

Long Lane Primary School Maths Progression



The Maths Curriculum is delivered using the National Curriculum, and the Early Learning Goals are followed to ensure continuity and progression from the Foundation Stage through to the National Curriculum. Note: At Long Lane, problem solving and reasoning is integrated into lessons. Sometimes Maths lessons will have a problem solving focus where a specific problem solving skill may be taught, but generally problem solving happens within the context of other lessons.

Number and Place Value

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mathematical vocabulary	To build up vocabulary that reflects the breadth of their experiences To extend vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words	To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at year 1	To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1	To read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling	To read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling	To read, spell and pronounce mathematical vocabulary correctly	To read, spell and pronounce mathematical vocabulary correctly
Counting	Estimates how many objects they can see and then counts them	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
	Counts an irregular arrangement of objects	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	

		given a number, identify one more and one less		find 10 or 100 more or less than a given number	find 1000 more or less than a given number		
Comparing numbers	To compare two groups of objects, saying when they have the same number To use the language of 'more' and 'fewer' to compare two sets of objects	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	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
	To place numbers one to 20 in order				<i>compare numbers with the same number of decimal places up to two decimal places (copied from Fractions)</i>		
Identifying, estimating and representing numbers	Estimates how many objects they can see and then counts them To find one more or one less from a group of up to five objects, then ten objects To say which number is one more or one less than a given number from one to 20	identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations
Read and write numbers (including	Selects correct numeral for 1-20 objects	read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1 000 in numerals and in words		read, write, order and compare numbers to at least 1 000 000 and determine the	read, write, order and compare numbers up to 10 000 000 and determine the

Roman Numerals)						value of each digit (appears also in Comparing Numbers)	value of each digit (appears also in Understanding Place Value)
	<p>Records using marks they can explain</p> <p>To show an interest in numerals in the environment</p> <p>To use some number names accurately in play</p> <p>To recognise some numerals of personal significance</p> <p>To recognise numerals 1 to 5</p>			<p><i>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement)</i></p>	<p>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.</p>	<p>read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p>	
Understanding place value	<p>To show curiosity about numbers by offering comments or asking questions.</p>		<p>recognise the place value of each digit in a two-digit number (tens, ones)</p>	<p>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</p>	<p>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</p>	<p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)</p>	<p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p>
					<p>find the effect of dividing a one- or two-digit number</p>		<p>identify the value of each digit to three decimal</p>

					by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)		places and multiply and divide numbers by 10, 100 and 1 000 where the answers are up to three decimal places (copied from Fractions)
Rounding					round any number to the nearest 10, 100 or 1000	round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	round any whole number to a required degree of accuracy
					round decimals with one decimal place to the nearest whole number (copied from Fractions)	round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)	solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)
Problem solving	Begins to identify own mathematical problems based on own fascinations		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 increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above

Addition and Subtraction

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number bonds	<p>Uses the language of more and fewer to compare 2 sets of objects</p> <p>Finds the total number of 2 sets of objects by counting them all</p>	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				
Mental Calculation	<p>Place numbers in order Is starting to find 1 more or less than a given number up to 20</p> <p>Using vocabulary involved with addition and subtraction</p> <p>Records using marks they can explain</p>	<p>add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)</p>	<p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers <p>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>	<p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds 		<p>add and subtract numbers mentally with increasingly large numbers</p>	<p>perform mental calculations, including with mixed operations and large numbers</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>

Written methods		read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
Inverse, estimating and checking answers			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, levels of accuracy.
Problem solving		solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
		<i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</i>					Solve problems involving addition, subtraction, multiplication and division

(copied from
Measurement)

Multiplication and Division

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and division facts	Begin to solve problems involving doubling, halving and sharing	<i>count in multiples of twos, fives and tens (copied from Number and Place Value)</i>	<i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)</i>	<i>count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)</i>	<i>count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value)</i>	<i>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)</i>	
	Records using marks they can explain		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		
Mental calculation			write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Written 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	perform mental calculations, including with mixed operations and large numbers	

		show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 <i>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions)</i>	
Written calculation			calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs layout	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods)	multiply two-digit and three-digit numbers by a one-digit number using formal written	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
						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 whole number using the formal written method of short division where appropriate for the context divide numbers up to 4

							<p>digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</p> <p><i>use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))</i></p>
<p>Properties of number</p>					<p>recognise and use factor pairs and commutativity in mental calculations (repeated)</p>	<p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19</p>	<p>identify common factors, common multiples and prime numbers</p> <p><i>use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)</i></p> <p><i>calculate, estimate and compare volume of cubes and cuboids using</i></p>

						recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	<i>standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³ (copied from Measures)</i>
Inverse operations				<i>estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)</i>	<i>estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)</i>		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy
Problem solving		solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	solve problems involving addition, subtraction, multiplication and division
						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	<i>solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)</i>

Fractions including decimals and percentages

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting in fractional steps			<i>Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line (Non Statutory Guidance)</i>	count up and down in tenths	count up and down in hundredths	<i>To extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line. To continue to practise counting forwards and backwards in simple fractions</i>	
Recognising fractions	Begin to solve problems involving doubling, halving and sharing	recognise, find and name a half as one of two equal parts of an object, shape or quantity	recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ 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 that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	
	Records using marks they can explain			recognise that tenths arise from dividing an object into 10 equal parts			

				and in dividing one – digit numbers or quantities by 10.			
		recognise, find and name a quarter as one of four equal parts of an object, shape or quantity		recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
Comparing fractions				compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1
Comparing decimals					compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places
Rounding including decimals					round decimals with 1 decimal place to the nearest whole number	round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
Equivalence			write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
					recognise and write decimal equivalents of any number of tenths or hundredths	read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple

							fraction (e.g. 3/8)
						recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
					recognise and write decimal equivalents to 1/4; 1/2; 3/4	recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Adding and subtracting fractions				add and subtract fractions with the same denominator within one whole (e.g. $5/7 + 1/7 = 6/7$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
						recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/5 = 11/5$)	
Multiplication and division of						multiply proper fractions and mixed numbers by whole numbers,	multiply simple pairs of proper fractions, writing the answer in its

fractions						supported by materials and diagrams	simplest form (e.g. $1/4 \times 1/2 = 1/8$)
							multiply one-digit numbers with up to two decimal places by whole numbers
							divide proper fractions by whole numbers (e.g. $1/3 \div 2 = 1/6$)
Multiplication and division of decimals							multiply one-digit numbers with up to two decimal places by whole numbers
						find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
							identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
							associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375) for a simple

							fraction (e.g. $\frac{3}{8}$)
							use written division methods in cases where the answer has up to two decimal places
Problem solving				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 problems involving numbers up to three decimal places	
					solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.	

Ratio and Proportion - Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and proportion							solve problems involving the relative sizes of

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

Measurement

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Comparing and Estimating	Orders 2 or 3 items by length or height	compare, describe and solve practical problems for: * lengths and heights [e.g.	compare and order lengths, mass, volume/capacity and record the results using $>$, $<$		estimate, compare and calculate different measures, including money in	calculate and compare the area of squares and rectangles including using	calculate, estimate and compare volume of cubes and cuboids using standard units,

		long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]	and =		pounds and pence (also included in Measuring)	standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes (also included in measuring)	including centimetre cubed (cm ³) and cubic metres (m ³), and extending to other units such as mm ³ and km ³ .
	Orders 2 items by weight or capacity					estimate volume (e.g. using 1 cm ³ blocks to build cubes and cuboids) and capacity (e.g. using water)	
		sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	compare and sequence intervals of time	compare durations of events, for example to calculate the time taken by particular events or tasks			
				estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use			

				vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)				
Measuring and calculating		measure and begin to record the following: * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds)	choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)	use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Converting)	
				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	
	Uses everyday language to talk about size, weight, capacity, distance, time and money to solve problems	recognise and know the value of different denominations of coins and notes	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	add and subtract amounts of money to give change, using both £ and p in practical contexts				
			find different combinations of coins that equal the same amounts of money					

			<p>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p>				
<p>Telling the time</p>	<p>Orders and sequences familiar events</p>	<p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>	<p>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.</p>	<p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p>	<p>read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)</p>		
		<p>recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)</p>	<p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)</p>			
						<p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)</p>	<p>solve problems involving converting between units of time</p>

Converting			know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year	convert between different units of measure (e.g. kilometre to metre; hour to minute)	convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
					read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	solve problems involving converting between units of time	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)
					solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	convert between miles and kilometres

Geometry - properties of shape

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identifying shapes and their properties	<p>beginning to use everyday names for 'solid' 3D shapes and 'flat' 2D shapes</p> <p>beginning to use everyday terms to describe shapes</p> <p>select a particular named shape</p> <p>explore characteristics of everyday objects and shapes</p> <p>use mathematical language to describe shapes</p>	<p>recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].</p>	<p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p>		<p>identify lines of symmetry in 2-D shapes presented in different orientations</p>	<p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p>	<p>recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)</p>
			<p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p>				<p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>

			identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
Drawing and constructing				draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them complete a simple	symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees (o)	draw 2-D shapes using given dimensions and angles
							recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
Comparing and classifying			compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	use the properties of rectangles to deduce related facts and find missing lengths and angles	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
						distinguish between regular and irregular polygons based on reasoning about equal sides and angles	
Angles			recognise angles as a property of		know angles are measured in		

			shape or a description of a turn		degrees: estimate and compare acute, obtuse and reflex angles		
			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	identify: * angles at a point and one whole turn (total 360o) * angles at a point on a straight line and ½ a turn (total 180o) * other multiples of 90o	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
			identify horizontal and vertical lines and pairs of perpendicular and parallel lines				

Geometry – position and direction

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Position, direction and movement	use everyday language to talk about position and distance	describe position, direction and movement, including half, quarter and three-quarter turns	use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns		describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down draw and translate simple shapes on the coordinate plane,	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.

			(clockwise and anti-clockwise)		and reflect them in the axes. plot specified points and draw sides to complete a given polygon		
Pattern	recognise, create and describe patterns		order and arrange combinations of mathematical objects in patterns and sequences				

Statistics

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

				many fewer?'] using information presented in scaled bar charts and pictograms and tables.	presented in bar charts, pictograms, tables and other graphs.	presented in a line graph	
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Algebra and algebraic thinking

Area of Study	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Equations		<p><i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ (copied from Addition and Subtraction)</i></p> <p><i>solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)</i></p> <p><i>represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)</i></p>	<p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. (copied from Addition and Subtraction)</i></p> <p><i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)</i></p>	<p><i>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)</i></p>		<p><i>use the properties of rectangles to deduce related facts and find missing lengths and angles (copied from Geometry: Properties of Shapes)</i></p>	<p>express missing number problems algebraically</p> <p>find pairs of numbers that satisfy number sentences involving two unknowns</p> <p>enumerate all possibilities of combinations of two variables</p>
Formulae					<p><i>Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit. (Copied from NSG measurement)</i></p>		<p>use simple formulae - recognise when it is possible to use formulae for area and volume of shapes (copied from Measurement)</p>

Sequences		<i>sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)</i>	<i>compare and sequence intervals of time (copied from Measurement) generate and describe linear number sequences order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction)</i>				generate and describe linear number sequences
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All programmes of study statements are included and some appear twice. This is indicated by the text being in italics. This occurs where:

- The statement has central relevance to more than one sub category within a topic;
- The statement has central relevance to more than one mathematics topic.

This is done to reflect the aims of the curriculum that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. However, the connections made are not intended to be exhaustive and teachers should seek to support pupils in making other connections.