

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Number and Place Value	- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens - given a number, identify one more and one less - 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 - read and write numbers from 1 to 20 in numerals and words.	- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward - recognise the place value of each digit in a two-digit number (tens, ones) - identify, represent and estimate numbers using different representations, including the number line - compare and order numbers from 0 up to 100; use <, > and = signs - read and write numbers to at least 100 in numerals and in words - use place value and number facts to solve problems.	- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number - recognise the place value of each digit in a three-digit number (hundreds, tens, ones) - compare and order numbers up to 1000 - identify, represent and estimate numbers using different representations - read and write numbers up to 1000 in numerals and in words - solve number problems and practical problems involving these ideas.	- count in multiples of 6, 7, 9, 25 and 1000 - find 1000 more or less than a given number - count backwards through zero to include negative numbers - recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) - order and compare numbers beyond 1000 - identify, represent and estimate numbers using different representations - round any number to the nearest 10, 100 or 1000 - solve number and practical problems that involve all of the above and with increasingly large positive numbers - 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.	- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit - count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 - interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero - round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 - solve number problems and practical problems that involve all of the above - read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit - round any whole number to a required degree of accuracy - use negative numbers in context, and calculate intervals across zero - solve number and practical problems that involve all of the above.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Addition and Subtraction	- read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs - represent and use number bonds and related subtraction facts within 20 - add and subtract one-digit and two-digit numbers to 20, including zero - solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$.	- 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 - recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 - add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers - show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot - recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.	- add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - two three -digit numbers - add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction - estimate the answer to a calculation and use inverse operations to check answers - solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate - estimate and use inverse operations to check answers to a calculation - solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	- add and subtract whole numbers with more than 4 digits, including using formal written methods of (columnar addition and subtraction) - add and subtract numbers mentally with increasingly large numbers - use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy - solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	- perform mental calculations, including with mixed operations and large numbers. - use their knowledge of the order of operations to carry out calculations involving the four operations - solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - solve problems involving addition and subtraction, - use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Multiplication and Division	• 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.	• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals (=) signs • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • 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 • solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.	• recall multiplication and division facts for multiplication tables up to 12×12 • 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 • recognise and use factor pairs and commutativity in mental calculations • multiply two-digit and three-digit numbers by a one-digit number using formal written layout • 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.	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • recognise and use square numbers and cube numbers and their notation • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two digit whole number using the formal written method for long division, interpret remainders as whole number reminders, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations • solve problems using multiplication and division. • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.



Hope | Believe | Achieve

Maths

Skills Progression



					• Solve problems involving multiplication and division and a combination of these , including understanding the equals sign • Solve problems involving multiplication and d division , including scaling by simple fractions and problems involving simple rates	
--	--	--	--	--	--	--

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions (including Decimals and Percentages)	- recognise, find and name a half as one of two equal parts of an object, shape or quantity - recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	- 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 - write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	- 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 - recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators - recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators - recognise and show, using diagrams, equivalent fractions with small denominators - add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$) - compare and order unit fractions, and fractions with the same denominators - solve problems that involve all of the above.	- recognise and show, using diagrams, families of common equivalent fractions - count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. - 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 - add and subtract fractions with the same denominator - recognise and write decimal equivalents of any number of tenths or hundredths - recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$ - 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 units, tenths and hundredths - round decimals with one decimal place to the nearest whole number - compare numbers with the same number of decimal places up to two decimal places	- compare and order fractions whose denominators are all multiples of the same number - identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths - recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$) - add and subtract fractions with the same denominator and multiples of the same number - multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams - read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$) - recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents - round decimals with two decimal places to the nearest whole number and to one decimal place	- use common factors to simplify fractions; use common multiples to express fractions in the same denomination - compare and order fractions, including fractions > 1 - add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions - multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) - divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$) - associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) - identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places - multiply one-digit numbers with up to two decimal places by whole numbers - use written division methods in cases where the answer has

Maths

Skills Progression



				solve simple measure and money problems involving fractions and decimals to two decimal places.	- read, write, order and compare numbers with up to three decimal places - solve problems involving number up to three decimal places - recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100, and as a decimal - 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 with a denominator of a multiple of 10 or 25.	up to two decimal places - solve problems which require answers to be rounded to specified degrees of accuracy - recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
--	--	--	--	---	--	---

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement	- compare, describe and solve practical problems for: - lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half) - mass or weight (e.g. heavy/light, heavier than, lighter than) - capacity/volume (full/empty, more than, less than, quarter) - time (quicker, slower, earlier, later) - measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds) - recognise and know the value of different denominations of coins and notes - sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening - recognise and use language relating to dates, including days of the week, weeks, months and years - tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	- 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 - compare and order lengths, mass, volume/capacity and record the results using >, < and = - recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value - find different combinations of coins that equal the same amounts of money - solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change - compare and sequence intervals of time - 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. - Know the number of minutes in an hour and the number of hours in a day	- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) - measure the perimeter of simple 2-D shapes - add and subtract amounts of money to give change, using both £ and p in practical contexts - tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks - estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight - know the number of seconds in a minute and the number of days in each month, year and leap year - compare durations of events, for example to calculate the time taken by particular events or tasks.	- Convert between different units of measure (e.g. kilometre to metre; hour to minute) - measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres - find the area of rectilinear shapes by counting squares - estimate, compare and calculate different measures, including money in pounds and pence - read, write and convert time between analogue and digital 12 and 24-hour clocks - solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	- convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) - understand and use equivalences between metric units and common imperial units such as inches, pounds and pints - measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres - calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes - estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water) - solve problems involving converting between units of time - use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.	- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate - use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places - convert between miles and kilometres - recognise that shapes with the same areas can have different perimeters and vice versa - recognise when it is possible to use formulae for area and volume of shapes - calculate the area of parallelograms and triangles - calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm³) and cubic metres (m³), and extending to other units such as mm³ and km³.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry Properties of Shapes	- recognise and name common 2-D and 3-D shapes, including: 2-D shapes (e.g. rectangles (including squares), circles and triangles) 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres).	- identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line - identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces - identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid - compare and sort common 2-D and 3-D shapes and everyday objects.	- draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them - recognise that angles are a property of shape or a description of a turn - 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 - identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes - identify acute and obtuse angles and compare and order angles up to two right angles by size - identify lines of symmetry in 2-D shapes presented in different orientations - complete a simple symmetric figure with respect to a specific line of symmetry.	- identify 3-D shapes, including cubes and other cuboids, from 2-D representations - know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles - draw given angles, and measure them in degrees ($^{\circ}$) - identify: - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) - other multiples of 90° - use the properties of rectangles to deduce related facts and find missing lengths and angles - distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	- draw 2-D shapes using given dimensions and angles - recognise, describe and build simple 3-D shapes, including making nets - compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons - illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius - recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry Position and Direction		describe position, directions and movements, including half, quarter and three-quarter turns.	- order and arrange combinations of mathematical objects in patterns - use mathematical vocabulary to describe position, direction and movement including distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise), and movement in a straight line.	- describe positions on a 2-D grid as coordinates in the first quadrant - describe movements between positions as translations of a given unit to the left/right and up/down - plot specified points and draw sides to complete a given polygon.	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.	- describe positions on the full coordinate grid (all four quadrants) - draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Maths

Skills Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics		- interpret and construct simple pictograms, tally charts, block diagrams and simple tables - ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity - ask and answer questions about totalling and comparing categorical data.	- interpret and present data using bar charts, pictograms and tables - solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	- interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs - solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	- solve comparison, sum and difference problems using information presented in a line graph - complete, read and interpret information in tables, including timetables.	- interpret and construct pie charts and line graphs and use these to solve problems - calculate and interpret the mean as an average.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion						• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison • solve problems involving similar shapes where the scale factor is known or can be found • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Maths

Skills Progression



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra						• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy number sentences involving two unknowns • enumerate all possibilities of combinations of two variables.