

Maths Skills Coverage and Progression

|  |  |  |  |  | negative whole numbers through zero |  |
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| Sequences and patterns | Recognise and create repeating patterns with numbers, objects and shapes <br> Identify odd and even numbers linked to counting in twos from 0 and 1 | Describe and extend simple sequences involving counting on or back in different steps | Describe and extend number sequences involving counting on or back in different steps | Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps | Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal | Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decima |
|  | Number - number and place value |  |  |  |  |  |
| Roman Numerals |  |  | Read Roman numerals from I to XII (see time) | Read Roman numerals to 100 ( I to C ) and know that over time, the numeral system changed to include the concept of zero and place value | Read Roman numerals to 1000 (M) and recognise years written in Roman numerals |  |
| Solving number problems | Solve problems and practical problems involving all of the above | Use place value and number facts to solve problems | Solve number problems and practical problems involving these ideas | Solve number and practical problems that involve all of the above and with increasingly large positive numbers | Solve number problems and practical problems that involve all of the above | Solve number and practical problems that involve all of the above |
|  | Number - addition and subtraction |  |  |  |  |  |
| Understanding addition and subtraction | Read, write and interpret mathematical statements involving addition (+), subtraction () and equals (=) signs | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting) <br> Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Understand subtraction as take away and difference (how many more, how many less/fewer) | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) <br> Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) | Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) |
| Addition and subtraction facts | Represent and use number bonds and related subtraction facts within 20 | Recall and use addition and subtraction facts to 20 <br> fluently, and derive and use related facts up to 100 <br> Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes) | Recall and use addition an subtraction facts for 100 (multiples of 5 and 10) Derive and use addition and subtraction facts for 100 Derive and use addition and subtraction facts for multiples of 100 totalling 1000 | Recall and use addition and subtraction facts for 100 <br> Recall and use addition and subtraction facts for multiples of 100 totalling 1000 <br> Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) | Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) <br> Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) | Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) |
| Mental methods | Add and subtract one-digit <br> and two-digit numbers to 20, including zero (usin concrete objects and pictorial representations) | Select a mental strategy appropriate for the number involved in the calculation <br> Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones <br> - a two-digit number and tens <br> -two two-digit numbers adding three one-digit numbers | Select a mental strategy appropriate for the numbers involved in the calculation <br> Add and subtract numbers mentally, including: <br> - a three-digit number and ones <br> - a three-digit number and tens <br> - a three-digit number and hundreds | Select a mental strategy appropriate for the numbers involved in the calculation <br> Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place | Select a mental strategy appropriate for the numbers involved in the calculation <br> Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places | Select a mental strategy appropriate for the numbers involved in the calculation <br> Perform mental calculations, including with mixed operations and large numbers and decimals |


| Written methods | *Written methods are mental methods for expectation of calculation | *Written methods ar informal at this stage mental methods for expectation of calculation |  |  |  | Add and subtract whole numbers and decimals using (columnar addition and subtraction) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Estimating and checking calculations |  |  | Estimate the answer to a calculation and use inverse answers | Estimate and use inverse operations to check answers to a calculatio | $\begin{aligned} & \text { Use rounding to check } \\ & \text { answers to acteclations and } \\ & \text { determine, inthe eontext of } \\ & \text { aproble, evels of } \\ & \text { accuracy } \end{aligned}$ accuracy |  |
| Order of operations |  |  |  |  |  | Use their knowledge of the order of operations to carry the four operations |
|  | Number - addition and subtraction |  |  |  |  |  |
| Solving addition and subtraction problems including those with missing numbers | Solve one-step problem ubtraction, using concre objects and pictorial representations, and missing $7=-9$ |  | Solve problems, including missing number problems using number facts, place value, and more complex addition and subtraction $\qquad$ | Solve addition and problems in contexts deciding which operations and methods to use and why Solve addition and subtraction numbers | Solve addition and subtraction multi-step problems in contexts, and methods to use and why $\qquad$ problems involving missing numbers | Solve addition and subtraction multi-ste problems in contexts, deciding which operations why Solve problems involving addition, subtraction, multiplication and division, including those with missing numbers numbers |
|  | Number - multiplication and division |  |  |  |  |  |
| Understanding multiplication and division |  |  | based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) Understand that division is the inverse of multiplication and vice versa <br> Understand how multiplication and division statements can be $\qquad$ and grouping and use each appropriately | strategy to solve a calculation involved (recall a known or related fact, calculate mentally, use a jotting, written method) Recognise and use factor pairs and commutativity in mental calculations |  |  |
| Multiplication and division facts |  |  | 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 $12 \times 12$ | Know and use the numbers, prime factors and composite (non-prime) numbers <br> Establish whether a number prime numbers up to 19 | Identify common factors, common multiples and prime numbers |

Maths Skills Coverage and Progression

|  | Recall and use doubles of all numbers to 10 and corresponding halves | Derive and use doubles of simple two-digit numbers numbers in which the ones total less than 10) Derive and use halves of simple two-digit even numbers (numbers in which the tens are even) | $\begin{aligned} & \text { Derive and use doubles of all } \\ & \text { numberst to 100 and } \\ & \text { corresponding halves } \\ & \text { Derive and ussedoubles of all } \\ & \text { multiples of } 50 \text { to soo } \end{aligned}$ | Use partitioning to double or halve any number, including decimals to one decimal place | Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) <br> Use partitioning to double or halve any number, including decimals to two decimal places | Use partitioning to double or halve any number |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mental methods |  | Calculate mathematical statements for multiplication (using repeated addition) and division within the multiplication tables and write them using the multiplication ( $x$ ), division (ㄱ) and equals ( $=$ ) signs | 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 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 | Multiply and divide numbers mentally drawing upon known facts <br> Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes | Perform mental calculations including with mixed operations and large numbers |
|  | Number - multiplication and division |  |  |  |  |  |
| Written methods | "Written methods are informal at this stage - see mental mexpectationoon of falculculations | *Written methods are formal at this stage - see mental methods fo expectation of calculations | Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, progressing to formal written methods <br> Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers divided by one-digit numbers, progressing to formal written methods | Multiply two-digit and three digit numbers by a one-digit number using formal written layout <br> Divide numbers up to 3 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context | 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 <br> 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 multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication Multiply one-digit numbers with up to two decimal places by whole numbers <br> 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 <br> Use written division methods in cases where the answer has up to two decimal places |
| Estimating and checking calculations |  |  | Use estimation to check answers to calculations and detersme, int int context of a probiem, an appporpriate degree of accuracy | Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy | Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy | Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy |
| Order of operations |  |  |  |  |  | Use their knowledge of the order of operations to carry out calculations involving the four operations |
| Solving multiplication | Solve one-step problems involving multiplication and division, by calculating the answer using concrete | Solve problems involving multiplication and division (including those with remainders), using materials, | Solve problems, including missing number problems, involving multiplication and division (and interpreting | Solve problems involving multiplying and adding, including using the distributive law to multiply | Solve problems involving addition, subtraction, multiplication and division and a combination of these | Solve problems involving addition, subtraction, multiplication and division |


| and division problems including those with missing numbers | representations and arrays with the support of the teacher | arrays, repeated addition, menta methods, and multiplication and division facts, including problems in contexts | remainders), including positive integer scaling problems and correspondence problems in which n objects are connected to mobjects | two digit numbers by one digit, division (including interpreting remainders), integer scaling problems and harder correspondence problems such as $n$ objects are connected to mobjects | including understanding the meaning of the equals sign Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates |  |
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|  | Number - fractions (including decimals and percentages) |  |  |  |  |  |
| Understanding fractions | Understand that a fraction can describe part of a whole <br> Understand that a unit fraction represents one equal part of a whole | Understand and use the terms numerator and denominator <br> Understand that a fraction can describe part of a set <br> Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be | Show practically or pictorially that a fraction is one whole number divided by another <br> (for example, $\%$ can be interpreted as $3 \div 4$ ) Understand that finding a fraction of an amount relates to division | Understand that a fraction is one whole number divided by another <br> (for example, $3 / 4$ can be interpreted as $3 \div 4$ ) |  |  |
| Fractions of objects, shapes and quantities | Recognise, find and name a half as one of two equal parts of an object, shape or quantity (including measure) Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure) | Recognise, find, name and write fractions $1 / 3,1 / 4,2 / 4$ and $3 / 4$ of a length, shape, set of objects or quantity | Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators <br> Recognise and use fractions as numbers: unit fractions and nonunit fractions with small denominators <br> 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 including those with a range of numerators and denominators <br> Recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten | Recognise mixed numbers and improper fractions and convert from one form to the other <br> Read and write decimal numbers as fractions (e.g $0.71=71 / 100$ ) |  |
|  | Number - fractions (including decimals and percentages) |  |  |  |  |  |
| Counting, comparing and ordering fractions |  | Count on and back in steps of $1 / 2$ and $1 / 6$ | Count on and back in steps of $1 / 2,1 / 4$ and $1 / 3$ <br> Compare and order unit fractions and fractions with the same denominators (including on a number line) | Count on and back in steps of unit fractions <br> Compare and order unit fractions and fractions with the same denominators (including on a number line) (continued from Year 3) | Count on and back in mixed number steps such as $11 / 2$ <br> Compare and order fractions whose denominators are all multiples of the same number (including on a number line) | Compare and order fractions, including fractions $>1$ (including on a number line) |
| Equivalence |  | Write simple fractions for example, $1 / 2$ of $6=3$ and recognise the equivalence of $2 / 4$ and $1 / 2$ | Recognise and show, using diagrams, equivalent fractions with small denominators | Recognise and show, using diagrams, families of common equivalent fractions <br> Recognise and write decimal equivalents of any number of tenths or hundredths Recognise and write decimal equivalents to $1 / 4,1 / 2$, and $3 / 4$ | Identify, name and write equivalent fractions of a a iven fraction reperesented visully. fraction, represented visually, including tenths and hundredths <br> Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents | Use common factors to simplify fractions; use common multiples to express fractions in the same denomination <br> Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts Associate a fraction with division and calculate decimal |

Maths Skills Coverage and Progression

|  |  |  |  |  |  | fraction equivalents (e.g. 0.375 ) for a simple fraction (e.g. 3/8) |
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| Calculating with fractions |  |  | Add and subtract fractions within one whole (using diagrams) (for example, $5 / 7+1 / 7=6 / 7$ ) | Add and subtract fractions with the same denominator (using diagrams) | Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams) <br> Write mathematical statements $>1$ as a mixed number (e.g. $2 / 5+4 / 5=6 / 5=11 / 5$ ) <br> Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams |  |
| 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 | Find simple percentages of amounts |
| Solving problems involving fractions, decimals and percentages |  |  | Solve problems that involve all of the above | Solve problems involving increasingly harder fractions to calculate quantities, and including non-unit fractions where the answer is a whole number <br> Solve simple measure and money problems involving fractions and decimals to two decimal places | Solve problems involving fractions <br> Solve problems involving number up to three decimal places <br> Solve problems which require knowing percentage and decimal equivalents of $1 / 2,1 / 4,1 / 5,2 / 5,4 / 5$ and those with a denominator of a multiple of 10 or 25 | Solve problems involving Fractions <br> Solve problems which require answers to be rounded to specified degrees of accuracy <br> Solve problems involving the calculation of percentages (for example, of measures, and such as $15 \%$ of 360 ) and the use of percentages for comparison |
|  | Ratio and Proportion |  |  |  |  |  |
| Ratio and proportion |  |  |  |  |  | Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts <br> Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples |


|  |  |  |  |  |  | Solve problems involving similar shapes where the scale factor is known or can be found |
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|  | Algebra |  |  |  |  |  |
| Algebra |  |  |  |  |  | Express missing number problems algebraically <br> Use simple formulae <br> Generate and describe linear number sequences <br> Find pairs of numbers that satisfy an equation with two unknowns <br> Enumerate possibilities of combinations of two variables |
|  | Measurement (length/height, perimeter, area and mass/weight) |  |  |  |  |  |
| Length / height | Measure and begin to record lengths and heights, using non-standard and then manageable standard units (m and cm ) within children's range of counting competence <br> Compare and describe lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) | Choose and use appropriate -standard units to estimate and measure length/height in any direction $(\mathrm{m} / \mathrm{cm})$ to the nearest appropriate unit using rulers <br> Compare and order lengths and record the results using $\geqslant$, < and $=$ | Measure, add and subtract lengths ( $\mathrm{m} / \mathrm{cm} / \mathrm{mm}$ ) <br> Compare lengths ( $\mathrm{m} / \mathrm{cm} / \mathrm{mm}$ ) | Estimate and calculate lengths <br> Compare lengths | Use, read and write standard units of length to a suitable degree of accuracy <br> Understand and use approximate equivalences between metric and common imperial units such as inches | Use, read and write standard units of length using decimal notation to three decimal places |
| Perimeter |  |  | Understand that perimeter is a measure of distance around the boundary of a shape <br> Measure the perimeter of simple 2-D shapes | Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres centimetres and metres | Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres | Recognise that shapes with the same areas can have different perimeters and vice versa |
| Area |  |  |  | Understand that area is measure of surface within a given boundary <br> Find the area of rectilinear shapes by counting squares | 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 | Calculate the area of parallelograms and triangles <br> Recognise when it is possible to use the formulae for area and volume of shapes |
| Mass | Measure and begin to record mass/weight, using non-standard and then standard units ( kg and g ) within children's range of counting competence <br> Compare and describe mass/weight (for example, | Choose and use appropriate standard units to estimate and measure mass ( $\mathrm{kg} / \mathrm{g}$ ) to using scales <br> Compare and order mass and record the results using | Measure, add and subtract mass (kg/g) <br> Compare mass (kg/g) | Estimate and calculate mass <br> Compare mass | Use, read and write standard units of mass to a suitable degree of accuracy <br> Understand and use approximate equivalences between metric and common | Use, read and write standard units of mass using decimal notation to three decimal places |

Maths Skills Coverage and Progression

|  | lighter than) |  |  |  |  |  |
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|  | Measurement (capacity, volume, temperature and conversion) |  |  |  |  |  |
| Capacity / volume | Measure and begin to record capacity and volume using non-standard and then standard units (litres and ml ) with children's range of counting competence <br> Compare and describe capacity and volume (for example, full/empty, more than, less than, half, half full, quarter) | Choose and use appropriate standard units to estimate and measure capacity and nearest appropriate unit using measuring vessels <br> Compare and order volume/capacity and record the results using $>$, <and = | Measure, add and subtract volume/capacity (1/ml) <br> Compare volume/capacity (1/mi) | Estimate and calculate volume/capacity <br> Compare volume/capacity | Estimate (and calculate) volume (for example, using $1 \mathrm{~cm}^{3}$ blocks to build cuboids (including cubes)) and capacity (for example, using water) <br> Understand the difference between liquid volume, including capacity and solid volume <br> Understand and use approximate equivalences between metric and common imperial units such as pints | Use, read and write standard units of volume using decimal notation to three decimal places <br> Calculate and estimate volume of cubes and cuboids using standard units, including cubic centimetres ( $\mathrm{cm}^{3}$ ) and cubic metres $\left(\mathrm{m}^{3}\right)$ and extending to other units (for example, $\mathrm{mm}^{3}$ and $\mathrm{km}^{3}$ ) <br> Compare volume of cubes and cuboids using standard units, including cubic centimetres ( $\mathrm{cm}^{3}$ ) and cubic metres $\left(\mathrm{m}^{3}\right)$ and extending to other units (for example, $\mathrm{mm}^{3}$ and $\mathrm{km}^{3}$ ) |
| Temperature |  | Choose and use appropriate standard units to estimate and measure temperature to the nearest degree ( ${ }^{\circ} \mathrm{C}$ ) <br> to the nearest degree ( ${ }^{\circ}$ ) | using thermometers Continue to estimate and measure temperature to the nearest degree ( ${ }^{\circ} \mathrm{C}$ ) using thermometers | Order temperatures including those below $0^{\circ} \mathrm{C}$ | Continue to order temperatures including those below $0^{\circ} \mathrm{C}$ | Calculate differences in temperature, including those that involve a positive and negative temperature |
| Conversion |  |  |  | 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) | 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 three decimal places <br> Convert between miles and Kilometres |
|  | Measurement (time) |  |  |  |  |  |
| Time | Recognise and use language relating to dates, including days of the week, weeks, months and years <br> Compare and describe time (for example, quicker, slower, earlier, later) <br> Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening <br> Measure and begin to record time (hours, | Compare and sequence intervals of time <br> Know the number of minutes in an hour and the | 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 <br> Know the number of seconds in a minute, and the number of days in each | Convert between different units of time, e.g. hour to minute | Convert between units of time in a problem solving context |  |


|  | minutes, seconds) <br> Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times | number of hours in a day <br> 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 | month, year and leap year <br> Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and <br> 24-hour clocks <br> Estimate and read time with increasing accuracy to the nearest minute <br> 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 | Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks | Use, read and write standard units of time |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Measurement (money and solving problems) |  |  |  |  |  |
| Money | Recognise and know the value of different denominations of coins and notes | Recognise and use symbols for pounds ( $f$ ) and pence ( $p$ ) <br> Combine amounts to make a particular value <br> Find different combinations of coins that equal the same amounts of money <br> Add and subtract money of the same unit, including giving change | continue to recognise and use symbols for pounds ( $£$ ) and pence ( p ) and understand that the decimal point separates pounds and pence <br> Recognise that ten 10 p coins are equivalent to $£ 1$ and that each coin is $1 / 10$ of $£ 1$ <br> Add and subtract amounts of money to give change, using both $£$ and $p$ in practical contexts | Write amounts of money using decimal notation <br> Recognise that one hundred 1 p coins are equivalent to $£ 1$ and that each coin is $1 / 100$ of $£ 1$ <br> Estimate, compare and calculate money in pounds and pence |  |  |
| Solving problems involving money and measures | Solve practical problems for: - lengths and heights -mass/weight - capacity and volume time | Solve simple problems in a practical context involving addition and subtraction of money and measures (including time) | Solve problems involving simple problems involving passage of time | Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days and problems involving money and measures | Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation including scaling <br> Solve problems involving converting between units of time | Solve problems involving the calculation and conversion of units of measure (including money and time), using decimal notation up to three decimal places where appropriate |
|  | Geometry - properties of shapes |  |  |  |  |  |
| Properties of shape | Recognise and name including 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 <br> Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid) | $\begin{aligned} & \text { Draw 2-D shapes and } \\ & \text { describe them } \end{aligned}$ | Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes <br> Identify lines of symmetry in 2-D shapes presented in different orientations <br> Complete a simple | Distinguish between regular and irregular polygons based on reasoning about equa sides and angles | Compare and classify geometric shapes based on their properties and sizes <br> Draw 2-D shapes using given dimensions and angles |

Maths Skills Coverage and Progression

|  | Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres | Identify and describe the properties of 3-D shapes, including the number of edges, vertices and face | Identify horizontal and vertical lines and pairs of perpendicular and parallel lines lines <br> Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | symmetric figure with respect to a specific line of symmetry <br> Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines <br> Compare and classify geometric shapes based on their properties and sizes | Use the properties of rectangles to deduce related facts and find missing lengths and angles <br> Identify 3-D shapes, including cubes and other cuboids, from 2-D representations | Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius <br> Recognise, describe and build simple 3-D shapes, including making nets |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Angles and rotation | Describe movement, including whole, half, quarter and three-quarter turns | Use mathematical vocabulary to describe movement, including rotation as a turn <br> Understand the link between rotation and turns in terms of right angles for quarter, half and three quarter turns (clockwise and anti-clockwise) | Recognise angles as a property of shape or a description of a turn <br> 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 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 <br> Draw given angles, and measure them in degres ( ${ }^{\circ}$ ) Identify: <br> - angles at a point and one whole turn (total $360^{\circ}$ ) - angles at a point on a Straight line and $1 / 2$ a turn (total $180^{\circ}$ ) (total $180^{\circ}$ ) - other multiples of $90^{\circ}$ | Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles <br> Find unknown angles in any triangles, quadrilaterals, and regular polygons |
|  | Geometry - position and direction |  |  |  |  |  |
| Patterns | Recognise and create repeating patterns with objects and shapes | Order and arrange combinations of mathematical objects in patterns and sequences |  |  |  |  |
| Position and direction | Describe position and direction | Use mathematical vocabulary to describe position, movement, including movement in a straight line |  |  |  |  |
| Coordinates (including reflection and translation) |  |  | Describe positions on a square grid labelled with letters and numbers | Describe positions on a 2-D grid as coordinates in the first quadrant <br> Plot specified points and draw sides to complete a given polygon <br> Describe movements between positions as translations of a given unit to the left/right and up/down | Describe positions on the first <br> Plot specified points and complete shapes <br> 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) <br> Draw and translate simple shapes on the coordinate plane, and reflect them in the axes |
|  | Statistics |  |  |  |  |  |

Maths Skills Coverage and Progression

| Sorting and classifying | Sort objects, numbers and shapes to a given criterion and their own | Compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects | Use sorting diagrams to compare and sort objects, and 3-D shapes and everyday objects | Use a variety of sorting diagrams to compare and classify numbers and geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | Complete and interpret linformation in ararity of sorting diagrams thincluding of nose sued to sort tropoperties | Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Present and interpret data | Present and interpret data in block diagrams using practical equipment | Interpret and construct simple pictograms, tally charts, block diagrams and simple tables | Interpret and present data using bar charts, pictograms and tables |  | Complete, read and interpret information in tables, including timetables | Interpret and construct pie charts and line graphs and use these to solve problems |
| Solve problems using data | Ask and answer simple questions by counting the number of objects in each category <br> Ask and answer questions by comparing categorical data | Ask and answer simple questions by counting the number of objects in each category and sorting th categories by quantity <br> Ask and answer questions about totalling and comparing categorical data | Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented scaled bar charts and pictograms and tables | Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graph | Solve comparison, sum and difference porblems suing information presented types a a fll graph | Solve comparison, sum and difference problems using information presented in all types of graph |
| Averages |  |  |  |  | Calculate and interpret the mode, median and range | Calculate and interpret the mean as an average |

