

## Maths Skills Overview

| Aspects                | EYFS  | Year 1   | Year 2  | Year 3   | Year 4   | Year 5   | Year 6   |
|------------------------|---|--|---|--|--|--|--|
| Number and Place Value | Count objects, actions and sounds   | Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number | Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward             | Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number | Count in multiples of 6, 7, 9, 25 and 1000   | Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit e.g. what is the value of the '7' in 276,541? Find the difference between the largest and smallest whole numbers that can be made from using three digits | Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit  |
|                        | Subitise up to 5.   | Count and read numbers to 100 in numerals  | Recognise the place value of each digit in a two-digit number (tens, ones)                          | Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)         | Find 1000 more or less than a given number   | Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000  | Round any whole number to a required degree of accuracy  |
|                        | Link the number symbol (numeral) with its cardinal value                  | Count and write numbers to 100 in numerals   | Identify, represent and estimate numbers using different representations, including the number line | Compare and order numbers up to 1000   | Count backwards through zero to include negative numbers   | Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero   | Use negative numbers in context, and calculate intervals across zero   |
|                        | Verbally count beyond 10, recognising the pattern of the counting system. | Count in multiples of twos, fives and tens from 0  | Compare and order numbers from 0 up to 100; use <, > and = signs                                    | Identify, represent and estimate numbers using different representations                       | Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) | Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000  | Solve number and practical problems that involve ordering and comparing numbers to 10 000 000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero |
|                        | Compare numbers.  | Identify one more and one less of a given number   | Read and write numbers to at least 100 in numerals  | Read and write numbers up to 1000 in numerals  | Order and compare numbers beyond 1000  | Solve number problems and practical problems that involve ordering and comparing numbers to 1 000 000, counting forwards or backwards in steps, interpreting negative numbers and rounding   | Demonstrate an understanding of place value including decimals e.g. $28.13 = 28 + ? + 0.03$  |
|                        | Understand the 'one more than/one less than' relationship                 | Identify and represent numbers using objects and pictorial                                       | Read and write numbers to at least 100 in words   | Read and write numbers up to 1000 in words   | Identify, represent and estimate numbers using different representations                             | Read Roman numerals to 1000 (M) and recognise years written in Roman numerals  |  |

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|                          | between consecutive numbers.   | representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least  |   |  | including measures   |  |   |
|                          |  | Read and write numbers from 1 to 20 in numerals  | Use place value and number facts to solve problems  | Solve number problems and practical problems involving these ideas         | Round any number to the nearest 10, 100 or 1000  |  |   |
|                          |  | Read and write numbers from 1 to 20 in words   | Partition two-digit numbers into different combinations of tens and ones using apparatus if needed e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones  |  | Solve number and practical problems that involve all of the above and with increasingly large positive numbers                         |  |   |
|                          |  | Count in twos, fives and tens to solve problems e.g. count the number of chairs in a diagram when the chairs are organised in 7 rows of 5 by counting in fives | Use reasoning about numbers and relationships to solve more complex problems and explain his/her thinking e.g. $29 + 17 = 15 + 4 + ?$ ; 'Together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc. |  | 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 |  |   |
|                          |  | Partition and combine numbers using apparatus if required e.g. partition 76 into tens and ones; combine 6 tens and 4 ones                                      | Recall the multiples of 10 below and above any given 2 digit number e.g. say that for 67 the multiples are 60 and 70  |  |  |  |   |
| Addition and Subtraction | Automatically recall the number bonds (including subtraction facts) up to 5 and some number bonds to 10. <i>Children will be taught to explore the composition of numbers to 10.</i> | Read and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs  | Represent and use subtraction facts within 20   | Add and subtract numbers mentally, including a three-digit number and ones | Add numbers with up to four digits using the formal method of columnar addition  | Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | Perform mental calculations with mixed operations to carry out calculations involving the four operations |
|                          |  | Write mathematical   | Solve problems with   | Add numbers with up to   | Estimate and use inverse   | Add and subtract numbers   | Solve multi-step  |

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|  |  | statements involving addition (+), subtraction (-) and equals (=) signs  | addition and subtraction applying his/her increasing knowledge of written methods and mental methods where regrouping may be required   | three digits using the formal method of columnar addition                                | operations to check answers to a calculation   | mentally with increasingly large numbers   | problems in contexts, deciding which operations and methods to use and why e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; a roll of material is 6m long: how much is left when 5 pieces of 1.15m are cut from the roll?; a bottle of drink is 1.5 litres, how many cups of 175ml can be filled from the bottle, and how much drink is left? |
|  |  | Demonstrate an understanding of the commutative law (e.g. $3 + 2 = 5$ , therefore $2 + 3 = 5$ )                                    | Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$ , then $17 + 3 = 20$ ; if $7 - 3 = 4$ , then $17 - 3 = 14$ ; leading to if $14 + 3 = 17$ , then $3 + 14 = 17$ , $17 - 14 = 3$ and $17 - 3 = 14$ ) | Add and subtract numbers mentally, including a three-digit number and tens               | Subtract numbers with up to four digits using the formal method of columnar subtraction                            | Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy         | Solve problems involving addition and subtraction  |
|  |  | Demonstrate an understanding of inverse relationships involving addition and subtraction (e.g. if $3 + 2 = 5$ , then $5 - 2 = 3$ ) | Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100  | Subtract numbers with up to three digits using the formal method of columnar subtraction | Solve addition and subtraction two-step problems in contexts, 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 | Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy  |

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|  | Recall at least four of the six number bonds for 10 and reason about associated facts (e.g. $6 + 4 = 10$ , therefore $4 + 6 = 10$ and $10 - 6 = 4$ ) | Add and subtract numbers where no regrouping is required, using concrete objects, pictorial representations, and mentally, including a two-digit number and ones | Add and subtract numbers mentally, including a three-digit number and hundreds  |  |  |  |
|  | Represent and use number bonds within 20   | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and tens                                  | Estimate the answer to a calculation and use inverse operations to check answers  |  |  |  |
|  | Represent and use subtraction facts within 20  | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including two two-digit numbers  | Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction |  |  |  |
|  | Add one-digit and two-digit numbers to 20, including zero  | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including adding three one-digit numbers                               |   |  |  |  |
|  | Subtract one-digit and two-digit numbers to 20, including zero   | Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot                                       |   |  |  |  |

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|                             |   | Solve one-step problems that involve addition, subtraction and missing numbers using concrete objects and pictorial representations                                     | Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems |   |   |   |  |
|                             |   |   | Recall doubles and halves to 20 e.g. knowing that double 2 is 4, double 5 is 10 and half of 18 is 9  |   |   |   |  |
|                             |   |   | Use estimation to check that his/her answers to a calculation are reasonable e.g. knowing that $48 + 35$ will be less than 100                   |   |   |   |  |
|                             |   |   | Solve missing number problems using addition and subtraction   |   |   |   |  |
| Multiplication and Division | Explore and represent patterns, including double facts and how quantities can be distributed equally. | Solve one-step problems involving multiplication 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           | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | Recall multiplication and division facts for multiplication tables up to $12 \times 12$ | Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers | Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication |

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|  |  | Solve one-step problems involving division by calculating the answer using concrete objects, 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 | Write and calculate mathematical statements for multiplication and division using the multiplication tables that he/she knows, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods | 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 | Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers  | 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 |
|  |  |   | Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot   | 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                            | Recognise and use factor pairs and commutativity in mental calculations  | Establish whether a number up to 100 is prime and recall prime numbers up to 19  | 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  |
|  |  |   | Solve problems involving multiplication and division, using concrete materials and mental methods   |  | Multiply two-digit and three-digit numbers by a one-digit number using formal written layout   | 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 | 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  |

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|  |  |  | Solve problems involving multiplication and division, using arrays, repeated addition and multiplication and division facts, including problems in contexts e.g. knowing that $2 \times 7 = 14$ and $2 \times 8 = 16$ , explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left |  | 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 and divide numbers mentally drawing upon known facts  | Identify common factors, common multiples and prime numbers  |
|  |  |  | Use multiplication and division facts for 2, 5 and 10 to make deductions outside known multiplication facts e.g. know that multiples of 5 have one digit of 0 or 5 and use this to reason that $18 \times 5$ cannot be 92 as it is not a multiple of 5  |  |  | 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 | Use his/her knowledge of the order of operations to carry out calculations involving the four operations             |
|  |  |  | Solve word problems involving multiplication and division with more than one step e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet   |  |  | Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000   | Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
|  |  |  | Recognise the relationships between addition and subtraction and rewrite addition statements as simplified multiplication statements e.g. $10 + 10 + 10 + 5 + 5 = 3 \times 10 + 2 \times 5 = 4 \times 10$   |  |  | Recognise and use square numbers and the notation for squared (2)  | Solve problems involving addition, subtraction, multiplication and division  |

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|           |  |   |  |  |  | Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes                               | Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy |
|           |  |   |  |  |  | Recognise and use cube numbers and the notation for cubed (3)  |   |
|           |  |   |  |  |  | Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign |   |
|           |  |   |  |  |  | Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates                                |   |
| Fractions | Explore how quantities can be distributed equally. | Recognise, find and name a half as one of two 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 and demonstrate understanding that all parts must be equal parts of the whole | 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 and show, using diagrams, families of common equivalent fractions  | Compare and order fractions whose denominators are all multiples of the same number  | Use common factors to simplify fractions; use common multiples to express fractions in the same denomination                  |
|           |  | Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity | Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$  | Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators                            | Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | Identify and name equivalent fractions of a given fraction, represented visually, including tenths and hundredths  | Compare and order fractions, including fractions $> 1$  |
|           |  |   |  | Recognise and use fractions as numbers: unit fractions and non-unit fractions with small   | Solve problems involving increasingly harder fractions to calculate quantities, and fractions to                                   | Write equivalent fractions of a given fraction, represented visually, including tenths and hundredths  | Add and subtract fractions with different denominators and mixed numbers, using the   |



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|  |  |  | denominators   | divide quantities, including non-unit fractions where the answer is a whole number   |  | concept of equivalent fractions  |
|  |  |  | Recognise and show, using diagrams, equivalent fractions with small denominators     | Add and subtract fractions with the same denominator   | 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. $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$ | Divide proper fractions by whole numbers e.g. $1/3 \div 2 = 1/6$   |
|  |  |  | Add fractions with the same denominator within one whole e.g. $5/7 + 1/7 = 6/7$      | Recognise and write decimal equivalents of any number of tenths or hundredths  | Add and subtract fractions with the same denominator and denominators that are multiples of the same number  | Associate a fraction with division and calculate decimal fraction equivalents e.g. know that 7 divided by 21 is the same as $7/21$ and that this is equal to $1/3$ and e.g. 0.375 is equivalent to $3/8$ |
|  |  |  | Subtract fractions with the same denominator within one whole e.g. $6/7 - 1/7 = 5/7$ | Recognise and write decimal equivalents to $1/4$ , $1/2$ , $3/4$   | Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams  | 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                                  |
|  |  |  | Compare and order unit fractions, and fractions with the same denominators           | 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 | Read and write decimal numbers as fractions e.g. $0.71 = 71/100$ , $8.09 = 8 + 9/100$  | Multiply one-digit numbers with up to two decimal places by whole numbers  |
|  |  |  | Solve fraction problems  | Round decimals with one decimal place to the nearest whole number  | Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents  | Use written division methods in cases where the answer has up to two decimal places  |

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|  |  |  |  |  | Compare numbers with the same number of decimal places up to two decimal places                | Round decimals with two decimal places to the nearest whole number and to one decimal place   | Solve problems which require answers to be rounded to specified degrees of accuracy   |
|  |  |  |  |  | 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  | Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts e.g. one piece of cake that has been cut into 5 equal slices can be expressed as $\frac{1}{5}$ or 0.2 or 20% of the whole cake. |
|  |  |  |  |  |  | Solve problems involving number up to three decimal places  | Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$  |
|  |  |  |  |  |  | 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 fractions with a denominator of a multiple of 10 or 25 |   |

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| Measurement | Compare length, weight and capacity. | Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/short, double/half        | 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 | Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)                           | Convert between different units of measure e.g. kilometre to metre; hour to minute                        | Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)  | Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate  |
|             |                                      | Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than, lighter than                            | Compare and order lengths, mass, volume/capacity and record the results using >, < and =   | Measure the perimeter of simple 2-D shapes   | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints   | 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 |
|             |                                      | Compare, describe and solve practical problems for capacity and volume e.g. full/empty, more than, less than, half, half full, quarter | Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value   | Add and subtract amounts of money to give change, using both £ and p in practical contexts                           | Find the area of rectilinear shapes by counting squares   | Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres   | Convert between miles and kilometres  |
|             |                                      | Compare, describe and solve practical problems for time e.g. quicker, slower, earlier, later   | Find different combinations of coins that equal the same amounts of money  | Tell the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks   | Estimate, compare and calculate different measures, including money in pounds and pence                   | Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm <sup>2</sup> ) and square metres (m <sup>2</sup> ) and estimate the area of irregular shapes | Recognise that shapes with the same areas can have different perimeters and vice versa  |
|             |                                      | Measure and begin to record mass/weight  | Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change   | Write the time using an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks | Read, write and convert time between analogue and digital 12- and 24-hour clocks                          | Estimate volume e.g. using 1 cm <sup>3</sup> blocks to build cuboids (including cubes) and capacity e.g. using water  | Recognise when it is possible to use formulae for area and volume of shapes   |

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|  | Measure and begin to record capacity and volume  | Compare and sequence intervals of time   | 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 | 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  | Calculate the area of parallelograms and triangles   |
|  | Measure and begin to record time (hours, minutes, seconds)   | 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 seconds in a minute and the number of days in each month, year and leap year   |   | Use all four operations to solve problems involving measure e.g. length, mass, volume, money using decimal notation, including scaling | Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm <sup>3</sup> ) and cubic metres (m <sup>3</sup> ), and extending to other units e.g. mm <sup>3</sup> and km <sup>3</sup> |
|  | Recognise and know the value of different denominations of coins and notes   | Remember the number of minutes in an hour and the number of hours in a day   | Compare durations of events e.g. to calculate the time taken by particular events or tasks  |   |  |  |
|  | Sequence events in chronological order using language e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening | Read scales in divisions of ones, twos, fives and tens   |   |   |  |  |
|  | Recognise and use language relating to dates, including days of the week, weeks, months and years  | Read scales where not all numbers on the scale are given and estimate points in between  |   |   |  |  |
|  | Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times  | Read the time on a clock to the nearest 15 minutes   |   |   |  |  |

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|                     |   | Measure and begin to record length/height   |   |   |  |   |  |
| Properties of Shape | Select, rotate and manipulate shapes in order to develop spatial reasoning skills.                                    | Recognise and name common 2-D shapes e.g. rectangles (including squares), circles and triangles | Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line  | Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | Identify 3-D shapes, including cubes and other cuboids, from 2-D representations          | Draw 2-D shapes using given dimensions and angles  |
|                     | Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. | Recognise and name common 3-D shapes e.g. cuboids (including cubes), pyramids and spheres       | Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces   | Recognise angles as a property of shape or a description of a turn  | Identify acute and obtuse angles and compare and order angles up to two right angles by size                       | Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles | Recognise, describe and build simple 3-D shapes, including making nets   |
|                     |   |   | Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres)                            | Identify right angles and identify whether other angles are greater or less than a right angle                                  | Identify lines of symmetry in 2-D shapes presented in different orientations                                       | Draw given angles, and measure them in degrees (°)  | Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons |
|                     |   |   | Identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder and a triangle on a pyramid  | Recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn                  | Complete a simple symmetric figure with respect to a specific line of symmetry                                     | Identify angles at a point and one whole turn (total 360°)                                | Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius                        |
|                     |   |   | Compare and sort common 2-D and 3-D shapes and everyday objects describing similarities and differences e.g. find 2 different 2-D shapes that only have one line of symmetry; that a cube and a cuboid have the same number of edges, faces and | Identify horizontal and vertical lines and pairs of perpendicular and parallel lines  |  | Identify angles at a point on a straight line and 1/2 a turn (total 180°)                 | Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles                                 |

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|                        |   |   | vertices and describe what is different about them  |  |  |   |  |
|                        |   |   |   |  |  | Identify 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  |  |
| Position and direction | Continue, copy and create repeating patterns. | Describe position, direction and movement, including whole, half, quarter and three-quarter turns | Order and arrange combinations of mathematical objects in patterns and sequences  |  | Describe positions on a 2-D grid as coordinates in the first quadrant  | 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)                    |
|                        |   |   | 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 movements between positions as translations of a given unit to the left/right and up/down                           |   | Draw and translate simple shapes on the coordinate plane, and reflect them in the axis |
|                        |   |   |   |  | Plot specified points and draw sides to complete a given polygon   |   |  |
| Statistics             |   |   | Interpret and construct simple pictograms, tally charts, block diagrams and simple tables   | Interpret and present data using bar charts, 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 a line graph   | Interpret and construct pie charts and line graphs and use these to solve problems     |
|                        |   |   | Ask and answer simple questions by counting the number of objects   | Solve one-step and two-step questions e.g. 'How many more?' and 'How | Solve comparison, sum and difference problems using information presented in   | Complete, read and interpret information in tables, including timetables  | Calculate and interpret the mean as an average   |

|                      |  |  |   |   |   |  |   |
|----------------------|--|--|---|---|---|--|---|
|                      |  |  | in each category and sorting the categories by quantity                 | many fewer?' using information presented in scaled bar charts and pictograms and tables | bar charts, pictograms, tables and other graphs |  |   |
|                      |  |  | Ask and answer questions about totalling and comparing categorical data |   |   |  |   |
| 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 e.g. find $\frac{7}{9}$ of 108 |
|                      |  |  |   |   |   |  | Solve problems involving the calculation of percentages e.g. 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  |
| Algebra              |  |  |   |   |   |  | Use simple formulae e.g. perimeter of a rectangle or area of a triangle   |
|                      |  |  |   |   |   |  | 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  |

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