**Maths Progression of Knowledge and Skills**

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|  | **Year 1** | **Year 2** |
|  | **KS1** |
| **Number and Place Value** | * I can count in ones to or back from 100 from any given number
* I can count, read and write numbers to 100 in numerals
* I can count in 2s, 5s, and 10s
* I can say one more or one less than any number up to 100
* I can write 1-20 in words and numerals
* I can identify and represent numbers using objects and pictorial representations
 | * I can count in steps of 2, 3, 5 and 10 from any number forwards and backwards
* I can compare numbers from 0 up to 100 and use the < > signs correctly
* I can read and write numbers from 0 to 100 in numerals and words
* I know which digit is the tens and ones in a two digit number and partition a 2 digit number correctly into different combination
* I can identify and estimate numbers using different representations, including a number line
* I can use place value and number facts to solve problems (e.g. which two multiples of 10 make 100)
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| **Addition and Subtraction** | * I know my number bonds for any number up to 20 and the related subtraction fact
* I can add and subtract one-digit and two digit numbers to 20, including zero
* I can solve one step problems for addition using pictures and objects to help me
* I can solve one step subtraction problems for subtraction using pictures and objects to help me
* I know what these signs mean +, - and = and can use them correctly
 | * I can recall and use addition and subtraction facts to 20
* I can add and subtract two digit numbers to a one digit number using objects and pictures to help me
* I can add and subtract numbers mentally
* I can add and subtract numbers using concrete objects and pictorial representations
* I can use the inverse of subtraction is addition and can do this to check my answers or solve missing number problems
* I can solve problems with addition and subtraction
* I know that addition and multiplication can be done in any order
* I can use estimation to check my answers are reasonable
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| **Multiplication and Division** | * I can solve problems involving multiplication and division, by calculating the answer using objects, pictures and arrays to help me
 | * I know the multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
* I can use the x, ÷ and = sign to solve multiplication and division calculations
* I can solve problems involving multiplication and division, using arrays, repeated addition, mental methods, and multiplication and division facts
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| **Fractions** | * I can find and name a quarter of an object, shape or amount
* I can find and name a half of an object, shape or amount
 | * I can find, name and write fractions one third, one quarter, two quarters and three quarters
* I can find a quarter, a half, two quarters and a third of a length, shapes, set of objects or quantity
* I know that 2/4 is the same as a ½
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| **Measurement** | * I can compare, describe and solve practical problems for length, weight, capacity and time
* I can measure and begin to record lengths, heights, weight, capacity
* I know the value of all coins up to £1 and notes up £50
* I know the days of the week and months of the year in order
* I can tell the time to half an hour and hour
* I can order events in time order (chronological order)
 | * I can choose and use a ruler to measure height and length in mm and cm
* I can use kilograms and grams to measure weight and litres and millilitres to measure capacity
* I can read scales in divisions of 1s, 2s, 5s and 10
* I can use °C to measure temperature, using thermometers
* I can compare and order lengths, mass, volume/capacity and record the results using >, < and = signs
* I can recognise and use symbols for pounds (£) and pence (p); combine amounts to make an amount
* I can find different combinations of coins that equal the same amounts of money
* I can tell and write the time to the nearest fifteen minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
* I know the number of minutes in an hour and the number of hours in a day
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| **Geometry** | * I can recognise 2D shapes, rectangle, square, circle, triangle
* I can recognise 3D shapes cube, cuboid, pyramid, cone and sphere
* I can move and describe a whole, half and quarter turn
 | * I can compare and sort 2D and 3D shapes
* I can name and describe the properties of 2-D shapes, including the number of sides and line of symmetry
* I can name and describe the properties of 3-D shapes, including the number of edges, vertices and faces
* I can order and arrange combinations of mathematical objects in patterns and sequences
* I can use mathematical words to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn
* I can turn right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
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| **Statistics** |  | * I can collect and present data in simple pictograms, tally charts, block graphs and tables
* I can ask and answer simple questions that are presented
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|  | **Year 3** | **Year 4** |
|  | **LKS2** |
| **Number and Place Value** | * I can count in multiples of 4, 8, 50 and 100
* I can order numbers up to 1000
* I can write numbers up to 1000 in words and numerals
* I can find 10 or 100 more or less than a given number
* I can solve missing number patterns problems
* I can identify, represent and estimate numbers using different representations
* I can partition a three digit number
 | * I can count in multiples of 6, 7, 9
* I can count in steps of 25 and 1000 from any number
* I can order and compare numbers beyond 1000
* I can find 1000 more or less than a given number
* I can count backwards through zero to include negative numbers
* I can partition a four digit number
* I can read Roman numerals to 100
* I can round any number to the nearest 10, 100 or 1000
* I can solve missing number problems using my knowledge of ordering numbers, more or less than and counting in multiples
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| **Addition and Subtraction** | * I can add a one digit number to a three digit number mentally
* I can add a tens number to a three digit number mentally
* I can add a multiple of 100 to a three digit number mentally
* I can use a written method of addition and subtraction to add and subtract numbers including 3 digit numbers
* I can use the inverse to a calculation to check my answer is correct
* I can use my knowledge of number facts to solve problems including missing number problems
 | * I can use column addition to solve a sum including four digit numbers
* I can use the column (decomposition) written method to solve subtraction with numbers up to 4 digit
* I can estimate and use inverse operations to check answers to a calculation
* I can solve two step word problems deciding which operations to use and why
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| **Multiplication and Division** | * I know and use multiplication and division facts for the 3, 4 and 8 multiplication tables
* I can write and calculate number sentences for multiplication and division using the multiplication tables that I know
* I can multiply and divide by two-digit numbers and one-digit numbers, using mental and written methods to help me
* I can solve problems, including missing number problems, involving multiplication and division
 | * I can recall multiplication and division facts for multiplication tables up to 12 × 12
* I can use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1
* I can multiplying together three numbers
* I can recognise and use factor pairs in mental calculations
* I can multiply two-digit and three-digit numbers by a one-digit number using a written method
* I can solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit
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| **Fractions** | * I can count up and down in tenths and know that tenths come from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
* I can find and write fractions of a set of objects: unit fractions and non-unit fractions with small denominators
* I can recognise and show, using diagrams, equivalent fractions with small denominators
* I can recognise and show, using diagrams, equivalent fractions with small denominators
* I can add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7)
* I can compare and order unit fractions and fractions with the same denominator
* I can solve fraction based problems
 | * I can recognise and show, using diagrams, families of common equivalent fractions
* I can count up and down in hundredths
* I know that hundredths arise when dividing an object by one hundred and dividing tenths by ten
* I can solve problems involving increasingly harder fractions to calculate quantities
* I can use fractions to divide quantities, including non-unit fractions where the answer is a whole number
* I can add and subtract fractions with the same denominator
* I can recognise and write decimal equivalents of any number of tenths or hundredths
* I can write decimal equivalents to ¼, ½ , ¾
* I know what happens when I divide 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 round decimals with one decimal place to the nearest whole number
* I can compare numbers with the same number of decimal places up to two decimal places
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| **Measure** | * I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
* I can measure length, mass and volume/capacity
* I know how to measure the perimeter of a 2D shape
* I can add and subtract amounts of money to give change, using both £ and p in practical contexts
* I can tell and write the time from an analogue clock, 12-hour and 24-hour clocks
* I can tell and write the time from an analogue clock, including using Roman numerals
* I can estimate and read time with accuracy to the nearest minute
* I can record and compare time in terms of seconds, minutes and hours
* I can compare durations of events
* I can use words such as o’clock, a.m./p.m., morning, afternoon, noon and midnight correctly
* I know the number of seconds in a minute and the number of days in each month, year and leap year
* I can add and subtract length, mass and volume/capacity
 | * I can convert kilometres to metres and hours to minutes
* 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 estimate different measures, including money in pounds and pence
* I can read, write and convert time between analogue and digital 12hour and 24 hour clock
* I can estimate, compare and calculate different measures, including money in pounds and pence
* I can calculate different measures, including money in pounds and pence
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| **Geometry** | * I can draw 2-D shapes and make 3-D shapes using modelling materials
* I can recognise 3-D shapes in different orientations and describe them
* I can name the right angles in 2D shapes
* I know that two right angles make a half-turn, three make three quarters of a turn and four a complete turn
* I can say which are horizontal and vertical lines and pairs of perpendicular and parallel lines
 | * I can compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes
* I can find acute and obtuse angles
* I can compare and order angles up to two right angles by size
* I can find 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 describe movements between positions as a translation
* I can describe a position as a coordinate
* I can plot specified points and draw sides to complete a given polygon
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| **Statistics** | * I can interpret and present data using bar charts, pictograms and tables
* I can solve one and two step questions using information presented in charts, pictograms and tables
 | * I can interpret and present data using charts and graphs
* I can solve problems using information presented in different graphical ways
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|  | **Year 5** | **Year 6** |
|  | **UKS2** |
| **Number and Place Value** | * I can read and write numbers to at least 1000000
* I can order numbers up to at least 1000000
* I know the value of each digit of numbers up to 1000000
* I can count in steps of powers of 10 for any given number up to 1000000
* I can understand negative numbers in context and count forwards and backwards with positive and negative whole numbers. Including through zero
* I can round any number to 10, 100, 1000, 10000 or 100000
* I can solve missing number problems involving ordering, partitioning and negative numbers
* I can read Roman numerals to 1000 and recognise years written in Roman numerals
 | * I can round any whole number
* I can read and write numbers up to 10 000 000 and determine the value of each digit
* I can order and compare numbers up to 10 000 000
* I can use negative numbers in context, and calculate intervals across zero
* I can solve number and practical problems that involve ordering numbers, missing number problems and negative numbers
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| **Addition and Subtraction** | * I can add whole 4 digit and 5 digit numbers using a written method
* I can subtract whole 4 digit and 5 digit numbers using a written method
* I can add and subtract mentally using larger numbers
* I can use rounding to check answers are reasonable
* I can solve multi-step word problems in context, deciding on the operation to use and why
 | * I can add and subtract multi-digit numbers up to 4 digits by a two-digit whole number using the formal written methods
* I can multiply and divide multi-digit numbers up to 4 digits by a two digit whole number using the formal written methods of long multiplication and division
* I can interpret remainders as whole numbers, decimal, or by rounding within a context
* I can complete mental calculations, with mixed operations and large numbers
* I know common factors, common multiples and prime numbers
* I can use my knowledge of the order of operations to carry out calculations involving the four operations
* I can use formal methods to solve multistep word problems, choosing the correct operations to use and why
* I can use estimation to check answers to calculations
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| **Multiplication and Division** | * I can identify multiples and factors, including finding all factor pairs of number and common factors of two numbers
* I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
* I know whether a number up to 100 is prime and recall prime numbers up to 19
* I can multiply numbers up to 4 digits by a one- or two-digit number using a written method, including long multiplication for two-digit numbers
* I can multiply and divide numbers mentally using the facts that I already know
* I can divide numbers up to 4 digits by a one-digit number using a written method of short division
* I can understand remainders depending on the context I am given
* I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
* I can recognise and use square numbers and cube numbers, and use the sign for squared (2) and cubed (3) numbers
* I can solve problems multi-step problems involving addition, subtraction, multiplication and division
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| **Fractions, Decimals and Percentages** | * I can solve problems involving multiplication and division, including scaling by simple fractions
* I can compare and order fractions whose denominators are all multiples of the same number
* I can name and write equivalent fractions of a given fraction, including tenths and hundredths
* I can recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5]
* 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, with materials and diagrams to help me
* I can read and write decimal numbers as fractions [for example, 0.71 = 71/100]
* I can use thousandths and relate them to tenths, hundredths and decimal equivalents
* I can round decimals with two decimal places to the nearest whole number and to one decimal place
* I can read, write, order and compare numbers with up to three decimal places
* I can solve problems involving number up to three decimal places
* I know what this symbol means %
* I know that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal
* I can solve problems which require knowing percentage and decimal equivalents of ½ ,1/4 ,1/5 , 2/5 ,4/5 and those fractions with a denominator of a multiple of 10 or 25
 | * 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 greater than 1
* 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 [for example, 1/3 ÷ 2 = 1/6 ]
* I can associate a fraction with division and calculate decimal fraction equivalent for a simple fraction
* I can identify the value of each digit in numbers given to three decimal places
* I can multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
* I can multiply one-digit numbers with up to two decimal places by whole numbers
* I can use a written method of division in cases where the answer has up to two decimal places
* I can recall and use equivalences between simple fractions, decimals and percentages
* I can solve problems which require answers to be rounded to specified degrees of accuracy
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| **Measure** | * I can convert between different units of measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
* I know how to use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
* I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* I can calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2)
* I can estimate the area of irregular shapes
* I can estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
* I can solve problems involving converting between units of time
* I can use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
 | * I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places
* I can 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
* I can convert between miles and kilometres
* 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 calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and extending into other units (mm3) (m3)
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| **Geometry** | * I can name 3-D shapes, including cubes and other cuboids, from 2-D representations
* I know angles are measured in degrees
* I can estimate and compare acute, obtuse and reflex angles
* I can draw given angles, and measure them in degrees
* I can identify angles at a point and one whole turn (total 360°) and angles at a point on a straight line and ½ turn (180°)
* 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
* I can describe and represent the position of a shape following a reflection or translation
 | * I can draw 2-D shapes using given dimensions and angles
* I can describe simple 3D shapes
* I can recognise, describe and build simple 3-D shapes, including making nets
* I can compare and classify geometric shapes based on their properties
* I can compare and classify geometric shapes based on their sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
* I can draw and name parts of circles, including radius, diameter and circumference
* I know that the diameter is twice the radius
* 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 use mathematical reasoning to find missing angles
* I can describe positions on a full coordinates grid
* I can draw and translate simple 2D shapes on the coordinate plane, and reflect them in the axes
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| **Statistics** | * I can read and interpret information in tables
* I can solve comparison, sum and difference problems using information presented in a line graph
 | * I can interpret and construct pie charts and line graphs and use these to solve problems
* I can calculate and interpret the mean
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| **Ratio and Proportion** |  | * I can solve problems involving the relative sizes of two quantities where missing values can be found by using the multiplication and division facts I know
* I can solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360]
* I can solve problems involving similar shapes where the scale factor is known or can be found
* I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
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| **Algebra** | * I can express missing number problems algebraically
* I can use simple formulae
* I can generate and describe linear number sequences
* I can find pairs of numbers that satisfy an equation with two unknowns
* I can enumerate possibilities of combinations of two variables
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