 10 000 000

	Given a number, identify one more and one less	Find 1 or 10 more or less than a given number	Compare and order numbers with one decimal place. Find 1, 10 or 100 more or less than a given number	Order and compare numbers with the same number of decimal places up to two decimal places. Find 0.1, 1, 10, 100 or 1000 more or less than a given number.	Order and compare numbers with up to three decimal places. Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number	Order and compare numbers including integers, decimals and negative numbers. Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number
Number - number and place value						
Rounding, approximation and estimation		Round numbers to at least 100 to the nearest 10	Round numbers to at least 1000 to the nearest 10 or 100	Round any number to the nearest 10, 100 or 1000 Round decimals with one decimal place to the nearest whole number	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 Round decimals with two decimal places to the nearest whole number and to one decimal place	Round any whole number to a required degree of accuracy Round decimals with three decimal places to the nearest whole number or one or two decimal places
Multiplying by powers of 10		Understand the connection between the 10-multiplication table and place value	Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer	Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

				answer as ones, tenths and hundredths		
Negative numbers				Count backwards through zero to include negative numbers (see counting)	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero	Use negative numbers in context, and calculate intervals across zero
Sequences and patterns	Recognise and create repeating patterns with numbers, objects and shapes. Identify odd and even numbers linked to counting in twos from 0 and 1	Describe and extend simple sequences involving counting on or back in different steps	Describe and extend number sequences involving counting on or back in different steps	Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps	Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal	Describe and extend number sequences including those with 6 numbers, objects and shapes multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal
Roman numerals			Read Roman numerals from I to XII (see time)	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	
Solving number problems	Solve problems and practical problems involving all of the above	Use place value and number facts to solve problems	Solve number problems and practical problems involving these ideas	Solve number and practical problems that involve all of the above and with	Solve number problems and practical problems that involve all of the above	Solve number and practical problems that involve all of the above

				increasingly large positive numbers		
Number - addition and subtraction						
Understanding addition and subtraction	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting) Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Understand subtraction as take away and difference (how many more, how many less/fewer)	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)
Addition and subtraction facts	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.	Recall and use addition and subtraction facts for 100 (multiples of 5 and 10)	Recall and use addition and subtraction facts for 100. Recall and use addition and	Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) Derive and use	Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places)

		Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes)	Derive and use addition and subtraction facts for 100. Derive and use addition and subtraction facts for multiples of 100 totalling 1000	subtraction facts for multiples of 100 totalling 1000. Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)	addition and subtraction facts for 1 (with decimal numbers to two decimal places)	
Mental methods	Add and subtract one digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations	Select a mental strategy appropriate for the 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 - adding three one-digit numbers	Select a mental strategy appropriate for the Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds	Select a mental strategy appropriate for the Add and subtract mentally combinations of two- and three-digit numbers and decimals to one decimal place	Select a mental strategy appropriate for the Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places	Select a mental strategy appropriate for the Preform mental calculations including. with mixed operations and large numbers and decimal
Number - addition and subtraction						
Written methods	*Written methods are informal at this stage – see mental methods for	*Written methods are informal at this stage – see mental methods for	Add and subtract numbers with up to three digits, using formal written	Add and subtract numbers with up to 4 digits and decimals with one decimal	Add and subtract whole numbers with more than 4 digits and decimals with two	Add and subtract whole numbers and decimals using formal written

	expectation of calculations	expectation of calculations	methods of columnar addition and subtraction	place using the formal written methods of columnar addition and subtraction where appropriate	decimal places, including using formal written methods (columnar addition and subtraction)	methods (columnar addition and subtraction)
Estimating and checking calculations		Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Estimate the answer to a 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	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Order of operations						Use their knowledge of the order of operations to carry out calculations involving the four operations
Solving addition and subtraction problems including those with missing numbers	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 including those with missing numbers: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge	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 problems involving missing numbers	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve addition and subtraction problems involving missing numbers	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division, including those with missing numbers

		of mental and written methods				
Number - multiplication and division						
Understanding multiplication and division			Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) Understand that division is the inverse of multiplication and vice versa. Understand how multiplication and division statements	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) Recognise and use factor pairs and commutativity in mental calculations	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method)

		Understand multiplication as repeated addition. Understand division as sharing and grouping and that a division calculation can have a remainder. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	can be represented using arrays. Understand division as sharing and grouping and use each appropriately			
Multiplication and division facts		Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	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 × 12	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 numbers and cube numbers, and the notation for squared (2) and cubed (3)	Identify common factors, common multiples and prime numbers

	Recall and use doubles of all numbers to 10 and corresponding halves	Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10) Derive and use halves of simple two-digit even numbers (numbers in which the tens are even)	Derive and use doubles of all numbers to 100 and corresponding halves. Derive and use doubles of all multiples of 50 to 500	Use partitioning to double or halve any number, including decimals to one decimal place	Use partitioning to double or halve any number, including decimals to two decimal places	Use partitioning to double or halve any number
Number - multiplication and division						

Mental methods		Calculate mathematical statements for multiplication (using repeated addition) 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 of times one-digit numbers, using mental methods	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	Multiply and divide numbers mentally drawing upon known facts. Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	Perform mental calculations, including with mixed operations and large number
Written methods	*Written methods are informal at this stage – see mental methods for expectation of calculations	*Written methods are informal at this stage – see mental methods for expectation of calculations	Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers of times one-digit numbers, 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 multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Multiply one-digit numbers with up to two decimal places by whole numbers

			Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, progressing to formal written methods	Divide numbers up to 3 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Use written division methods in cases where 13 the answer has up to two decimal places
Estimating and checking calculations			Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Order of operations						Use their knowledge of the order of operations to carry out calculations involving the four operations
Number - multiplication and division						
Solving multiplication and division problems including those with missing numbers	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 (including those with remainders), 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 (and interpreting remainders), 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, division (including interpreting remainders), integer scaling problems and harder correspondence problems such as n objects are connected to m objects	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

Number - fractions (including decimals and percentages)						

Understanding fractions	Understand that a fraction can describe part of a whole. Understand that a unit fraction represents one equal part of a whole	Understand and use the terms numerator and denominator. Understand that a fraction can describe part of a set. Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be	Show practically or pictorially that a fraction is one whole number divided by another (for example, 3 4 can be interpreted as 3 ÷ 4) Understand that finding a fraction of an amount relates to division	Understand that a fraction is one whole number divided by another (for example, 3 4 can be interpreted as 3 ÷ 4)		
Fractions of objects, shapes and quantities	Recognise, find and name a half as one of two equal parts of an object, shape or quantity (including measure) Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure)	Recognise, find, name and write fractions 1 3, 1 4, 2 4 and 3 4 of a length, shape, set of objects or quantity	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. Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-	recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators. Recognise that hundredths arise when dividing an object by a hundred	Recognise mixed numbers and improper fractions and convert from one form to the other. Read and write decimal numbers as fractions (e.g. 0.71 = 71 100)	

			digit numbers or quantities by 10	and dividing tenths by ten		
Counting, comparing and ordering fractions		Count on and back in steps of 1 2 and 1 4	Count on and back in steps of 1 2, 1 4 and 1 3. Compare and order unit fractions and fractions with the same denominators (including on a number line)	Count on and back in steps. Compare and order unit fractions and fractions with the same denominators (including on a number line) of unit fractions	Count on and back in mixed number steps such. Compare and order fractions whose denominators are all multiples of the same number (including on a number line) as 11 2	Compare and order fractions, including fractions >1 (including on a number line
Number - fractions (including decimals and percentages)						

Equivalence		Write simple fractions for example, 1 2 of 6 = 3 and recognise the equivalence of 2 4 and 1 2	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions. Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to 1 4, 1 2, 3	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Recognise and use thousandths and relate them to tenths, hundredths and decimal 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. Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 8)
Calculating with fractions			Add and subtract fractions with the same denominator within one whole (using diagrams) (for example, 5 7 + 1 7 = 6 7)	Add and subtract fractions with the same denominator (using diagrams)	Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams) Write mathematical statements >1 as a mixed number (e.g. 2 5 + 4 5 = 6 5 = 1 1 5)	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

					Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	(using diagrams) (e.g. 1 4 × 1 2 = 1 8) Divide proper fractions by whole numbers (using diagrams) (e.g. 1 3 ÷ 2 = 1 6)
Number - fractions (including decimals and percentages)						
Percentages					Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred,' and write percentages as a fraction with denominator 100, and as a decimal	Find simple percentages of amounts

Solving problems involving fractions, decimals and percentages			Solve problems that involve all of the above	Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. Solve simple measure and money problems involving fractions and decimals to two decimal places	Solve problems involving fractions. Solve problems involving number up to three decimal places. 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	Solve problems involving fractions. Solve problems which require answers to be rounded to specified degrees of accuracy. Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison
Ratio and proportion						

Ratio and proportion						Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Solve problems involving similar shapes where the scale factor is known or can be found
Algebra						
Algebra						Express missing number problems algebraically Use simple formulae. Generate and describe linear number sequences. Find pairs of numbers that satisfy an equation with two unknowns.

						Enumerate possibilities of combinations of two variables
Measurement (length/ height, perimeter, area and mass/weight)						
Length / height	Measure and begin to record lengths and heights, using nonstandard and then manageable standard units (m and cm) within children's range of counting competence. Compare and describe lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit using rulers. Compare and order lengths and record the results using >, < and =	Measure, add and subtract lengths (m/cm/mm) Compare lengths (m/cm/mm)	Estimate and calculate lengths. Compare lengths	Use, read and write standard units of length to a suitable degree of accuracy. Understand and use approximate equivalences between metric and common imperial units such as inches	Use, read and write standard units of length using decimal notation to three decimal places

Perimeter			Understand that perimeter is a measure of distance around the boundary of a shape. Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.	Recognise that shapes with the same areas can have different perimeters and vice versa.
Area				Understand that area is a measure of surface within a given boundary. Find the area of rectilinear shapes by counting squares	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	Calculate the area of parallelograms and triangles. Recognise when it is possible to use the formulae for area and volume of shapes

Mass	Measure and begin to record mass/weight, using non-standard and then standard units (kg and g) within children's range of counting competence. Compare and describe mass/weight (for example, heavy/light, heavier than, lighter than)	Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales. Compare and order mass and record the results using >, < and =	Measure, add and subtract mass (kg/g) Compare mass (kg/g)	Estimate and calculate mass. Compare mass	Use, read and write standard units of mass to a suitable degree of accuracy. Understand and use approximate equivalences between metric and common imperial units such as pounds	Use, read and write standard units of mass using decimal notation to three decimal places
Measurement (capacity, volume, temperature and conversion)						
Capacity / volume	Measure and begin to record capacity and volume using nonstandard and then standard units (litres and ml) within children's range of counting competence. Compare and describe capacity and volume (for example, full/empty, more	Choose and use appropriate standard units to estimate and measure capacity and volume (litres/ml) to the nearest appropriate unit using measuring vessels. Compare and order volume/capacity and record the results using >, < and =	Measure, add and subtract volume/capacity (l/ml) Compare volume/capacity (l/ml)	Estimate and calculate volume/capacity. Compare volume/capacity	Estimate (and calculate) volume (for example, using 1 cm3 blocks to build cuboids (including cubes)) and capacity (for example, using water) Understand the difference between liquid volume, including capacity and solid volume. Understand and use approximate equivalences between metric and common	Use, read and write standard units of volume using decimal notation to three decimal places. Calculate and estimate volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3) and extending to other units (for example, mm3 and km3)

	than, less than, half, half full, quarter)				imperial units such as pints	Compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3) and extending to other units (for example, mm3 and km3
Temperature		Choose and use appropriate standard units to estimate and measure temperature to the nearest degree (°C) using thermometers	Continue to estimate and measure temperature to the nearest degree (°C) using thermometers	Order temperatures including those below 0°C	Continue to order temperatures including those below 0°C	Calculate differences in temperature, including those that involve a positive and negative temperature

Conversion				convert between different units of measure (e.g. kilometre to metre; hour to minute)	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	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 three decimal places. Convert between miles and kilometres
Measurement (time)						
Time	Recognise and use language relating to dates, including days of the week, weeks, months and years.					
	Compare and describe time (for example, quicker, slower, earlier, later) Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday,	Compare and sequence intervals of time	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	Convert between different units of time, e.g. hour to minute	Convert between units of time in a problem-solving context	

	tomorrow, morning, afternoon and evening					
	Measure and begin to record time (hours, minutes, seconds)	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			
	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	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	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 increasing accuracy to the nearest minute. Compare durations of events (for example to calculate the time taken by particular events or tasks)	Read, write and convert time between analogue and digital 12 and 24-hour clocks	Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks	Use, read and write standard units of time
Measurement (money and solving problems)						

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 Find different combinations of coins that equal the same amounts of money. Add and subtract money of the same unit, including giving change	Continue to recognise and use symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds and pence. Recognise that ten 10p coins are equivalent to £1 and that each coin is 1 10 of £1 Add and subtract amounts of money to give change, using both £ and p in practical contexts	Write amounts of money using decimal notation Recognise that one hundred 1p coins are equivalent to £1 and that each coin is 1 100 of £1 Estimate, compare and calculate money in pounds and pence		
Solving problems involving money and measures	Solve practical problems for: - lengths and heights - mass/weight - capacity and volume - time	Solve simple problems in a practical context involving addition and subtraction of money and measures (including time	Solve problems involving money and measures and simple problems involving passage of time	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days and problems involving money and measures	Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation including scaling. Solve problems involving converting between units of time	Solve problems involving the calculation and conversion of units of measure (including money and time), using decimal notation up to three decimal places where appropriate

Geometry - properties of shapes						
Properties of shapes	Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles. Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres	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) Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	Draw 2-D shapes and describe them. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.	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. Complete a simple symmetric figure with respect to a specific line of symmetry. Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Compare and classify geometric shapes based on their properties and size	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 angle. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Compare and classify geometric shapes based on their properties and sizes. Draw 2-D shapes using given dimensions and angles. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise, describe and build simple 3-D shapes, including making nets

Angles and rotation	Describe movement, including whole, half, quarter and three-quarter turn	Use mathematical vocabulary to describe movement, including rotation as a turn. Understand the link between rotation and turns in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)	Recognise angles as a property of shape or 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 whether angles are greater than or less than a right angle	Identify acute and obtuse angles and compare and order angles up to two right angles by size	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (°) Identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and 1 /2 a turn (total 180°) - other multiples of 90°	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Find unknown angles in any triangles, quadrilaterals, and regular polygons
Geometry - position and direction						
Patterns	Recognise and create repeating patterns with objects and shapes	Order and arrange combinations of mathematical objects in patterns and sequences				

Position and direction	Describe position and direction	Use mathematical vocabulary to describe position, movement, including movement in a straight line				
Coordinates (including reflection and translation)			Describe positions on a square grid labelled with letters and numbers.	Describe positions on a 2-D grid as coordinates in the first quadrant. Plot specified points and draw sides to complete a given polygon. Describe movements between positions as translations of a given unit to the left/right and up/down	Describe positions on the first quadrant of a coordinate grid. Plot specified points and complete shapes. 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
Statistics						

Sorting and classifying	Sort objects, numbers and shapes to a given criterion and their own	Compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects	Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects	Use a variety of sorting diagrams to compare and classify numbers and geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes)	Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes)
Present and interpret data	Present and interpret data in block diagrams using practical equipment	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 using data	Ask and answer simple questions by counting the number of objects in each category Ask and answer questions by comparing categorical data	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 twostep questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts, pictograms, and tables	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Solve comparison, sum and difference problems using information presented in all types of graphs including a line graph	Solve comparison, sum and difference problems using information presented in all types of graphs
Averages					Calculate and interpret the mode, median and range	Calculate and interpret the mean as an average