# Maths Skills Progression

## Nursery

| Area of Maths | Baseline Checkpoint | End of Autumn Checkpoint | End of Spring Checkpoint | End of F1 |
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| Number | • Know that things exist, even when out of sight.<br>• Begin to organise and categorise objects (e.g. putting all the teddy bears together or teddies and cars in separate piles).<br>• Select a small number of objects from a group when asked (up to 2). | • Recite some number names in sequence up to 5.<br>• Mark make and ascribe some concept of number to the marks (attempts at digits from the environment, making dots, lines etc).<br>• Show finger numbers to 3.<br>• Begin to solve real life maths problems with support. | • Recite numbers past 5<br>• Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').<br>• Show finger numbers to 4.<br>• Fast recognition of up to 2 objects, without having to count them individually ('subitising').<br>•Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.<br>•Experiment with their own symbols and marks as well as numerals. | • Have a good understanding of numbers to 5 and knows that the amount stays the same however objects are arranged.<br>• Rote counts to 10<br>• Subitise to 3.<br>• Represent numbers to 5 using fingers, marks or digits.<br>• Know the last number in a counting sequence is the total number (cardinal principle) |
| Numerical Patterns | • I can count in every day contexts, potentially missing some numbers.<br>• I can join in with finger rhymes. | •Say one number for each item in order: 1,2,3,4,5.<br>• Can show an understanding of simple comparisons like 'more'. | • Compare quantities using language: 'more than', 'fewer than'.<br>•Begin to solve real world mathematical problems with numbers up to 5. | • Compares amounts using the language of 'more, fewer or same'.<br>• Reads numerals to 5 and matches to an amount.<br>• Orders numbers to 5.<br>• Solve real world maths problems with numbers up to 5. |
| Shape, Space and Measure | • Can attempt, sometimes successfully, to fit shapes into spaces on inset boards or jigsaw puzzles.<br>• Can use blocks to create my own simple structures and arrangements. | • Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper.<br>• Explores and talks about different shapes using language such as 'big' and 'little'. | • *Extend and create ABAB patterns –stick, leaf, stick, leaf.*<br>• Show some understanding of 'now' and 'next'.<br>• Talk about a familiar route<br>• Use prepositions in front/behind. | • Uses some everyday language to talk about and compare size and shape.<br>• Recognises a repeated pattern and is beginning to create own patterns and arrangements.<br>• Talk about routines e.g. before/after. |

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| | • Can associate a sequence of actions with daily routines.<br>• Beginning to understand that things might happen 'now.'<br>• Compare sizes, weights etc. using gesture and language – bigger/little/smaller, high/low, tall, heavy.<br>• Can fill and empty a container. | • Makes comparisons relating to size.<br>• Talk about 'my day'. | • Explore 2D and 3D shapes naming a few.<br>• *Make comparisons between objects relating to size, length, weight and capacity.*<br>• Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. | • Start to identify shapes<br>• Identify shapes in the environment.<br>• Use positional language |

## Reception

| Area of Maths | Baseline Checkpoint | End of Autumn Checkpoint | End of Spring Checkpoint | End of Summer Checkpoint |
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| Number | | I can subitise to 3.<br>I can recognise numbers to 5.<br>I can represent 1-5 on fingers, on a five frame and with objects.<br>I can discuss composition of numbers to 3, showing some automatic recall of number facts.<br>I can show accuracy when counting a group of up to 5 objects. | I can understand that 'zero' and the numeral '0' represents 'nothing'.<br>I can discuss composition of numbers to 5, showing some automatic recall of number facts.<br>I can understand there are different ways to make numbers up to 10.<br>I can recognise numbers to 10.<br>I can count an irregular arrangement of up to ten objects.<br>I can begin to explore number bonds to 10.<br>I can subitise to 4. | |
| Numerical Pattern | | I can begin to recite numbers to 20 confidently.<br>I can count back from 10. | I can use the language of 'more', 'fewer' and 'equal' to compare two sets of objects. | |

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| | | I can compare groups of objects up to 3.<br>I can understand the term equal when comparing two groups of objects.<br>I can demonstrate understanding of the cardinality when counting objects.<br>I can show an understanding of one more and one less with numbers up to 5. | I can find the total number of items in two groups by counting all of them and starting to use 'counting on'.<br>I can recite numbers to 20.<br>I can understand 'one more' and 'one less' to numbers up to 10.<br>I can begin to show some understanding of doubling. | |
| Space, Shape and Measure | | I can use comparative language like taller, shorter, the same and compare items according to these criteria.<br>I can start to identify shapes in the environment- circles, triangles and 4 sided shapes.<br>I can begin to talk about night and day and order key events in my own daily routine.<br>I can recite the days of the week.<br>I can recognise and talk about simple patterns.<br>I can begin to use positional language such as above, below, under, over, behind, in front of, next to, in and on.<br>I can match and sort objects based on their properties such as size, colour, shape, etc. | I can show an understanding of yesterday, today and tomorrow.<br>I can experiment with length, height, capacity and use my findings to order and group items.<br>I can order and sequence important times in my day and use language such as now, before, later, soon, after, then and next.<br>I can recall names for 2D and 3D shapes and begin to use some of the terms to describe their properties.<br>I can begin to explore more complex patterns. | I can use everyday language to discuss length, size, height, weight, time, position and capacity and use this language to make simple observations.<br>I can understand and use some mathematical language to describe 2D and 3D shapes with support.<br>I know some common 2D and 3D shapes.<br>I can create, copy and continue a simple pattern and some more complex patterns.<br>I can select, rotate and manipulate shapes in order to develop spatial reasoning skills. |

Key Stage 1 and 2

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| **Number and Place Value** | | | | | | |
| **Counting** | count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br><br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>given a number, identify one more and one less | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward | count from 0 in multiples of 4, 8, 50 and 100;<br><br>find 10 or 100 more or less than a given number | count backwards through zero to include negative numbers<br><br>count in multiples of 6, 7, 9, 25 and 1 000<br><br>find 1 000 more or less than a given number | interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br><br>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 | use negative numbers in context, and calculate intervals across zero |
| **Comparing numbers** | use the language of: equal to, more than, less than (fewer), most, least | compare and order numbers from 0 up to 100; use q, G and = signs | compare and order numbers up to 1 000 | order and compare numbers beyond 1 000<br><br>*compare numbers with the same number of decimal places up to two decimal places* (copied from Fractions) | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) |

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| **Identifying, representing, and** | identify and represent numbers using objects and pictorial representations including the number line | identify, represent and estimate numbers using different representations, including the number line | identify, represent and estimate numbers using different representations | identify, represent and estimate numbers using different representations | | |
| **Reading and writing numbers (including roman numerals).** | read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words | read and write numbers up to 1 000 in numerals and in words<br><br>*tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks* (copied from Measurement) | 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, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)<br><br>read Roman numerals to 1 000 (M) and recognise years written in Roman numerals. | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value) |
| **Understanding place value** | | 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) | recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br><br>*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 units, tenths and hundredths* (copied from Fractions) | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)<br><br>*recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents* (copied from Fractions) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)<br><br>*identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1 000 where the answers are up to three decimal places* (copied from Fractions) |

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| **Rounding** | | | | round any number to the nearest 10, 100 or 1 000<br><br>*round decimals with one decimal place to the nearest whole number*<br>(copied from Fractions) | round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000<br><br>*round decimals with two decimal places to the nearest whole number and to one decimal place*<br>(copied from Fractions) | round any whole number to a required degree of accuracy<br><br>*solve problems which require answers to be rounded to specified degrees of accuracy*<br>(copied from Fractions) |
| **Problem solving** | | 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 |
| **Addition and Subtraction** | | | | | | |
| **Number bonds** | 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 | | | | |
| **Mental calculation** | add and subtract one-digit and two-digit numbers to 20, including zero | add and subtract numbers using concrete objects, pictorial representations, and mentally, including:<br>* a two-digit number and ones<br>* a two-digit number and tens<br>* two two-digit numbers<br>adding three one-digit numbers | 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 | | add and subtract numbers mentally with increasingly large numbers | perform mental calculations, including with mixed operations and large numbers |

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| **Mental calculation** | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) | show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | | | | use their knowledge of the order of operations to carry out calculations involving the four operations |
| **Written methods** | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) | | add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | |
| **Inverse operations, estimating and** | | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | 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, levels of accuracy. |

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| **Problem Solving** | 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:<br>* using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>applying their increasing knowledge of mental and written methods<br><br>*solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change* (copied from Measurement) | solve problems, including missing number problems, using number facts, place value, and more complex addition and 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 | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br><br>Solve problems involving addition, subtraction, multiplication and division |
| **Multiplication and Division** | | | | | | |
| **Multiplication and division** | *count in multiples of twos, fives and tens* (copied from Number and Place Value) | *count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward* (copied from Number and Place Value) | *count from 0 in multiples of 4, 8, 50 and 100* (copied from Number and Place Value) | *count in multiples of 6, 7, 9, 25 and 1 000* (copied from Number and Place Value) | *count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000* (copied from Number and Place Value) | |
| **Multiplication and division facts** | | 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 × 12 | | |

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| **Mental calculation** | | | 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 (appears also in 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 | multiply and divide numbers mentally drawing upon known facts | perform mental calculations, including with mixed operations and large numbers |
| **Mental calculation** | | show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot | | recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers) | multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | *associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)* (copied from Fractions) |
| **Written calculation** | | calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) 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 and progressing to formal written methods (appears also in 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 | 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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| Written calculation | | | | | 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 | divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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<br><br>*use written division methods in cases where the answer has up to two decimal places* (copied from Fractions (including decimals)) |

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| **Properties of number: multiples, factors, square and cube numbers** | | | | recognise and use factor pairs and commutativity in mental calculations (repeated) | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br><br>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br><br>establish whether a number up to 100 is prime and recall prime numbers up to 19<br><br>recognise and use square numbers and cube numbers, and the notation for squared ($^2$) and cubed ($^3$) | identify common factors, common multiples and prime numbers<br><br>*use common factors to simplify fractions; use common multiples to express fractions in the same denomination*<br>(copied from Fractions)<br><br>*calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ($cm^3$) and cubic metres ($m^3$), and extending to other units such as $mm^3$ and $km^3$*<br>(copied from Measures) |
| **Order of operations** | | | | | | use their knowledge of the order of operations to carry out calculations involving the four operations |
| **Inverse operations,** | | | *estimate the answer to a calculation and use inverse operations to check answers*<br>(copied from Addition and Subtraction) | *estimate and use inverse operations to check answers to a calculation*<br>(copied from Addition and Subtraction) | | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy |

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| **Problem solving** | 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 | solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts | 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 | 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 | solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes<br><br>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign<br><br>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates | solve problems involving addition, subtraction, multiplication and division<br><br>*solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion) |
| **Fractions (including decimals and percentages)** | | | | | | |

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| Counting in fractional steps | | *Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)* | count up and down in tenths | count up and down in hundredths | | |
| Recognising fractions | recognise, find and name a half as one of two equal parts of an object, shape or quantity<br><br>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity | recognise, find, name and write fractions $^1/_3$, $^1/_4$, $^2/_4$ 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><br>recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.<br><br>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence) | |
| Comparing fractions | | | compare and order unit fractions, and fractions with the same denominators | | compare and order fractions whose denominators are all multiples of the same number | compare and order fractions, including fractions ›1 |
| Comparing | | | | compare numbers with the same number of decimal places up to two decimal places | read, write, order and compare numbers with up to three decimal places | identify the value of each digit in numbers given to three decimal places |

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| **Rounding including** | | | | round decimals with one decimal place to the nearest whole number | 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 |
| **Equivalence (including fractions, decimals and percentages).** | | write simple fractions e.g. $^1/_2$ 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><br>recognise and write decimal equivalents of any number of tenths or hundredths<br><br>recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$ | identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br><br>read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$)<br><br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br><br>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 as a decimal fraction | use common factors to simplify fractions; use common multiples to express fractions in the same denomination<br><br>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)<br><br>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |

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| Addition and subtraction of fractions | | | add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + {}^1/_7 = {}^6/_7$) | add and subtract fractions with the same denominator | add and subtract fractions with the same denominator and multiples of the same number<br><br>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements G 1 as a mixed number (e.g. $^2/_5 + {}^4/_5 = {}^6/_5 = 1{}^1/_5$) | add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions |
| Multiplication and division of fractions | | | | | multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$)<br><br>multiply one-digit numbers with up to two decimal places by whole numbers<br><br>divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$) |

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| Multiplication and division of decimals | | | | 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 | | multiply one-digit numbers with up to two decimal places by whole numbers<br><br>multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places<br><br>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places<br><br>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)<br><br>use written division methods in cases where the answer has up to two decimal places |

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| Problem solving | | | solve problems that involve all of the above | 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<br><br>solve simple measure and money problems involving fractions and decimals to two decimal places. | solve problems involving numbers up to three decimal places<br><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. | |
| Ratio and Proportion | | | | | | |

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| | | | | | | solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br><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<br><br>solve problems involving similar shapes where the scale factor is known or can be found<br><br>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |
| Measurement | | | | | | |

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| **Comparing and estimating** | compare, describe and solve practical problems for:<br>* lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]<br>* mass/weight [e.g. heavy/light, heavier than, lighter than]<br>* capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]<br>time [e.g. quicker, slower, earlier, later]<br><br>sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and order lengths, mass, volume/capacity and record the results using G, q and =<br><br>compare and sequence intervals of time | compare durations of events, for example to calculate the time taken by particular events or tasks<br><br>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time) | estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring) | calculate and compare the area of squares and rectangles including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and estimate the area of irregular shapes (also included in measuring)<br><br>estimate volume (e.g. using 1 $cm^3$ blocks to build cubes and cuboids) and capacity (e.g. using water) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ($cm^3$) and cubic metres ($m^3$), and extending to other units such as $mm^3$ and $km^3$. |

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| **Measuring and Calculating** | measure and begin to record the following:<br>* **lengths and heights**<br>* **mass/weight**<br>* **capacity and volume**<br>* **time** (hours, minutes, seconds**)** | 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)<br><br>measure the **perimeter** of simple 2-D shapes | estimate, compare and calculate **different measures,** including **money in pounds and pence** (appears also in Comparing)<br><br>measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres | use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling.<br><br>measure and calculate the **perimeter** of composite rectilinear shapes in centimetres and metres | solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate (appears also in Converting)<br><br>recognise that shapes with the same areas can have different **perimeters** and vice versa |
| **Measuring and calculating** | recognise and know the value of different denominations of **coins and notes** | recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular value<br><br>find different combinations of coins that equal the same amounts of money<br><br>**solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change | 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 | calculate and compare the area of squares and rectangles including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and estimate the area of irregular shapes<br><br>*recognise and use square numbers and cube numbers, and the notation for squared ($^2$) and cubed ($^3$)*<br>(copied from Multiplication and Division) | calculate the area of parallelograms and triangles<br><br>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ($cm^3$) and cubic metres ($m^3$), and extending to other units [e.g. $mm^3$ and $km^3$].<br><br>recognise when it is possible to use formulae for area and volume of shapes |

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| **Telling the time** | tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.<br><br>recognise and use language relating to dates, including days of the week, weeks, months and years | 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.<br><br>know the number of minutes in an hour and the number of hours in a day. (appears also in Converting) | tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br><br>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating) | read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)<br><br>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting) | solve problems involving converting between units of time | |

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| Converting | | know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time) | know the number of seconds in a minute and the number of days in each month, year and leap year | convert between different units of measure (e.g. kilometre to metre; hour to minute)<br><br>read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)<br><br>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time) | convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)<br><br>solve problems involving converting between units of time<br><br>understand and use 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<br><br>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)<br><br>convert between miles and kilometres |
| Geometry – property of shapes | | | | | | |

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| **Identifying shapes and their properties** | recognise and name common 2-D and 3-D shapes, including:<br>* 2-D shapes [e.g. rectangles (including squares), circles and triangles]<br>* 3-D shapes [e.g. 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<br><br>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br><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] | | identify lines of symmetry in 2-D shapes presented in different orientations | identify 3-D shapes, including cubes and other cuboids, from 2-D representations | recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)<br><br>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| **Drawing and constructing** | | | draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | complete a simple symmetric figure with respect to a specific line of symmetry | draw given angles, and measure them in degrees ($^{\circ}$) | draw 2-D shapes using given dimensions and angles<br><br>recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties) |

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| **Comparing and classifying** | | compare and sort common 2-D and 3-D shapes and everyday objects | | compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>distinguish between regular and irregular polygons based on reasoning about equal sides and angles | compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons |
| **Angles** | | | recognise angles as a property of shape or a description of a turn<br><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<br><br>identify horizontal and vertical lines and pairs of perpendicular and parallel lines | 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><br>identify:<br>* angles at a point and one whole turn (total 360°)<br>* angles at a point on a straight line and ½ a turn (total 180°)<br>* other multiples of 90° | recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |
| **Geometry – position and direction** | | | | | | |

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| **Position, direction and movement** | describe position, direction and movement, including half, quarter and three-quarter turns. | 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<br><br>describe movements between positions as translations of a given unit to the left/right and up/down<br><br>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) |
| **Pattern** | | order and arrange combinations of mathematical objects in patterns and sequences | | | | |
| **Statistics** | | | | | | |

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| Interpreting, constructing and presenting data | | interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br><br>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br><br>ask and answer questions about totaling and comparing categorical data | 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 | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems |
| Solving problems | | | solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | 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 | calculate and interpret the mean as an average |
| Algebra | | | | | | |

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| **Equations** | *solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and* ***missing number problems*** *such as 7 = □ - 9* (copied from Addition and Subtraction)<br><br>*represent and use number bonds and related subtraction facts within 20* (copied from Addition and Subtraction) | *recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.* (copied from Addition and Subtraction)<br><br>*recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100* (copied from Addition and Subtraction) | solve problems, *including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction)<br><br>*solve problems, including* ***missing number*** *problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division) | | *use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** (copied from Geometry: Properties of Shapes) | express missing number problems algebraically<br><br>find pairs of numbers that satisfy number sentences involving two unknowns<br><br>enumerate all possibilities of combinations of two variables |
| **Formulae** | | | | *Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. (Copied from NSG measurement)* | | use simple formulae<br><br>*recognise when it is possible to use* ***formulae*** *for area and volume of shapes* (copied from Measurement) |

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| **Sequences** | *sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening*<br>(copied from Measurement) | *compare and sequence intervals of time*<br>(copied from Measurement)<br><br>*order and arrange combinations of mathematical objects in patterns*<br>(copied from Geometry: position and direction) | | | | generate and describe linear number sequences |