

Maths Progression and Assessment Framework – Maths Number

Step	Knowledge	Using and Applying	Number	Calculations
5	- Indicate one or two. - Understand language: lots, more, same.	- I can solve simple problems. - I can respond to and join in with familiar number rhymes, stories, songs and games.	- I can show an awareness of number activities and counting. - I can identify sets that have the same small number of objects in each. - I can distinguish between more and lots.	- I can show awareness of changes in quantity. - I can demonstrate an awareness of contrasting quantities.
6	- Rote counting to 5. - Count objects/actions/sounds to 3. - Make sets up to 3 objects and use numbers to 3 in familiar games and activities.	I can demonstrate an understanding of one-to-one correspondence in a range of contexts.	I can join in rote counting up to five and count reliably to 3.	I can demonstrate an understanding of the concept of 'more'.
7	- Rote counting to 10. - Count objects/actions/sounds to 5. - Fast recognition of up to 3 objects (subitising). - Recognise numerals to 5. - Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle).	I can respond appropriately to key vocabulary and questions to solve real world problems with numbers to 5.	- I can join in rote counting to 10 and can count at least 5 objects/pictures/sounds reliably. - I can recognise numerals from one to five and to understand that each represents a constant number or amount.	- I can demonstrate an understanding of 'less'. - I can respond to 'add one' to a number of objects in practical situations.
8	- Rote counting beyond 10. - Count objects/actions/sounds to 10. - Subitise to 5. - Understand one more/less. - Understand language 'add one' and 'take one away'.	- I can talk about, recognise and copy simple repeating sequences. - I can use developing mathematical understanding of counting up to ten to solve simple problems (e.g. add one/take one away) encountered in play, games or other work.	- I can recite numbers in order to beyond 10 and I can continue to rote count from a given small number. - I can recognise differences in quantity.	I can use real-life materials to add and subtract 1 from a group of objects and indicate how many are now present.
9	- Automatically recall number bonds to 5. - Estimate to 10 and check by counting. - Compare quantities up to 10 – recognising greater, less, same.	- I can make simple estimates (and check by counting). - I can solve problems involving addition and subtraction of numbers to 10.	- I can recognise numerals from one to nine and relate them to sets recognising differences in quantity. - I can recite numbers in order to 20. - I can recognise differences in quantity to 10.	- I can recall number bonds to 5. - I can add and subtract using numbers 0-5.
10	- Recall number bonds 0-10. - Verbally count beyond 20. - Odd and even. - Double facts to 10.	- I can solve problems involving addition and subtraction of numbers beyond 10. - I can solve problems involving doubling numbers within 10.	- I can recite numbers in order beyond 20. - I can identify odd and even numbers.	- I can recall number bonds to 10. - I can add and subtract using numbers 0-10.

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11	- Numbers to 20. - Know number bonds and related subtraction facts within 20. - find one more/less. - find 10 more.	- I can use the language of; equal to, more than, less than (fewer), most, least. - I can solve one step problems and missing number problems such as $7 = ? - 9$. - I can recognise, find and name a half as 1 of 2 equal parts of a quantity.	- I can recognise numerals to 20 and relate them to sets recognising differences in quantity. - I can identify one more/less than a given number and 10 more than a number. - I can count in multiples of 2, 5, 10.	- I can record mathematical statements involving addition (+), subtraction (-) and equals (=) signs. - I can add and subtract one digit and two digit numbers to 20.
12	- Numbers to 100. - Know addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot. - Multiplication and division facts for the 2,5,10 multiplication tables including recognising odd and even numbers. - Know that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. - Understand the language of 'sum'.	- I can use place value and number facts (such as partition) to solve problems. - I can use the inverse relationship between addition and subtraction and use this to check calculations. - I can solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts including problems in contexts.	- I can count in steps 2,3,5 from 0 and 10s forwards and backwards from any number. - I can use my knowledge of place value to partition numbers in different ways. - I can recognise, find and name fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a quantity.	- I can add and subtract numbers using concrete objects, pictorial representations, mentally including: - Two-digit number and ones - Two-digit number and tens - Two two-digit numbers - Adding three one digit numbers - I can record mathematical statements using the multiplication (x), division ($\div$) and equals (=) signs. - I can record simple fractions for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.
13	- Numbers to 1000. - Recall and use multiplication and division facts for the 3,4 and 8 multiplication tables.	- I can solve problems including missing numbers, using number facts, place value and more complex addition and subtraction. - I can estimate the answer and use the inverse operations to check answers. - 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 that involve unit fractions and non-unit fractions with small denominators.	- I can count in multiples of 4,8,50,100. - I can find 10, 100 more/less than a given number. - I can count up and down in tenths and recognise that tenths arise from dividing objects into 10 equal parts. - I can order fractions with the same denominator.	- I can add and subtract numbers mentally including: - Three-digit number and ones - Three-digit number and tens - Three-digit numbers and hundreds - I can calculate mathematical statements for multiplication and division using the multiplication and division tables that they know, including for two-digit numbers times one digit numbers. - I can add and subtract fractions with the same denominators within one whole.
14	Numbers beyond 1000.	I can solve addition and subtraction two-step problems in contexts,	I can count backwards through zero to include negative numbers.	I can add and subtract numbers with up to 4 digits.

	- Read Roman numerals to 100 (I to C) - Recall multiplication and division facts for multiplication tables up to 12 x 12. - Recognise the effect of dividing a one or two-digit number by 10 and 100, identifying the value of the digits as ones, tenths and hundredths. - Recognise families of common equivalent fractions.	deciding which operations and methods to use and why. - I can estimate and use inverse operations to check answers to a calculation. - I can 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. - I can solve problems to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number.	- I can count in multiples of 6, 7, 9, 25 and 1000. - I can round numbers to the nearest 10, 100, 1000. - I can round decimals with one decimal place to the nearest whole number. - I can count up and down in hundredths and recognise that hundredths arise when dividing objects by 100 and tenths by 10. - I can compare numbers with the same number of decimal places up to two decimal places. - I can recognise and record decimal equivalents of any number of tenths or hundredths and $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.	- I can multiply two-digit and three-digit numbers by a one-digit number. - I can add and subtract fractions with the same denominator.
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Step	Knowledge	Using and Applying	Number	Calculations
15	- Use numbers to 1,000,000. - Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. - Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. - Recognise square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3}). - Recognise mixed numbers and improper fractions and convert from one form to the other e.g. $2\frac{2}{5} + 4\frac{4}{5} = 6\frac{6}{5} = 11\frac{1}{5}$.	- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. - I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. - I can solve problems involving: - Multiplication and division including using their knowledge of factors and multiples, squares and cubes. - Addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. - Multiplication and division, including scaling by simple fractions and problems involving simple rates. - I can solve problems involving numbers up to three decimal places. - I can 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 fractions with a denominator of a multiple of 10 or 25.	- I can count forwards and backwards with positive and negative whole numbers. - I can round numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,000, 100,000. - I can round decimals with two decimal places to the nearest whole number and to one decimal place. - I can recognise if a number up to 100 is prime and recall prime numbers to 19. - I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. - I can compare and order fractions whose denominators are all multiples of the same numbers. - I can compare numbers with the same number of decimal places up to three decimal places. - I can recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred' and record percentages as a fraction with	- I can add and subtract whole numbers with more than 4 digits. - I can multiply numbers up to 4 digits by a one or two-digit number including long multiplication for two-digit numbers. - I can divide numbers up to 4 digits by one-digit number using short division and interpret remainders appropriately for the context. - I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. - 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.

			denominator 100 and as a decimal.	
16	- Numbers to 10,000,000. - Identify common factors, common multiples and prime numbers. - Use common factors to simplify fractions. - Use common multiples to express fractions in the same denomination.	- I can use negative numbers in context. - I can perform mental calculations including with mixed operations and large numbers. - I can divide numbers up to 4 digits by a two-digit whole numbers and interpret remainders, fractions, or by rounding, as appropriate for the context. - I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. - I can solve problems which require answers to be rounded to specified degrees of accuracy. - I can recall and use equivalences between simple fractions, decimals and percentage, including in different contexts. - 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 involving unequal sharing and grouping using knowledge of fractions and multiples. - I can express missing number problems algebraically. - I can find pairs of numbers that satisfy an equation of two unknowns. - I can enumerate possibilities of combination of two variables.	- I can round any whole number to a required degree of accuracy. - I can compare and order fractions, including fractions >1. - I can identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. - I can demonstrate and describe linear number sequences.	- I can multiply multi-digit numbers by a two-digit whole number. - I can use my knowledge of operations to carry out calculations involving the four operations. - 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, recording the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$. - I can divide proper fractions by whole numbers e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$. - I can multiply one-digit numbers with up to two decimal places by whole numbers. - I can use simple formulae.

Maths Progression and Assessment framework – Maths Topic

Step	Intent The pupils taught to:	Impact The pupils can:						
	Knowledge	Using and Applying	Time	Money	Measures (length/ mass/ capacity/ money)	Shape and Space	Position and Movement	Statistics Statistics/ Probability
5	- Object permanence. - Gain awareness of their body and where their body parts are in relation to each other. - Understand language big, small.	- I can show awareness of change in shape, or position. - I can sort or match objects or pictures by recognising similarities.	I can anticipate, follow & join in familiar activities.	Understand the concept of transaction.	- I can compare the overall size of one object with that of another where there is a marked difference. - I can match big objects & small objects. - I can find big & small objects on request.	- I can search for objects that have gone out of sight, hearing or touch. - I can search intentionally for objects in their usual place. - I can join in and anticipate what comes next in simple patterns.	- I can demonstrate interest in position and the relationship between objects. - I can explore the position of objects.	
6	- Recognise differences in size and shape. - Understands language eg under, on, in, with visual cues.	I can sort or match objects or pictures according to given criteria (e.g. small balls/ shapes into triangles and circles).	I can predict what comes next using the pattern of everyday routines.	I can join in activities related to money eg 5 current buns/ shop role play.	I can compare the overall size of one object with that of another where the difference is not great.	- I can select a shape for a specific space. - I can copy & continue simple patterns using real life materials/ pictures/ sounds (eg apple, orange, apple, orange).	- I can search for objects not found in their usual place. - I can show understanding of words, signs and symbols that describe positions.	
7	- Identify differences in shape and size. - Match pictures/ objects based on similarities they notice. - Understand position through words alone eg the bag is under the table – with no pointing. - Use language such as in front of, behind.	- I can complete a range of classification activities using a given criterion. - I can identify when an object is different and does not belong to a given familiar category.	I can begin to describe a sequence of events using words such as first, then.	I can sort coins by matching colour and shape.	I can use familiar words in practical situations to compare sizes and quantities (e.g. full/ empty, long/short,).	- I can pick out described shapes from a collection. - I can select shapes appropriately eg triangular prism for roof. - I can extend & create ABAB patterns eg stick, leaf, stick, leaf. - Notice and correct an error in a repeating pattern.	- I can understand and use positional words such as under, behind, in front of. - I can respond to 'forwards' and 'backwards'. - I can describe a familiar route.	
8	- Continue and create repeating patterns. - Language to describe shape – straight, circle, round, larger, pointy.	I can talk about, recognise and copy simple repeating patterns.	I can show awareness of time, through some familiarity with names of the days of	I can sort coins and notes by matching colour and shape.	I can compare objects directly, focusing on one dimension such as length or height where the	I can respond to mathematical vocab such as 'straight', 'circle', 'larger' to describe the shape and size of solids and flat shapes.	I can understand spatial language and follow directions and instructions.	

			the week and significant times in their day, such as meal times, bed times.		difference is marked and can indicate 'the long one' or 'the tall one'.	I can describe shapes in simple models, pictures and patterns.		
9	- Make direct comparisons between two objects. - Understand and use everyday mathematical language through practical activities.	I can predict what will happen when solving problems involving comparing weight/length or capacity.	I can recall a sequence of events in everyday life and stories.	I can use pennies to make a given total in role play activities.	I can compare two items and identify which is heavier/longer.	- I can use mathematical vocab such as 'straight', 'circle', 'larger' to describe the shape and size of solids and flat shapes. - I can copy and continue more advanced patterns using real life materials/ pictures (e.g. apple, apple, pear, apple, apple, pear).	- I can use positional language to describe where objects are in a room (forwards, backwards, turn left, right). - I can describe objects from different viewpoints.	

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10	- Recall what shapes can make other shapes. - Become familiar with measuring tools in everyday experiences and play. - Order 3+ objects by weight, length, capacity.	I can predict and give reasons in activities.	I can order and sequence events using everyday language related to time.	I can recognise and order the value of coins.	I can compare and order three or more items by weight, length, capacity.	- Talk about 2D and 3D shapes (for example circles, rectangles, triangles and cuboids, sides, corners, straight, flat, round). - I can identify and explain errors in repeating patterns.	- I can use ordinal numbers (first, second, third) when describing the position of objects, people or events. - I can use spatial language to give directions and instructions to others.	
11	understand and use language related to time (quicker, slower, earlier, later, hours,	- I can recognise, find and name a half as 1 of 2 equal parts of an object or shape - I can compare, describe and solve practical problems	- I can use everyday language related to time - I can sequence	I can recognise and order the value of different coins and notes	I can understand and use vocabulary related to lengths and height	I can recognise and name 2D shapes (e.g. rectangles, squares, circles and triangles)	I can describe position, direction and movement including whole, half, quarter and	

	minutes, seconds, before, after, next, first, today, yesterday, tomorrow, morning, afternoon, evening, days of the week, weeks, months, years)	for lengths and height - I can compare, describe and solve practical problems for mass/weight - I can compare, describe and solve practical problems for capacity and volume - I can compare, describe and solve practical problems for time	events in chronological order I can tell the time to o'clock and half past		including long/short, longer/shorter, tall/short, double/half - I can understand and use vocabulary related to mass/weight including heavy/light, heavier than/lighter than - I can understand and use vocabulary related to capacity including full/empty, more than/less than, half, half full, empty	I can recognise and name common 3D shapes (e.g. cuboids, cubes, pyramids, spheres)	three-quarter turns	
12	Know the number of minutes in an hour and number of hours in a day	- I can recognise, find and name fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, or shape - I can compare and order length/mass/capacity and record results using $>$, $<$, $=$ - I can solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	I can tell the time to 5 minutes including quarter past and quarter to the hour	- I can recognise and use symbols for pounds (£) and pence (p) - I can combine amounts to make a particular value - I can find different combinations of coins that equal the same amounts of money	- I can choose appropriate standard units to measure length/height (m/cm) - I can choose appropriate standard units to measure mass (kg/g) - I can choose appropriate standard units to measure capacity (litres/ml) - I can choose and use appropriate standard units to estimate and measure temperature ($^{\circ}\text{C}$) to the nearest appropriate unit	- I can identify and describe the properties of 2D shapes including the number of sides - I can identify and describe the properties of 3D shapes including the number of edges, vertices and faces - I can identify 2D shapes on the surface of 3D shapes - I can compare and sort common 2D and 3D shapes and everyday objects - I can identify and describe the properties of 2D shapes	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 anticlockwise)	- I can interpret simple pictograms, tally charts, block diagrams and simple tables - I can ask and answer questions by counting the number of objects in each category and sorting the category by quantity

						including the line of symmetry in a vertical line I can order and arrange combinations of mathematical objects in patterns and sequences		
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Step	Knowledge	Using and Applying	Time	Money	Measures (length/ mass/ capacity/ money)	Shape and Space	Position and Movement	Statistics Statistics/Probability
13	a) Read the time to the nearest minute b) Use vocab such as o'clock, a.m., p.m., morning, afternoon, noon and midnight when telling the time c) Know the number of seconds in a minute, days in each month, year and leap year d) Recognise angles as a property of shape or a description of a turn	- I can solve problems involving comparing time in terms of seconds, minutes, hours and calculate duration of events - I can solve one-step and two-step problems (e.g. how many more/fewer?) using information presented in scaled bar charts, pictograms and tables	I can tell the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour	I can add and subtract amounts of money to give change, using both £ and p in practical contexts	- I can measure, compare, add and subtract length - I can measure, compare, add and subtract mass - I can measure, compare, add and subtract capacity	- I can calculate the perimeter of simple 2D shapes - I can recognise 2D and 3D shapes in different orientations and describe them - I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines	- I can identify right angles (how many in half turn/ $\frac{3}{4}$ turn/ complete turn) - I can identify whether angles are greater than or less than a right angle	I can interpret data using bar charts, pictograms and tables
14	a) Plot specified points to complete a given polygon	- I can solve simple measure and money problems involving fractions and decimals to two decimal places - I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days - I can solve comparison, sum and difference problems using information	- I can convert time between analogue and digital 12- and 24- hour clocks - I can convert between different units of measure (e.g. hour to minute)	I can estimate, compare and calculate different measures, including money in pounds and pence	I can convert between different units of measure, for example km to m	- I can find the area of rectilinear shapes (by counting squares) - I can calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes - I can identify lines of symmetry in 2D shapes presented	- I can identify acute and obtuse angles and compare and order angles up to two right angles by size - I can describe positions on a 2D grid as coordinates in the first quadrant - I can describe movements between positions as	I can interpret discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

		presented in bar charts, pictograms, tables and other graphs				in different orientations	translations of a given unit to the left/right and up/down	
15	a) know angles on a point/whole turn is 360° and angles on a line is 180°	- I can use all four operations to solve problems involving measure (e.g. length, mass and volume) using decimal notation, including scaling - I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles - I can solve comparison sum and difference problems using information presented in a line graph	I can solve problems involving converting between units of time	I can use all four operations to solve problems involving measure (e.g. money) using decimal notation	- I can convert between different units of metric measure (e.g. km & metre, cm & metre, cm & mm, g & kg) - I can use approximate equivalences between metric units & common imperial units such as inches, pounds, pints	- I can calculate the perimeter of composite rectilinear shapes in cms and metres - I can calculate and compare the area of rectangles (including squares) using standard units e.g. cm^2, m^2 and estimate the area of irregular shapes - I can estimate volume (e.g. 1 cm^3 blocks for cuboids) & capacity (water) - I can identify 3D shapes, including cubes and other cuboids, from 2D representations - I can use the properties of rectangles to deduce related facts and find missing lengths and angles	- I know angles are measured in degrees and can estimate and compare acute, obtuse and reflex angles - 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 complete, read and interpret information in tables, including timetables

Step	Knowledge	Using and Applying	Time	Money	Measures (length/ mass/ capacity/ money)	Shape and Space	Position and Movement	Statistics Statistics/Probability
16	a) Know that shapes with the same areas can have different perimeters and vice versa	I can solve problems involving the calculation of percentages (for example of measures and such as 15% of 360 and the use of percentages for comparison	I can use, read, record and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit & vice versa, using decimal	I can use all four operations to solve problems involving money, including using decimal notation and calculating	I can convert between miles and kilometres	- 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 calculate, estimate and compare volume of cubes and	I can recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles	- I can interpret pie charts and line graphs - I can calculate and interpret the mean as an average

		- I can solve problems involving similar shapes where the scale factor is known or can be found - I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate - I can solve problems by interpreting pie charts and line graphs	notation up to three decimal places	percentage increase and decrease		cuboids using standard units including cubic centimetres (cm^3), m^3 and extending to other units e.g. mm^3, km^3 - I can recognise nets of simple 3D shapes - I can compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons - I can name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	- I can describe positions on the full coordinate grid (all four quadrants) - I can translate simple shapes on the coordinate plane and reflect them in the axes	
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