

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

				• order and compare numbers beyond 1000 • 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	and determine the value of each digit • interpret negative numbers in context • 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	
Addition and Subtraction	• 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 $7 = _ - 9$	• 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 • solve problems with addition and subtraction: using concrete objects and	• add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • solve addition and subtraction two-step problems in contexts,	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers	• 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

		pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods	columnar addition and subtraction • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	deciding which operations and methods to use and why	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	multistep problems in contexts, deciding which operations and methods to use and why
Multiplication and Division	• count in 2s, 5s and 10s • recognise and make equal groups by sharing and grouping • use doubles • make arrays • solve one-step problems involving multiplication and division, by calculating the answer using concrete objects,	• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	• 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-	• 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	• 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	• identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate

	pictorial representations and arrays with the support of the teacher	• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals (=) signs • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	digit numbers times one-digit numbers, using mental and progressing to formal written methods • solve problems involving multiplying and missing number problems	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 missing number problems	• establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • 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	degree of accuracy • 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 of long division, • perform mental calculations, including with mixed operations and large numbers • solve problems involving addition, subtraction, multiplication and division • use their knowledge of the order of operations to
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					of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	carry out calculations involving the four operations
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Fractions, 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity • write simple fractions of an amount example, $\frac{1}{2}$ of 6 = 3	• 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 • compare and order unit fractions, and fractions with the same denominators • add and subtract fractions with the	• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • recognise and show, using diagrams, families of common equivalent fractions • add and subtract fractions with the same denominator • 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	• 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 • compare and order fractions whose denominators are all multiples of the same number • add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers	• 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 • divide proper fractions by whole numbers • identify the value of each digit in numbers
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			same denominator within one whole • solve problems with fractions	• recognise and write decimal equivalents of any number of tenths or hundredths • solve simple measure and money problems involving fractions and decimals to two decimal places	• read and write decimal numbers as fractions • 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 • read, write, order and compare numbers with 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	given to three decimal places • associate a fraction with division and calculate decimal fraction equivalents
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					100, and as a decimal	
Ratio, Proportion and Algebra						• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables
Measurement (measures, money, time, perimeter, area and volume)	• compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume	• standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	• convert between different units of measure • estimate, compare and calculate different measures	• convert between different units of metric measure • use all four operations to solve problems involving measure	• solve problems involving the calculation and conversion of units of measure, using decimal notation • use, read, write and convert

	• recognise and know the value of different denominations of coins and note • sequence events in chronological order using language [for example, 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	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	• 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, • estimate and read time with increasing accuracy to the nearest minute • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events • measure the perimeter of simple 2-D shapes	• 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 • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear	• use all four operations to solve problems involving measure • solve problems involving converting between units of time • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm²) and square metres (m²)	between standard units, converting measurements of length, mass, volume and time • convert between miles and kilometres • use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa • recognise that shapes with the same areas can have different perimeters • recognise when it is possible to use formulae for area and volume of shapes
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		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		shapes by counting squares		• calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm ³) and cubic metres (m ³),
Geometry (2D Shapes, 3D shapes, angles, lines, position and direction)	• recognise and name common 2- D shapes • recognise and name common 3- D shapes • describe position, direction and movement, including whole, half, quarter and three-quarter turns	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify 2-D shapes on the surface of 3-D shapes • compare and sort common 2-D shapes and everyday objects • recognise and name common 3- D • compare and sort common 3-D shapes and everyday objects • order and arrange combinations of mathematical objects	• draw 2-D shapes • make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • recognise angles as 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	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2-D shapes presented in different orientations • identify acute and obtuse angles and compare and order angles up	• distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles • identify 3-D shapes, including cubes and other cuboids, from 2-	• draw 2-D shapes using given dimensions and angles • compare and classify geometric shapes based on their properties and sizes • name parts of circles, including radius, diameter and circumference • recognise, describe and build simple 3-D shapes,

		in patterns and sequence • 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)	angles are greater than or less than a right angle • identify horizontal and vertical lines and pairs of perpendicular and parallel lines	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 • 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	D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees • 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 multiple of 90° • 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	including making nets • find unknown angles in any triangles, quadrilaterals, and regular polygons • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles • 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
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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	• interpret and present data using bar charts, pictograms and tables • solve one-step and two step 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	• complete, read and interpret information in tables, including timetables • solve comparison, sum and difference problems using information presented in a line graph	• interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average
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