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| Area | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Numbers – Reading and writing . | Read and Write numbers 1 to 20.  . | Read & write numbers to 20 in numerals & words.  Read & write numbers to 100 in numerals. | Read and write all numbers to 100 in digits and words. | Read and write all numbers to 1000 in digits and words. | Read Roman numerals to 100.  Read and write numbers to 10,000 in digits and words. | Read and write numbers to 1 million.  Read Roman numerals to 1000.  Count forwards and backwards through 0 using positive and negative numbers. | Read and write numbers to 10 million.  Count forwards and backwards through 0 using positive and negative numbers in context. |
| Numbers – Ordering and rounding. | Order numbers 1 to 20 reliably.  Count to 20 reliably | Order numbers to 50 reliably.  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. | Order numbers to 100 accurately.  Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. | Order numbers reliably to 1000.  Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. | Order numbers reliably to 10,000.  Round any number to the nearest 10, 100 or 1000. | Order numbers to 1 million reliably.  Count forwards or backwards in 10, 100, 1000 etc to 1 million.  Round any number to the nearest 10,000 and 100,000, then 1million.  Round decimals with tenths to the nearest whole. | Order numbers to 10 million reliably.  Count forwards and backwards from any number in steps of 10, 100, 1000, 10,000, 100,000 and 1 million.  Round decimals to the nearest whole and tenth . |
| Numbers – more and less | Know 1 more and 1 less than numbers to 20. | Say 1 more/1 less of any given number to 100. | Say 10 more and 10 less than any number to 100. | Say 10 more of 10 less than any number to 1000. | Find 1000 more or less than any number. | Find 10, 100, 1000, 10,000, 100,000 and 1 million more or less. | Use effective methods to find any amount that is more or less than from any given number. |
| Place Value | Identify and represent numbers using objects and pictorial representations including the number line. | 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 | Compare and order numbers from 0 up to 100; use and = sign.  Recognise place value of units and tens, using apparatus to help if necessary. | Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).  Identify, represent and estimate numbers using different representations. | 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 | Know place value to 1 million – identify the value to any digit and partition and recombine numbers to 1 million.  Recognise tenths after the decimal point. | Know place value to 10 million – identify the value of any digit; partition and recombine numbers to 10 million.  Recognise place value of decimals to 3 decimal places. |
| Tables, Multiples, factors, squares and cubes. |  | Count in multiples of 2, 5 and 10. | Count in steps of 2, 3 & 5 from any number up to 100 and in 10s from any number (forward/backward).  Recall & use multiplication & division facts for 2, 5 & 10 tables. | Count from 0 in multiples of 4, 8, 50 & 100.  Recall & use multiplication & division facts for 3, 4, 8 tables. | Count in multiples of 6, 7, 9, 25 & 1000.  Recall & use multiplication & division facts all tables to 12x12. | Identify all multiples & factors, including finding all factor pairs.  Know and use the vocabulary of square and prime numbers.  Investigate prime numbers to 100 and know all primes to 19. | Identify common factors, common multiples & prime numbers. |
| Number bonds and facts/Estimation | Know number bonds to 5 reliably.  Begin to know number bonds to 10.  Recognise odd and even numbers to 10. | Represent and use number bonds and related subtraction facts within 20. | Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. | Estimate the answer to a calculation and use inverse operations to check answers. | Estimate and use inverse operations to check answers to a calculation. | Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. | Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. |
| Calculations-+ and - | Add & subtract two single digit numbers.  Count on/back to find the answer. | 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 = – 9. | Solve problems with addition and subtraction.  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 and adding three one-digit numbers.  How 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 solve missing number problems. | Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds.  Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.  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.  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 (columnar addition and subtraction).  Add and subtract numbers mentally with increasingly large numbers.  Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | Add and subtract numbers of increasing size.  Add and subtract numbers which have decimals up to three places. |
| Calculations x and ÷ |  | 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 (×), division (÷) 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. | 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 positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | 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. | 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. | 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, and interpret remainders as whole number remainders, fractions, 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. |
| Fractions |  | 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 - 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity.  Write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½ . | 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 denominator.  Recognise and show, using diagrams, equivalent fractions with small denominators. Add and subtract fractions with the same denominator within one whole.  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 one 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 1/4., ½ and ¾.  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. | 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.  Add and subtract fractions with the same denominator and denominators that are 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. | 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. Associate a fraction with division and calculate decimal fraction equivalents. |
| Decimals |  |  |  | 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. | Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.  Recognise and write decimal equivalents of any number of tenths or hundredths.  Recognise and write decimal equivalents to ½, ¼ and ¾.  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.  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.  Solve simple measure and money problems involving fractions and decimals to two decimal places. | Read and write decimal numbers as fractions [for example, 0.71 =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.  Read, write, order and compare numbers with up to three decimal places.  Solve problems involving number up to three decimal places. | Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers 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 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. |
| Percentages |  |  |  |  |  | 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 ½ , ¼ , 1/5 , 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.  Use knowledge of percentage, fraction and decimal equivalence to find a simple percentage of a quantity. | Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.  Find a range of percentages of a quantity, using fraction, decimal and percentage equivalence to do so.  Find percentage increases and decreases. |
| 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 [for example, of measures, and 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. |
| Telling The time | Establish a classroom routine; talk about the times we do things; look at and learn seasons of the year. | Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | 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. | 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 and hours; use vocabulary such as o’clock, 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]. | 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. | Solve problems involving converting between units of time. |  |
| Shapes |  | 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]. | Identify and describe the properties of 2-D shapes, including the number of sides and line 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 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 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.  Identify: angles at a point and one whole turn, angles at a point on a straight line and 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. |
| Position and direction |  | Describe position, direction and movement, including whole, half, quarter and three quarter turns. | Order and arrange combinations of mathematical objects in patterns and sequences.  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). |  | 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. |
| Measures |  | Compare, describe and solve practical problems for lengths and heights, mass, weight, capacity, volume and time.  Measure and record length, height, weight, capacity, volume and periods of time.  Recognise the different coins and notes.  Sequence events in chronological order, using related language.  Know dates, days of the week and months of the year. | Choose and use appropriate standard units of measurement.  Compare and order lengths, heights, weights and capacities, using <>= to do so.  Use £ and p to combine different amounts to make a particular value.  Find different amounts of coins to make the same values. | 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. | Convert between different units of measure [for example, 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. | Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).  Understand and use approximate 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 rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes.  Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. | 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 cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. |
| 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 [for example, ‘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. |
| Algebra. |  | Solve simple empty box questions, such as what add 3 makes 5. | Solve empty box questions within 20, using number bonds to help. |  |  | Solve balance sums using the equals sign. | Use simple formula. 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. |
| Problem Solving | Use skills in number and shape work to solve practical problems. | Solve one step 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.  Use increasing knowledge to solve empty box problems. | Solve two step problems with addition and subtraction: using concrete objects and pictorial representations, and standard written methods including those involving numbers, quantities and measures. Applying their increasing knowledge of mental and written methods.  Use increasing knowledge to solve empty box problems. | Solve one and two step problems with addition and subtraction using standard written methods including those involving numbers, quantities and measures and information presented in bar charts, tables and pictograms. Apply their mental and written methods. | Solve two step problems with addition, subtraction and multiplication, using standard written methods including those involving numbers, quantities and measures and information presented in bar charts, tables and pictograms. Apply their mental and written methods. | Solve multi- step problems in context, using all four number operations, deciding which operations and most effective methods to use.  Solve problems involving numbers up to 3 decimal places.  Solve problems involving multiplication and division, with large numbers.  Solve comparison, sum and difference problems using information presented in a line graph. | Interpret pie charts and line graphs and use these to solve problems.  Solve multi-step problems involving all number operations, rounding, percentages, fractions, multiples and conversion of units of measurement, up to 3 decimal places.  solve shape problems involving scale factors. |
| Reasoning. | Able to talk about what they did. | Able to talk about what they did to answer a question, using concrete apparatus to help them explain. | Able to explain and offer some reasons for what and how they solved a problem or answered a question, using concrete apparatus if necessary. | Explain why methods or operations have been chosen to solve a particular problem; set work out in such a way as to support the explanation. Use diagrams or apparatus to help explain. | Explain why methods or operations have been chosen to solve a particular problem; set work out in such a way as to support the explanation. Use diagrams or apparatus to help explain | Explain why a particular method and/or operation has been used to solve a problem. Give concrete examples to back up what they say. Prove or disprove statements using reasoning skills and concrete examples. | Able to express missing number problems algebraically. Give concrete examples to back up what they say.  Prove or disprove statements using reasoning skills and concrete examples. |