



Maths Curriculum Progression Map

Number and Place Value

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation	<p>Early Learning Goal: Number: Children at the expected level of development will: <i>Have a deep understanding of number to 10, including the composition of each number; 14 - Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.</i></p> <p>Early Learning Goal: Numerical Patterns: Children at the expected level of development will: <i>Verbally count beyond 20, recognising the pattern of the counting system; - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</i></p>	greater less equal more fewer subitise longer shorter heavier lighter odd even
Year 1	<p>Count within 100, forwards and backwards, starting with any number. Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =</p> <p><i>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number read and write numbers from 1 to 20 in numerals and words count, read and write numbers to 100 in numerals identify and represent numbers using objects and pictorial representations including the number line use the language of: equal to, more than, less than (fewer), most, least</i></p>	number line halfway estimate
Year 2	<p>Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning. Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.</p> <p><i>recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words use place value and number facts to solve problems</i></p>	ones tens ___ groups of ten and ___ additional ones partition value midpoint
Year 3	<p>Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning. Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.</p> <p><i>recognise the place value of each digit in a three-digit number (hundreds, tens, ones) identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words</i></p>	hundreds multiples compose standard partitioning non-standard partitioning previous/next multiple nearest multiple scale intervals



	<p>solve number problems and practical problems involving these ideas compare and order numbers up to 1000</p>	
<p>Year 4</p>	<p>Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning. Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each. Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.</p> <p><i>find 1000 more or less than a given number</i> <i>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</i> <i>order and compare numbers beyond 1000</i> <i>identify, represent and estimate numbers using different representations</i> <i>round any number to the nearest 10, 100 or 1000</i> <i>solve number and practical problems that involve all of the above and with increasingly large positive numbers</i> <i>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</i></p>	<p>thousands round</p>
<p>Year 5</p>	<p>Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning. Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. Convert between units of measure, including using common decimals and fractions.</p> <p><i>Year 3 NC: 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</i> <i>Year 4 NC: Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</i> <i>Year 4 NC: Recognise and write decimal equivalents of any number of tenths or hundredths</i> <i>Year 4 NC: 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</i> <i>Year 4 NC: Round decimals with one decimal place to the nearest whole number</i> <i>Year 4 NC: Compare numbers with the same number of decimal places up to two decimal places</i> <i>Year 4 NC: Solve simple measure and money problems involving fractions and decimals to two decimal places.</i> <i>Year 4 NC: count backwards through zero to include negative numbers</i> <i>Read and write numbers with up to three decimal places</i> <i>Order and compare numbers with up to three decimal places</i> <i>Round decimals with two decimal places to the nearest whole number and to one decimal place</i> <i>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</i> <i>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero</i> <i>Solve number problems and practical problems that involve all of the above</i> <i>Year 6 NC: Use negative numbers in context, and calculate intervals across zero</i> <i>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals</i></p>	<p>tenths hundredths thousandths decimal decimal point whole number regroup exchange</p>



Year 6	<p>Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).</p> <p>Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and nonstandard partitioning.</p> <p>Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.</p> <p>Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.</p> <p><i>Year 5 NC: Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</i></p> <p><i>Year 5 NC: Determine the value of each digit in numbers to at least 1 000 000</i></p> <p><i>Year 5 NC: Order and compare numbers to at least 1 000 000</i></p> <p><i>Year 5 NC: Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</i></p> <p><i>Count forwards or backwards in steps of integers, decimals or powers of 10 for any number</i></p> <p><i>Read and write numbers up to 10 000 000</i></p> <p><i>Determine the value of each digit in numbers up to 10 000 000</i></p> <p><i>Identify the value of each digit to three decimal places</i></p> <p><i>Identify, represent and estimate numbers using the number line</i></p> <p><i>Order and compare numbers up to 10 000 000</i></p> <p><i>Order and compare numbers including integers, decimals and negative numbers</i></p> <p><i>Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number</i></p> <p><i>Round any whole number to a required degree of accuracy</i></p> <p><i>Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</i></p> <p><i>Solve number and practical problems that involve all of the above</i></p>	<p>significant digit</p> <p>number system</p> <p>ten-thousands</p> <p>hundred-thousands</p> <p>millions</p> <p>ten-millions</p>
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Addition and Subtraction

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		
Year 1	<p>Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.</p> <p>Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.</p> <p><i>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</i></p> <p><i>add and subtract one-digit and two-digit numbers to 20, including zero</i></p> <p><i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = _ - 9$</i></p>	<p>part</p> <p>whole</p> <p>add</p> <p>subtract</p> <p>addend</p> <p>sum</p> <p>commutative</p> <p>inverse</p>



	<p>Year 2 NC: show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>Year 2 NC: recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p>	<p>expression equation</p>
<p>Year 2</p>	<p>Add and subtract across 10. Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?". Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number. Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.</p> <p>solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing knowledge of mental and written methods <p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers 	<p>minuend subtrahend difference</p>
<p>Year 3</p>	<p>Calculate complements to 100. Add and subtract up to three-digit numbers using columnar methods. Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.</p> <p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds <p>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p> <p>estimate the answer to a calculation and use inverse operations to check answers</p> <p>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>redistribute adjust regroup exchange</p>
<p>Year 4</p>	<p>Extend columnar addition and subtraction methods to four-digit numbers</p> <p>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>estimate and use inverse operations to check answers to a calculation</p> <p>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p>	
<p>Year 5</p>	<p>Extend columnar addition and subtraction methods to numbers with up to 2 decimal places</p> <p>Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places</p> <p>Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction)</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>	
<p>Year 6</p>	<p>Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number). Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. Solve problems involving ratio relationships.</p>	<p>additive variable unknown formula sequence</p>



Solve problems with 2 unknowns.

Perform mental calculations, including with mixed operations and large numbers and decimals

Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Use their knowledge of the order of operations to carry out calculations involving the four operations

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Solve problems involving addition, subtraction, multiplication and division, including those with missing numbers

Express missing number problems algebraically

Use simple formulae

Generate and describe linear number sequences

Find pairs of numbers that satisfy an equation with two unknowns

Enumerate possibilities of combinations of two variables



Multiplication and Division

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		
Year 1	<p><i>count in multiples of twos, fives and tens</i> <i>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</i></p>	<p>groups skip count</p>
Year 2	<p>Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).</p> <p><i>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs</i> <i>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</i> <i>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</i></p>	<p>factor product multiplication division divisor commutative</p>
Year 3	<p>Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.</p>	<p>quotitive (grouping) partitive (sharing)</p>
Year 4	<p>Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. Understand and apply the distributive property of multiplication.</p> <p><i>Year 3 NC: 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.</i> <i>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</i> <i>recognise and use factor pairs and commutativity in mental calculations</i> <i>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.</i></p>	<p>distributive remainder</p>



<p>Year 5</p>	<p>Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.</p> <p>Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.</p> <p>Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.</p> <p>Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.</p> <p><i>Year 3 NC: 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</i></p> <p><i>Year 4 NC: multiply two-digit and three-digit numbers by a one-digit number using formal written layout</i></p> <p><i>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</i></p> <p><i>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</i></p> <p><i>Establish whether a number up to 100 is prime and recall prime numbers up to 19</i></p> <p><i>Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)</i></p> <p><i>Multiply and divide numbers mentally drawing upon known facts</i></p> <p><i>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</i></p> <p><i>Multiply numbers up to 4 digits by a one-digit number using a formal written method</i></p> <p><i>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</i></p> <p><i>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</i></p> <p><i>Year 6 NC: Multiply one-digit numbers with up to two decimal places by whole numbers</i></p> <p><i>Year 6 NC: Identify common factors, common multiples and prime numbers</i></p>	<p>scaling prime composite squared cubed factor pair common factors common multiples</p>
<p>Year 6</p>	<p>Represent multiplication of a number with up to 4 digits by a 2-digit whole number using the formal written method of long division</p> <p>Use short division to express remainders as a decimal fraction.</p> <p>Divide any whole number with up to 4 digits by a 2-digit number, recording using either short or long division.</p> <p><i>Year 5 NC: Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</i></p> <p><i>Year 5 NC: Multiply numbers up to 4 digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers</i></p> <p><i>Perform mental calculations, including with mixed operations and large numbers</i></p> <p><i>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</i></p> <p><i>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</i></p> <p><i>Use written division methods in cases where the answer has up to two decimal places</i></p> <p><i>Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</i></p> <p><i>Solve problems involving addition, subtraction, multiplication and division</i></p> <p><i>Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts</i></p> <p><i>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples</i></p> <p><i>Solve problems involving similar shapes where the scale factor is known or can be found</i></p>	<p>multiplicative similar scale factor ratio</p>



Number Facts

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		
Year 1	<p>Develop fluency in addition and subtraction facts within 10. Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.</p> <p><i>represent and use number bonds and related subtraction facts within 20</i> <i>count in multiples of twos, fives and tens</i></p>	
Year 2	<p>Secure fluency in addition and subtraction facts within 10, through continued practice.</p> <p><i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</i> <i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i> <i>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</i></p>	
Year 3	<p>Secure fluency in addition and subtraction facts that bridge 10, through continued practice. Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).</p> <p><i>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</i></p>	
Year 4	<p>Recall multiplication and division facts up to 12 x 12, and recognise products in multiplication tables as multiples of the corresponding number. Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context. Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)</p> <p><i>count in multiples of 6, 7, 9, 25 and 1000</i> <i>recall multiplication and division facts for multiplication tables up to 12 x 12</i></p>	
Year 5	<p>Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).</p>	
Year 6		



Fractions

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		equal unequal group
Year 1		
Year 2	<p>NC Year 1: recognise, find and name a half as one of two equal parts of an object, shape or quantity NC Year 1: recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$.</p>	quarter half fraction
Year 3	<p>Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. Find unit fractions of quantities using known division facts (multiplication tables fluency). Reason about the location of any fraction within 1 in the linear number system. Add and subtract fractions with the same denominator, within 1.</p> <p>recognise, find and write fractions of a discrete set of objects: unit fractions recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators add and subtract fractions with the same denominator within one whole compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above</p>	numerator denominator unit fraction non-unit fraction
Year 4	<p>Reason about the location of mixed numbers in the linear number system. Convert mixed numbers to improper fractions and vice versa. Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.</p> <p>add and subtract fractions with the same denominator Year 5 NC: Recognise mixed numbers and improper fractions and convert from one form to the other Year 5 NC: Write mathematical statements >1 as a mixed number</p>	mixed number improper fraction
Year 5	<p>Find non-unit fractions of quantities. Find equivalent fractions and understand that they have the same value and the same position in the linear number system. Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.</p> <p>Year 3 NC: recognise, find and write fractions of a discrete set of objects: non-unit fractions Year 3 NC: recognise and show, using diagrams, equivalent fractions with small denominators Year 4 NC: recognise and show, using diagrams, families of common equivalent fractions</p>	equivalent



	<p>Year 4 NC: 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</p> <p>recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</p> <p>Read and write decimal numbers as fractions</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>Solve problems involving number up to three decimal places</p> <p>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 with a denominator of a multiple of 10 or 25</p>	
Year 6	<p>Recognise when fractions can be simplified, and use common factors to simplify fractions.</p> <p>Express fractions in a common denominator and use this to compare fractions that are similar in value.</p> <p>Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.</p> <p>Year 5 NC: Compare and order fractions whose denominators are all multiples of the same number</p> <p>Year 5 NC: Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams)</p> <p>Year 5 NC: 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</p> <p>Year 5 NC: 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 with a denominator of a multiple of 10 or 25</p> <p>Compare and order fractions, including fractions >1</p> <p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</p> <p>Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>Multiply simple pairs of proper fractions, writing the answer in its simplest form</p> <p>Divide proper fractions by whole numbers</p>	<p>simplify</p> <p>common denominator</p> <p>reasoning</p> <p>per cent (%)</p>

Geometry

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		



<p>Year 1</p>	<p>Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.</p> <p>recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] <p>describe position, direction and movement, including whole, half, quarter and three-quarter turns</p>	<p>rectangle triangle cuboid pyramid sides straight curved</p>
<p>Year 2</p>	<p>Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.</p> <p>Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces Identify 2D shapes on the surface of 3D shapes (for example, a circle on a cylinder and a triangle on a pyramid) Compare and sort common 2D and 3D shapes and everyday objects order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</p>	<p>sides vertex/vertices quadrilateral, rectangle, square, pentagon, hexagon faces edges cuboid, prism, cone, sphere, cylinder pyramid, square-based, triangle-based shape size</p>
<p>Year 3</p>	<p>Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations. Draw polygons by joining marked points, and identify parallel and perpendicular sides.</p> <p>draw 2-D shapes recognise angles as a property of shape or a description of a turn identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p>angle right angle parallel perpendicular horizontal vertical</p>
<p>Year 4</p>	<p>Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.</p> <p>identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry Year 6 NC: Distinguish between regular and irregular polygons based on reasoning about equal sides and angles describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon Year 5 NC: Describe positions on the first quadrant of a coordinate grid Year 5 NC: Plot specified points and complete shape Year 5 NC: 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</p>	<p>translate coordinate origin axes x-axis y-axis regular polygon irregular polygon line symmetry symmetrical reflect mirror line</p>



Year 5	<p>Year 4 NC: identify acute and obtuse angles and compare and order angles up to two right angles by size Use the properties of rectangles to deduce related facts and find missing lengths and angles Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees (°) Identify:</p> <ul style="list-style-type: none"> - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and 1/2 a turn (total 180°) - other multiples of 90° 	<p>acute obtuse reflex degrees whole turn/point half turn/straight line</p>
Year 6	<p>Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.</p> <p>Year 3 NC: make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them Year 4 NC: compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Year 5 NC: Identify 3-D shapes, including cubes and other cuboids, from 2-D representations Compare and classify geometric shapes based on their properties and sizes Draw 2-D shapes using given dimensions and angles Recognise, describe and build simple 3-D shapes, including making nets Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Find unknown angles in any triangles, quadrilaterals, and regular polygons Describe positions on the full coordinate grid (all four quadrants) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</p>	<p>compound shape net properties classify radius diameter circumference</p>

Measurement

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		
Year 1	<p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • time [for example, quicker, slower, earlier, later] <p>measure and begin to record the following:</p> <ul style="list-style-type: none"> • lengths and heights • time (hours, minutes, seconds) 	<p>long/short longer/shorter double/half heavy/light heavier/lighter full/empty more than/less than half full/quarter full</p>



	<p>recognise and know the value of different denominations of coins and notes</p> <p>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>recognise and use language relating to dates, including days of the week, weeks, months and years</p> <p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</p>	<p>quicker</p> <p>slower</p> <p>earlier</p> <p>later</p> <p>hours</p> <p>minutes</p> <p>seconds</p> <p>before/after</p> <p>next</p> <p>first</p> <p>today/yesterday/tomorrow</p> <p>afternoon/morning/evening</p>
Year 2	<p>Year 1 NC: measure and begin to record: mass/weight, capacity, volume</p> <p>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p> <p>compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$</p> <p>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>find different combinations of coins that equal the same amounts of money</p> <p>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <p>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</p> <p>know the number of minutes in an hour and the number of hours in a day</p>	<p>pounds</p> <p>pence</p> <p>change</p>
Year 3	<p>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours;</p> <p>use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight</p> <p>know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>compare durations of events [for example to calculate the time taken by particular events or tasks].</p>	<p>year</p> <p>leap year</p> <p>o'clock</p> <p>a.m./p.m</p> <p>noon</p> <p>midnight</p>
Year 4	<p>Find the perimeter of regular and irregular polygons.</p> <p>Year 3 NC: measure the perimeter of simple 2-D shapes</p> <p>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Year 5 NC: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p>	<p>perimeter</p>
Year 5	<p>Compare areas and calculate the area of rectangles (including squares) using standard units.</p> <p>Year 4 NC: add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>Year 4 NC: Convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <p>Year 4 NC: find the area of rectilinear shapes by counting squares</p> <p>Year 4 NC: estimate, compare and calculate different measures, including money in pounds and pence</p> <p>Understand and use approximate equivalences between metric and common imperial units such as inches, pounds and pints</p> <p>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes</p> <p>Estimate (and calculate) volume (for example, using 1 cm^3 blocks to build cuboids (including cubes)) and capacity (for example, using water)</p> <p>Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation including scaling</p> <p>Solve problems involving converting between units of time</p>	<p>imperial</p> <p>inches</p> <p>pounds</p> <p>pints</p> <p>miles</p> <p>area</p> <p>volume</p>



	<p><i>Year 6 NC: Use, read and write standard units of length, mass and volume using decimal notation to three decimal places</i></p> <p><i>Year 6 NC: Calculate and estimate volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³) and extending to other units (for example, mm³ and km³)</i></p> <p><i>Year 6 NC: Compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³) and extending to other units (for example, mm³ and km³)</i></p> <p><i>Year 6 NC: 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</i></p> <p><i>Year 6 NC: Convert between miles and kilometres</i></p> <p><i>Year 6 NC: Use, read and write standard units of time</i></p> <p><i>Year 6 NC: 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</i></p>	
Year 6	<p><i>Recognise that shapes with the same areas can have different perimeters and vice versa</i></p> <p><i>Calculate the area of parallelograms and triangles</i></p> <p><i>Recognise when it is possible to use the formulae for area and volume of shapes</i></p>	parallelogram formula

Statistics

Year group	National Curriculum, key skills and knowledge	Key vocabulary
Foundation		
Year 1		
Year 2	<p><i>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</i></p> <p><i>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</i></p> <p><i>ask and answer questions about totalling and comparing categorical data</i></p>	total pictogram tally chart block diagram table



Year 3	<i>interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.</i>	bar chart
Year 4	<i>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</i>	time graph
Year 5	<i>Complete, read and interpret information in tables, including timetables Solve comparison, sum and difference problems using information presented in all types of graph including a line graph</i>	timetable line graph
Year 6	<i>Interpret and construct pie charts and line graphs and use these to solve problems Calculate and interpret the mean as an average</i>	pie chart mean average