Maths Progression 2023/24

Place value and number

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
All using concrete and pictorial resources Match and sort Compare amounts Representing and comparing numbers to 10 1 more and 1 less Introducing 0 Counting to 10 Counting patterns beyond 10	To read and write numbers from 1 to 20 in numerals and words To compare numbers and objects To order numbers and objects To identify 1 more or 1 less from a given number To read and write numbers from 1 to 50 in numerals and words To identify 1 more or 1 less from a given number To count to and across 100, forward and backward, beginning with 0 or 1, or from any given number.	To count in steps of 2 and 5 from 0, and in tens from any number, forward and backward. To read and write numbers to at least 100 in numerals and in words. To compare and order numbers from 0 up to 100; use < > and = signs. To recognise the place value of each digit in a 2-digit number. To count in steps of 3 from 0, and in tens from any number, forward and backward.	To compare and order numbers up to 1000. To recognise the place value of each digit in a 3-digit number. To count from 0 in multiples of 4, 8, 50 and 100. To find 10 or 100 more, or less, than a given number. To read and write numbers to 1,000 in numerals and words	To count backwards through zero to include negative numbers To count in multiples of 6, 7, 9, 25 and 1000. To read Roman numerals to 100 and understand that over time, the numeral system changes to include the concept of zero and place value. To find 1000 more or less than a given number. To compare and order numbers beyond 1000. To round any number to the nearest 10, 100 or 1000.	To count forward or backwards in steps of powers of 10 for any given number up to 1,000,000. To count up and down in thousandths; recognise that thousandths arise from dividing an object into 1000 equal parts and in dividing numbers or quantities by 1000. To interpret negative numbers in context, count forwards and backwards with positive and negative numbers, including through zero. To read Roman numerals to 1000 and recognise years written in Roman numerals. To read, write, order and compare numbers	To read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. To use negative numbers in context and calculate intervals across zero. To round any whole number to the required degree of accuracy. To solve number and practical problems that involve all other number and place value objectives.

					to at least 1,000,000 and determine the value of each digit. To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 or 100000.	
Addition and Subtraction						
All using concrete and pictorial resources Combining 2 amounts Number bonds to 10 Adding more Taking away	To read, write and interpret mathematical statements involving + - = signs. To understand fact families To represent and use number bonds and related subtraction and addition facts within 10. To use subtraction to find the difference. To add and subtract 1-digit and 2- digit numbers to 20, including zero. To solve one-step problems that involve	To recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. To add and subtract numbers mentally, including: 2-digit numbers and ones; 2-digit numbers and tens; two 2- digit numbers; adding three 1-digit numbers. To understand that addition of any two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	To add and subtract numbers mentally, including: 3-digit number and ones; 3-digit numbers and tens; 3-digit numbers and hundreds. To add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction. To estimate the answer to a calculation and use the inverse operations to check your answers. To solve word problems including missing number	To add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction, where appropriate. To estimate and use inverse operations to check answers to a calculation. To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	To add and subtract numbers mentally with increasingly large numbers. To add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. To solve addition and subtraction multi-step problems in contexts, deciding which operations and	To perform mental calculations, including with mixed operations and large numbers. To use knowledge of the order of operations to carry our calculations involving the four operations. To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. To solve addition and subtraction multi-step problems in contexts, deciding which operations and

	addition and subtraction, using concrete objects and pictorial representations, and missing number problems.	To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.	problems, number facts, place value and more complex addition and subtraction		methods to use and why.	methods to use and why. To solve problems involving addition, subtraction, multiplication and division.
Multiplication and Division						
Doubling and sharing using concrete resources	To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial	To calculate the mathematical statements for multiplication and division within the multiplication tables and write them using the x ÷ and = signs. To understand that multiplication of two numbers can be one in any order (commutative) and division of one number by another cannot. To recognise that division is the inverse of multiplication and use to check calculations.	To recall and use the multiplication and division facts for the 3, 4 and 8 tables. To write and calculate mathematical statements for multiplication using known multiplication tables, including 2-digit x 1-digit, using mental and progressing to formal written methods. To write and calculate mathematical statements for division using known multiplication tables, including 2-digit x 1-digit, using mental and progressing to	To find the effect of multiplying a number with up to 2 decimal places by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. To recall multiplication and division facts for tables up to 12x12. To use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; multiplying three numbers together.	To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. To multiply and divide numbers mentally drawing upon known facts. To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers and establish whether a number up to 100 is prime and recall prime numbers up to 19. To multiply and divide whole numbers and those involving	To multiply multi-digit numbers up to 4-digits by a 2-digit whole number using the formal written method of long multiplication. To divide numbers up to 4-digits by a 2-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. To divide numbers up to 4-digits by a 2-digit number using the formal written

		To recall and use multiplication and division facts for the 2, 5 and 10 tables, including recognising odd and even numbers.	formal written methods. To practise formal methods of multiplication and division, including a high focus on reasoning.	To recognise and use factor pairs and commutativity in mental calculations. To multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout. To divide 2-digit and 3-digit numbers by a 1-digit number using formal written layout with no remainder.	decimals by 10, 100 and 1000. To multiply numbers up to 4-digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers. To divide numbers up to 4-digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.	method of short division, where appropriate, interpreting remainders according to the context. To solve multiplication and division multi-step problems in contexts, deciding which operations and methods to use and why.
Fractions and Decimals						
	To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	To write simple fractions and recognise the equivalence. To recognise, find, name and write factions 1/3, 1/4, 2/4, 1/2, 3/4 of a length, shape, set of objects, or quantity.	To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. To compare and order unit fractions, and fractions with the same denominators.	To recognise and show, using diagrams, families of common equivalent fractions. To add and subtract fractions with the same denominator. To find the effect of dividing a 1- digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones,	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. To recognise mixed numbers and improper fractions and convert from one form to the other and	To compare and order fractions, including fractions. To use common factors to simplify fractions; use common multiples to express fractions in the same denomination. To recall and use equivalences between

			To recognise and show, using diagrams, equivalent fractions with small denominators. To add and subtract fractions with the same denominator within one whole	tenths and hundredths. To count up and down in hundredths; recognise that hundredths arise from dividing an object into one 100 equal parts and in dividing numbers or quantities by 100. To recognise and write decimals equivalents of any number of tenths or hundredths. To recognise and write decimal equivalents to ¼, ½ and ¾. To round decimals with one decimal place to the nearest whole number. To compare numbers with the same number of decimal places up to two decimal places.	write mathematical statements. To compare and order fractions whose denominators are all multiples of the same number. To read and write decimal numbers as fractions, e.g. 0.71 = 71/100. To round decimals with two decimal places to the nearest whole number and to one decimal place. To read, write, order and compare numbers with up to three decimal places. To recognise the percent 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.	simple fractions, decimals and percentages, including different contexts. To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. To multiply simple pairs of proper fractions, writing the answer in the simplest form. To divide proper fractions by whole numbers. To associate a fraction with division to calculate decimal fraction equivalents, for simple fractions

					To add and subtract decimals with the same and different number of decimal places. To add and subtract wholes and decimals. Multiply and divide decimals by 10,100 and 1000	

Measures

Compare size, mass and capacity using practical/ concrete resources Comparing Length and height Key times of day/ routines	To measure and begin to record the following: mass/weight. To measure and begin to record the following: length and heights. To measure and begin to record the following: capacity and volume. To compare, describe and solve practical problems for: lengths and heights and mass/weight	To tell and write the time to quarter past/to the hour and draw the hands on a clock face to show these times. To compare and sequence intervals of time. To choose and use appropriate standard units to estimate and measure: length/height in any direction (m/cm); mass (kg/g) to the nearest appropriate unit, using rulers and scales.	To measure the perimeter of simple 2D shapes. To estimate and read time with increasing accuracy to the nearest minute; Tell and write the time from an analogue clock, including using Roman numerals from I to XII. To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/ capacity (l/ml). To read 12-hour and 24-hour clocks.	To measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m. To find the area of rectilinear shapes by counting squares. To read, write and convert time between analogue and digital 12- and 24-hour clocks. To convert between different units of measure (e.g. km to m; hr to min).	To measure and calculate the perimeter of composite rectilinear shapes in cm and m. To 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. To convert between different units of metric measure (e.g.	To calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3 and m3 , and extending to other units such as mm3 and km3 . To convert between miles and km. To 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,

	To compare, describe and solve practical problems for: capacity and volume

To recognise and use language relating to dates, including days of the week, weeks, months, years.

To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

To sequence events in chronological order using language (e.g. before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening).

To compare, describe and solve practical problems for: time.

To recognise and know the value of different denominations of coins and notes. | To compare and order lengths and mass, and record the results using >, < and =.

To choose and use appropriate standard units to estimate and measure: temperature (°C); capacity (l/ml) to the nearest appropriate unit, using thermometers and measuring vessels. | To record and compare time in terms of seconds, minutes, hours.

To use vocabulary such as o'clock, am/pm, morning

To know the numbers of seconds in a minute and the number of days in each month, year and leap year.

To compare durations of events, for example to calculate time taken by particular events or tasks. | | km/m; cm/m; cm/mm; g/kg; l/ml).

To solve problems involving converting between units of time.

To read and interpret timetables

To estimate volume (e.g. using 1 cm3 blocks to build cuboids, including cubes) and capacity (e.g. using water). | using decimal notation to three decimal places.

To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.

To recognise when it is possible to use formulae for area and volume of shapes.

To recognise that shapes with the same areas can have different perimeters and vice versa.

To calculate the area of parallelograms and triangles. |

Geometry						
Recognise and name Circles, triangles and shapes with 4 sides

Following a pattern

Positional language/ where do things belong

Recognise and name 3d shapes | To recognise and name common 2D shapes, including circles and triangles.

To recognise and name common 3D shapes, including: cuboids (including cubes), pyramids, spheres.

To describe position, direction and movement, including half, quarter and three-quarter turns . | To identify 2D shapes on the surface of 3D shapes.

To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.

To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.

To compare and sort common 2D and 3D shapes and everyday objects.

To order and arrange combinations of mathematical objects in patterns and sequences.

To use mathematical vocabulary to describe position, | I make 3D shapes using modelling materials; recognise 3D shapes in different orientations; and describe them.
To draw 2D shapes.

To recognise angles are a property of shape or a description of a turn.

To identify right angles, recognise that two right angles make a half-turn, three make three quarters and four a complete turn

To identify whether angles are greater than or less than a right angle.

To identify horizontal and vertical lines and pairs of perpendicular and parallel lines. | To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.

To describe positions on a 2D grid as coordinates in the first quadrant.

To identify lines of symmetry in 2D shapes presented in different orientations.

To complete a simple symmetric figure with respect to a specific line of symmetry.

To describe positions on a 2D grid as coordinates in the first quadrant.

To describe movements between positions as translations of a given | To know angles are measured in degrees; To estimate and compare acute, obtuse and reflex angles.

To identify angles at a point on a straight line and ½ a turn (total 180°); and I identify angles at a point and one whole turn (total 360°); I identify other multiples of 90°;

To draw given angles, and measure them in degrees.

To measure accurately with a protractor

To 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. | To describe positions on the full coordinate grid, (all four quadrants).

To draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.

To draw 2D shapes using given dimensions and angles.
To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |

		direction and movement, including movement in a straight line distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).		unit to the left/right and up/down. To plot specified points and draw sides to complete a given polygon. To identify acute and obtuse angles, and compare and order angles up to two right angles by size.	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. To identify 3D shapes, including cubes and other cuboids, from 2D representations. To use the properties of rectangles to deduce related facts and find missing lengths and angles.	To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Statistics						
		To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and compare categorical data To interpret and construct: pictograms; tally charts; block	To interpret and present data using: bar charts; pictograms and tables. To solve 1-step and 2-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts, pictograms and other graphs.	To interpret and present discrete and continuous data using appropriate graphical methods, including: bar charts and time graphs. To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	To complete, read and interpret information in: tables To solve comparison, addition and difference problems using information presented in a line graph.	To interpret and construct: pie charts and line graphs and use these to solve problems. To calculate and interpret the mean as an average

		diagrams and simple tables.				
Algebra , Ratio and Proportion						
						To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. To solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison. To express missing number problems algebraically and use simple formulae. To find pairs of numbers that satisfy number sentences with two unknowns.