Strands with level identifiers

When planning, ensure that age expected objectives are linked in a progressive manner – eg To know place value to of a two-digit number (Year Two) has the progression objective To recognise value of each digit in a three-digit number (Year Three). The Year 3 objective would be the challenge objective to follow the Year Two objective.

Arithmetic (Number, Calculation and Fractions, Decimals & Percentages)

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| Year Four | Year Five | Year Six |
| To identify, represent and estimate numbers using different representationsTo solve number and practical problems that involve all of the above and with increasingly large positive numbersTo solve sequences involving decimalsTo add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction (including decimals in the context of money and carrying/borrowing concept)To estimate and use inverse operations to check answers to a calculationTo solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.To multiply two-digit and three-digit numbers by a one-digit and two-digit number for multiplying using formal written layout (Short Multiplication)To divide two-digit and three-digit numbers by one-digit including remainders To solve missing number and inverse equations (up to three missing numbers and equals signs)To solve problems involving multiplying and dividingTo recognise common equivalent fractionsTo count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by tenTo solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantitiesTo recognise mixed numbers and improper fractions and convert from one form to the other To add and subtract fractions with the same denominator(inc 3 fractions and inverse)To recognise and write decimal equivalents of any number of tenths or hundredths (converting decimal divisions into fractions.)To recognise and write decimal equivalents to , , To order and compare decimals with the same number of decimal places up to two decimal placesTo solve simple measure and money problems involving fractions and decimals to two decimal placesTo find fractions of number with multiply parts eg¾ 4/5 6/7Dividing fractions by an integer(10 making into aDecimal) | To solve sequences involving negative numbersTo solve number problems and practical problems To add and subtract whole numbers with more than 4 digits, using formal written methods (columnar addition and subtraction)To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracyTo solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.To multiply numbers up to 4 digits by a one- or two- or 3-digit number using a formal written method, including long multiplication for two-digit numbersTo 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 contextTo solve two step problems involving multiplication and divisionTo compare and order fractions where denominators are multiples of the same numberTo find equivalent fractions of a given fractionTo 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,  +  =  = 1]To cancel fractions to simplest formTo add and subtract fractions with the same denominator and denominators that are multiples of the same numberTo multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagramsTo read and write decimal numbers as fractions [for example, 0.71 = ]To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalentsTo round decimals with two decimal places to the nearest whole number and to one decimal placeTo read, write, order and compare decimals with a mix of decimal places (up to three decimal places)To solve problems involving number up to three decimal placesTo 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 decimalTo solve problems which require knowing percentage and decimal equivalents of , , , ,  and those fractions with a denominator of a multiple of 10 or 25.To find proportion as a % of a number  | To solve number and practical problemsTo solve problems involving inverse operation and bracketsTo multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of multiplicationTo divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, decimals or by rounding, as appropriate for the contextTo 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 including decimal remaindersTo use knowledge of the order of operations (bodmas) to carry out calculations involving the four operationsTo solve multi-step problems involving all four contexts, deciding which operations and methods to use and whyTo use simple formulaeTo generate and describe linear number sequencesTo express missing number problems algebraicallyTo find pairs of numbers that satisfy an equation with two unknownsTo enumerate possibilities of combinations of two variables.To use common factors to simplify fractions; use common multiples to express fractions in the same denominationTo compare and order fractions, including fractions > 1To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractionsTo multiply simple pairs of proper fractions, writing the answer in its simplest form [for example,  × = ]To divide proper fractions by whole numbers [for example,  ÷ 2 = ]To convert fraction to decimals using division [for example, 0.375 for ]To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division factsTo solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison (including % increase/decrease)To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.To solve ratio and proportion problems |

Measures

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| Year Four | Year Five | Year Six |
|  To convert between different units of measure [for example, kilometre to metre; hour to minute]To measure and calculate the perimeter of a rectangle (including squares) in centimetres and metresTo find the area of rectangles by counting squares and then by using a formula To estimate, compare and calculate different measures, including money in pounds and penceTo read, write and convert time between analogue and digital 12- and 24-hour clocksTo solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.To read and solve problems involving timetablesTo measure to the nearest mmTo read scales involving a range of divisions | To convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) including decimal notationTo understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pintsTo measure and calculate the perimeter of shapes in centimetres and metresTo calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapesTo find the area and perimeter of compound shapesTo read scales involving a range of divisionsTo estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]To solve problems involving converting between units of timeTo use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriateTo 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 placesTo convert between miles and kilometresTo recognise that shapes with the same areas can have different perimeters and vice versaTo calculate the perimeter and area of compound shape using formulaTo calculate the area of parallelograms and trianglesTo calculate volume of shapesTo calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].To read scales involving a range of divisions and compare weights on scales with differing divisions |

Shape

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| Year Four | Year Five | Year Six |
| To compare and classify 2D and 3D shapes, including a range of quadrilaterals and triangles**,** based on their properties and sizesTo identify nets of 3D shapeTo recognise sides that are perpendicular, parallel and adjacent.To identify acute and obtuse angles and compare and order angles up to two right angles by sizeTo measure and draw acute/obtuse angles to the nearest 5 degrees.To identify lines of symmetry in 2-D shapes presented in different orientationsTo complete a simple symmetric figure with respect to a specific line of symmetry.To reflect shape across a vertical/horizontal/oblique lineTo describe positions on a 2-D grid as coordinates in the first quadrantTo describe movements between positions as translations of a given unit to the left/right and up/downTo rotate shapeTo plot specified points and draw sides to complete a given polygon on a co-ordinate grid | To identify 3-D shapes, including cubes and other cuboids, from 2-D representationsTo know angles are measured in degrees: estimate and compare acute, obtuse and reflex anglesTo draw given angles, and measure them in degrees (o)To identify:angles at a point and one whole turn (total 360o)angles at a point on a straight line and  a turn (total 180o)other multiples of 90oTo use the properties of rectangles to deduce related facts and find missing lengths and anglesTo use the properties of triangles to find missing anglesTo distinguish between regular and irregular polygons based on reasoning about equal sides and angles.To identify, describe and represent the position of a shape following a reflection or translation, or rotation using the appropriate language, and know that the shape has not changed (congruent)To plot and read co-ordinates across four quadrants | To draw accurate 2-D shapes (including triangles) using given dimensions and anglesTo recognise, describe and build simple 3-D shapes, including making netsTo compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygonsTo illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radiusTo recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.To describe positions on the full coordinate grid (all four quadrants)To draw and translate simple shapes on the coordinate plane, and reflect them in the axes.To solve problems involving similar shapes where the scale factor is known or can be found |

Handling & Interpreting Data

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| Year Four | Year Five | Year Six |
| To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.To use the language of probability to discuss events and outcomes (certain/impossible)To calculate mode of a set of dataTO calculate range of a set of data | To interpret and present discrete, grouped and continuous data using appropriate graphical methods, including bar charts and time graphs.To solve comparison, sum and difference problems using information presented in a line graphTo complete, read and interpret information in tables, including timetables.To interpret simple pie charts To use an increasing language of probability to discuss events and outcomesTo find the mode/range/ median from a set of data | To interpret and construct pie charts and line graphs and use these to solve problemsTo calculate and interpret the mean as an average, and find mode/range/median from a set of dataTo compare data from two different sources |