



Roots to Grow and
Wings to Fly

MATHS - Curriculum Overview

YEAR 1

Number: Number and Place Value

I can count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.

I can count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.

Given a number, I can identify one more and one less.

I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.

I can read and write numbers from 1 to 20 in numerals and words.

Number: Addition and Subtraction

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 add and subtract one-digit and two-digit numbers to 20, including zero.

I can solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = -9$.

Number: Multiplication and Division

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.

Number: Fractions

I can recognise, find and name a half as one of two equal parts of an object, shape or quantity.

I can recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Measurement

I can compare, describe and solve practical problems for:

lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]

mass/weight [for example, heavy/light, heavier than, lighter than]

capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]

time [for example, quicker, slower, earlier, later]

I can measure and begin to record the following:

lengths and heights

mass/weight

capacity and volume

time (hours, minutes, seconds)

I can recognise and know the value of different denominations of coins and notes

I can sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].

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.

Geometry: Properties of Shapes

I can recognise and name common 2-D and 3-D shapes, including:

2-D shapes [for example, rectangles (including squares), circles and triangles]

3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

Geometry: Position and Direction

I can describe position, direction and movement, including whole, half, quarter and three-quarter turns.

YEAR 2

Number: Number and Place Value
I can count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
I can recognise the place value of each digit in a two-digit number (tens, ones).
I can identify, represent and estimate numbers using different representations, including the number line.
I can compare and order numbers from 0 up to 100; use <, > and = signs.
I can read and write numbers to at least 100 in numerals and in words.
I can use place value and number facts to solve problems.
Number: Addition and Subtraction
I can solve problems with addition and subtraction:
<i>using concrete objects and pictorial representations, including those involving numbers, quantities and measures</i>
<i>applying their increasing knowledge of mental and written methods</i>
I can recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
I can add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
<i>a two-digit number and ones</i>
<i>a two-digit number and tens</i>
<i>two two-digit numbers</i>
<i>adding three one-digit numbers</i>
I can show that addition of two 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 and solve missing number problems.
Number: Multiplication and Division
I can recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
I can calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
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 solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Number – Fractions
I can recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
I can write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Measurement
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 the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.
I can compare and order lengths, mass, volume/capacity and record the results using >, < and =
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 compare and sequence intervals of time.
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 know the number of minutes in an hour and the number of hours in a day.
Geometry: Properties of Shapes
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 and describe the properties of 3-D shapes, including the number of edges, vertices and faces.
I can identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].
I can compare and sort common 2-D and 3-D shapes and everyday objects.
Geometry: Position and Direction
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).
Statistics
I can interpret and construct simple pictograms, tally charts, block diagrams and simple tables.
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.

YEAR 3

Number: Number and Place Value
I can count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
I can recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
I can compare and order numbers up to 1000
I can identify, represent and estimate numbers using different representations
I can read and write numbers up to 1000 in numerals and in words
I can solve number problems and practical problems involving these ideas.
Number: Addition and Subtraction
I can add and subtract numbers mentally, including:
a three-digit number and ones
a three-digit number and tens
a three-digit number and hundreds
I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
I can estimate the answer to a calculation and use inverse operations to check answers
I can solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
Number: Multiplication and Division
I can recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
I can write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
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.
Number - Fractions
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 recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
I can recognise and use fractions as numbers: unit fractions and non-unit 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, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
I can compare and order unit fractions, and fractions with the same denominators
I can solve problems that involve all of the above.
Measurement
I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
I can measure the perimeter of simple 2-D shapes
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, including using 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; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight
I know the number of seconds in a minute and the number of days in each month, year and leap year
I can compare durations of events [for example to calculate the time taken by particular events or tasks].
Geometry: Properties of Shapes
I can draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
I can recognise angles as a property of shape or a description of a turn
I can identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
Statistics
I can interpret and present data using bar charts, pictograms and tables
I can solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

YEAR 4

Number: Number and Place Value
I can count in multiples of 6, 7, 9, 25 and 1000.
I can find 1000 more or less than a given number.
I can count backwards through zero to include negative numbers.
I can recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).
I can order and compare numbers beyond 1000.
I can identify, represent and estimate numbers using different representations.
I can round any number to the nearest 10, 100 or 1000.
I can solve number and practical problems that involve all of the above and with increasingly large positive numbers.
I can read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.
Number: Addition and Subtraction
I can add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
I can estimate and use inverse operations to check answers to a calculation
I can solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Number: 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; multiplying together three numbers
I can recognise and use factor pairs and commutativity in mental calculations
I can multiply two-digit and three-digit numbers by a one-digit number using formal written layout
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.
Number: Fractions
I can recognise and show, using diagrams, families of common equivalent fractions
I can count up and down in hundredths; recognise 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, and 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 recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
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 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
I can solve simple measure and money problems involving fractions and decimals to two decimal places.
Measurement
I can convert between different units of measure [for example, kilometre to metre; hour to minute]
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, compare and calculate different measures, including money in pounds and pence
I can read, write and convert time between analogue and digital 12- and 24-hour clocks
I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
Geometry: Properties of Shapes
I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
I can identify acute and obtuse angles and compare and order angles up to two 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.
Geometry: Position and Direction
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.
Statistics
I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.