Tollesbury School

Belong Discover Achieve

Skills Progression

Subject area: Mathematics

EYFS

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. In EYFS, children are provided with frequent and varied opportunities to build and apply their understanding through continuous provision, such as using manipulatives and tens frames for organising counting.

I can count forwards and backwards to 20, starting at 0 or 1, or from any given number.
I can recognise numerals to 10.
I can understand numbers and have a number sense to 10.
I can understand that there are patterns to numbers (for example, even, odd, sharing, doubles)
I can start to use the language of measures (for example, longer/shorter, heavier/lighter, full/empty, taller/shorter).
I can start to use the language to explore properties of shape (for example, straight lines, sides, curved, edges)
I can start to use positional language (for example, under, over, between, through).
I can subitise and recognise quantities without counting.
I can compare numbers using the language of more and less.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	I can count to and across 100, forwards and backwards, beginning with 0 or 1 or from any given number. I can count to 100 in numerals. I can count in multiples of twos, fives and tens.	I can count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward.	I can count from 0 in multiples of 4, 8, 50 and 100.	I can count in multiples of 6, 7, 9, 25 and 1000. I can count backwards through 0 to include negative numbers.	I can count forwards and backwards in steps of powers of 10 for any given number up to 1000000. I can count forwards and backwards with positive and negative whole numbers, including through 0.	I can count using positive and negative numbers and calculate intervals across 0.

Representing Numbers		I can identify and represent numbers using objects and pictorial representations, including the number line. I can read and write numbers to 100 in numerals. I can read and write numbers from 1 to 20 in numerals and words.	I can identify, represent and estimate numbers using different representations, including the number line. I can read and write numbers to at least 100 in numerals and in words.	I can identify, represent and estimate numbers using different representations. I can read and write numbers up to 1000 in numerals and words.	I can identify, represent and estimate numbers using different representations. I can read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value.	I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals. I can read and write numbers to at least 1,000,000.	I can read and write numbers up to 10,000,000.
Place Value		I can, given a number, identify 1 more and 1 less. I can use the language of: equal to, more than, less than (fewer), most, least.	I can recognise the place value of each digit in a two-digit number (tens and ones). I can compare and order numbers from 0 up to 100. I can use the <, > and = signs.	I can recognise the place value of each digit in a three-digit number (hundreds, tens and ones). I can find 10 or 100 more or less than a given number. I can compare and order numbers up to 1000. I can solve number problems and practical	I can recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones). I can find 1000 more or less than a given number. I can order and compare numbers beyond 1000. I can round any number to the nearest 10, 100 or 1000. I can solve number problems and practical	I can determine the value of each digit in numbers up to at least 1,000,000. I can interpret negative numbers in context. I can order and compare numbers up to at least 1,000,000. I can round any number up to 1,000,000 up to the nearest 10, 100, 1000, 10,000 and 100,000. I can solve number problems and practical	I can determine the value of each digit in numbers up to 10,000,000. I can use negative numbers in context. I can order and compare numbers up to 10,000,000. I can round any whole number to a required degree of accuracy.

			I can use place value and number facts to solve problems.	problems involving all of the above.	problems involving all of the above and with increasingly large positive numbers.	problems that involve all of the above.	I can solve number and practical problems that involve all of the above.
Addition and Subtraction: Recall, Represent and Use		I can read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. I can represent and use number bonds and related subtraction facts within 20.	I can recall and use addition and subtraction facts up to 20 fluently and derive and use related facts up to 100. I can show that addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot. I can recognise and use the inverse relationship between addition and subtraction and use this to check calculations.	I can estimate the answer to a calculation and use the inverse operation to check answers.	I can estimate and use inverse operations to check answers to a calculation.	I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Addition and Subtraction: Calculations		I can add and subtract one-digit and two-digit numbers to 20, including 0	I can add and subtract numbers using concrete objects, pictorial representations and mentally, including: - a two-digit number and ones,	I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. I can add and subtract numbers mentally, including:	I can add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate.	I can add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction). I can add and subtract numbers mentally with	I can use my knowledge of the order of operations to carry out calculations involving the four operations.

			- a two-digit number and tens, - 2 two-digit numbers, - adding 3 one-digit numbers.	- a three – digit number and ones - a three – digit number and tens - a three- digit number and hundreds		increasingly large numbers.	I can perform mental calculations, including with mixed operations and large numbers.
Addition and Subtraction: Problem Solving		I can solve one-step problems that involve addition and subtraction using concrete objects and pictorial representations, and missing number problems, such as 7 = ? - 9.	I can 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. I can use the inverse relationship between addition and subtraction to solve missing number problems.	I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	I can solve addition and subtraction two-step problems in context, deciding which operations and methods to use and why.	I can solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.	I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Multiplication and Division: Recall,			I can recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including	I can recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	I can recall multiplication and division facts for multiplication tables up to 12 x 12.	I can identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.	I can identify common factors, common multiples and prime numbers.

Represent and Use			recognizing odd and even numbers. I can show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.		I can 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. I can recognise and use factor pairs and commutativity in mental calculations.	I can know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. I can establish whether a number up to 100 is prime and recall prime numbers up to 19. I can recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Multiplication and Division: Calculations			I can calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.	I can write and calculate mathematical statements for multiplication and division using the multiplication tables that I know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	I can multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	I can multiply numbers up to four digits by a one- or two- digit number using a formal written method, including long multiplication for two-digit numbers. I can multiply and divide numbers mentally drawing upon known facts. I can divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.	I can multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. I can divide numbers up to four 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. I can divide numbers up to four digits by a two-digit number using the formal written

						I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	method of short division where appropriate, interpreting remainders according to the context. I can perform mental calculations, including with mixed operations and large numbers.
Multiplication and Division: Problem Solving		I can 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.	I can solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in context.	I can 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.	I can solve problems involving multiplying and adding, 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.	I can solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. I can solve problems involving addition, subtractions, multiplication and division and a combination of these, including understanding the meaning of the equals sign. I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	I can solve problems involving addition, subtraction, multiplication and division.
Fractions: Recognise and Write				I can count up and down in tenths, recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.	I can count up and down in hundredths, recognise that hundredths arise from dividing an object into 100 equal parts and dividing tenths by 10.	I can identify, name, and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. I can recognise mixed numbers and improper	

		I can recognise, find, and name a half of 1 or 2 equal parts of an object, shape or quantity. I can recognise, find, and name a quarter as 1 of 4 equal parts of an object, shape or quantity.	I can recognise, find, and name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity.	I can recognise, find, and write fractions of a discrete set of objects; unit fraction and non-unit fractions with small denominators. I can recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.		fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.	
Fractions: Compare			I can recognise the equivalence of 2/4 and 1/2.	I can recognise and show, using diagrams, equivalent fractions with small denominators. I can compare and order unit fractions and fractions with the same denominator.	I can recognise and show, using diagrams, families of common equivalent fractions.	I can compare and order fractions whose denominators are all multiples of the same number.	I can use common factors to simplify fractions; use common multiples to express fractions in the same denomination. I can compare and order fractions, including fractions >1.
Fractions: Calculations			I can write simple fractions, for example ½ of 6 = 3.	I can add and subtract fractions with the same denominator within one whole.	I can add and subtract fractions with the same denominator.	I can add and subtract fractions with the same denominator and denominators that are multiples of the same number. I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. I can multiply simple pairs of proper fractions, writing the answer in its simplest form. I can divide proper fractions by whole numbers.

Fractions: Problem Solving				I can solve problems that involve all of the above.	I can 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.		
Decimals: Recognise and Write					I can recognise and write decimal equivalents of any number of tenths or hundredths. I can recognise and write decimal equivalents to ¼, ½, ¾.	I can read and write decimal numbers as fractions. I can recognise and use thousandths and relate them to tenths, hundredths, and decimal equivalents. I can read and write numbers with up to 3 decimal places.	I can identify the value of each digit in numbers given to 3 decimal places.
Decimals: Compare					I can round decimals with 1 decimal place to the nearest whole number. I can compare numbers with the same number of decimal places up to 2 decimal places.	I can round decimals with 2 decimal places to the nearest whole number and to 1 decimal place. I can order and compare numbers with up to 3 decimal places.	
Decimals: Calculations and Problem Solving					I can 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.	I can solve problems involving numbers up to 3 decimal places.	I can multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places. I can multiply one-digit numbers with up to 2

					I can solve measure and money problems involving fractions and decimals to 2 decimal places.		decimal places by whole numbers. I can use written division methods in cases where the answer has up to 2 decimal places. I can solve problems which require answers to be rounded to specified degrees of accuracy.
Fractions, Decimals, and Percentages						I can recognise the percent symbol (%) and understand that percent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction. I can solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fractions with a denominator of a multiple of 10 or 25.	I can associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Ratio and Proportion							I can solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. I can solve problems using the calculation of percentages and the use

							of percentages for comparison. I can solve problems involving similar shapes where the scale factor is known or can be found. I can solve problems using unequal sharing and grouping using knowledge of fractions and multiples.
Algebra							I can use simple formulae. I can generate and describe linear number sequences. I can express missing number problems algebraically. I can find pairs of numbers that satisfy an equation with two unknowns. I can enumerate possibilities of combinations of two variables.
Measurement : Using Measures		I can compare, describe and solve practical problems for: - lengths and heights (for example, long/short, longer/shorter,	I can 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	I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	I can convert between different units of measure.	I can convert between different units of metric measures. I can understand and use approximate equivalences between metric units and common imperial units	I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

		tall/short, double/half) - mass/weight (for example, quicker, slower, earlier, later) - capacity and volume I can measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume	the nearest approximate unit, using rules, scales, thermometers and measuring vessels. I can compare and order length, mass, volume/capacity and record the results using >, < and =.			such as inches, pounds and pints.	I can use, read, write and convert between standard units, converting measurements of length, mass and volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places. I can convert between miles and kilometres.
Measurement : Money		I can recognise and know the value of different denominations of coins and notes.	I can recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. I can find different combinations of coins that equal the same amounts of money. I can solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	I can add and subtract amounts of money to give change, using both £ and p in practical contexts.	I can estimate, compare and calculate different measures, including money in pounds and pence.	I can use all four operations to solve problems involving measures using decimal notation including scaling, (for example, money).	
Measurement : Time		I can compare, describe and solve	I can compare and sequence intervals of time.	I can tell and write the time from an analogue clock, including using	I can read, write and convert time between	I can solve problems involving converting between units of time.	I can use, read, write and convert between standard units, converting

		practical problems for time. I can measure and begin to record time (hours, minutes and seconds). I can sequence events in chronological order using language. I can recognise and use language relating to dates, including days of the week, weeks, months and years. I can tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	I can 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. I can know the number of minutes in an hour and the number of hours in a day.	Roman numerals from I to XII, and 12-hour and 24-hour clocks. I can estimate and read time with increasing accuracy to the nearest minute, record and compare time in terms of seconds, minutes and hours. I can use language such as o'clock, am/pm, morning, afternoon, noon and midnight. I can know the number of seconds in a minute. I can know the number of days in a month, year, and leap year. I can compare durations of events.	analogue and digital 12 and 24-hour clocks. I can solve problems involving converting from hours to minutes to seconds, years to months, weeks to days.		measurements of time from a smaller unit of measure to a larger unit, and vice versa.
Measurement : Perimeter, Area, Volume				I can measure the perimeter of simple 2-D shapes.	I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. I can find the area of rectilinear shapes by counting squares.	I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. I can calculate and compare the areas of rectangles (including squares) using standard units, square centimetres (cm^2) and square metres (m^2).	I can recognise that shapes with the same areas can have different perimeters and vice versa. I can recognise when it is possible to use formulae for area and volume of shapes. I can calculate the area of parallelograms and triangles.

						I can estimate the area of irregular shapes.	I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3) and extending to other units.
Geometry: 2-D Shapes		I can recognise and name common 2-D shapes (for example, rectangles including squares, circles and triangles)	I can identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. I can identify 2-D shapes on the surface of 3-D shapes. I can compare and sort common 2-D shapes and everyday objects.	I can draw 2-D shapes.	I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. I can identify lines of symmetry in 2-D shapes presented in different orientations.	I can use the properties of rectangles to deduce related facts and find missing lengths and angles. I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	I can draw 2-D shapes using given dimensions and angles. I can compare and classify geometric shapes based on their properties and sizes. I can find unknown angles in any triangles, quadrilaterals and regular polygons. I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Geometry: 3-D Shapes		I can recognise and name common 3-D shapes for example, cuboids including cubes, pyramids and spheres).	I can identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. I can compare and sort common 3-D shapes and everyday objects.	I can make 3-D shapes using modelling materials. I can recognise 3-D shapes in different orientations and describe them.		I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	I can recognise, describe and build simple 3-D shapes, including making nets.

Geometry: Angles and Lines				I can recognise angles as a property of shape or in description of a turn. I can identify right angles. I can recognise that 2 right angles make a half-turn, 3e make three-quarters of a turn and 4 a complete turn. I can identify whether angles are greater than or less than a right angle.	I can identify acute and obtuse angles and compare and order angles up to 2 right angles by size. I can identify lines of symmetry in 2-D shapes presented in different orientations. I can complete a simple symmetric figure with respect to a specific line of symmetry.	I can see that angles are measured in degrees. I can estimate and compare acute, obtuse and reflex angles. I can draw given angles. I can measure given angles in degrees (°). I can identify: - angles at a point and 1 whole turn (total 360°) - angles at a point on a straight line and half a turn (180°) - other multiples of 90°.	I can recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles.
Geometry: Position and Direction		I can describe position, directions and movements, including whole, half, quarter and three-quarter turns.	I can order and arrange combinations of mathematical objects in patterns and sequences. I can 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 (clockwise and anti-clockwise).	I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	I can describe positions on a 2-D grid as coordinates in the first quadrant. I can describe movements between positions as translations of a given unit to the left/right and up/down. I can plot specified points and draw sides to complete a given polygon.	I can 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.	I can describe positions on the full coordinate grid (all 4 quadrants). I can draw and translate simple shapes on the co-ordinate plane and reflect them in the axes.

Statistics: Present and Interpret			I can interpret and construct simple pictograms, tally charts, block diagrams and tables.	I can interpret and present data using bar charts, pictograms and tables.	I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	I can complete, read and interpret information in tables, including timetables.	I can interpret and construct pie charts and line graphs and use these to solve problems.
Statistics: Problem Solving			I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. I can ask and answer questions about totalling and comparing categorical data.	I can solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.	I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	I can solve comparison, sum and difference problems using information presented in a line graph.	I can calculate and interpret the mean as an average.