

Progression of Skills				
	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<b>Number and place value</b>	<ul style="list-style-type: none"> <li>Recognise the place value of each digit in a three-digit number (hundreds, tens, and ones).</li> <li>Identify, represent and estimate numbers using different representations. Read and write numbers up to 1,000 in numerals and in words.</li> <li>Compare and order numbers up to 1,000.</li> <li>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</li> <li>Solve number problems and practical problems involving these ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</li> <li>Round any number to the nearest 10, 100 or 1,000.</li> <li>Count in multiples of 6, 7, 9, 25 and 1,000.</li> <li>Identify, represent and estimate numbers using different representations.</li> <li>Order and compare numbers beyond 1,000.</li> <li>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.</li> <li>Find 1,000 more or less than a given number.</li> </ul>	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit (10,000). Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.</li> <li>Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 (10, 100 and 1,000).</li> <li>Solve number problems and practical problems that involve all of the above.</li> <li>Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.</li> <li>Interpret negative numbers in context,</li> </ul>	<ul style="list-style-type: none"> <li>Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</li> <li>Solve number and practical problems that involve all of the above.</li> <li>Round any whole number to a required degree of accuracy.</li> <li>Use negative numbers in context, and calculate intervals across zero.</li> </ul>

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		<ul style="list-style-type: none"> <li>• Round any number to the nearest 10, 100 or 1,000.</li> <li>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</li> <li>• Count backwards through zero to include negative numbers.</li> </ul>	count forwards and backwards with positive and negative whole numbers, including through zero.	
<b>Addition and subtraction</b>	<ul style="list-style-type: none"> <li>• Add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds.</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</li> <li>• Add and subtract numbers with up to three digits, using formal written</li> </ul>	<ul style="list-style-type: none"> <li>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</li> <li>• Estimate and use inverse operations to check answers to a calculation.</li> <li>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<ul style="list-style-type: none"> <li>• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).</li> <li>• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> <li>• Add and subtract numbers mentally with increasingly large numbers.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform mental calculations, including with mixed operations and large numbers.</li> <li>• Use their knowledge of the order of operations to carry out calculations involving the four operations.</li> <li>• Solve problems involving addition, subtraction, multiplication and division.</li> </ul>

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	<p>methods of columnar addition and subtraction.</p> <ul style="list-style-type: none"> <li>Estimate the answer to a calculation and use inverse operations to check answers.</li> </ul>		<ul style="list-style-type: none"> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	
<b>Multiplication and division</b>	<p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects.</p>	<ul style="list-style-type: none"> <li>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math>.</li> <li>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.</li> <li>Count in multiples of 6, 7, 9, 25 and 1,000.</li> <li>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math>.</li> <li>Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit</li> </ul>	<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</li> <li>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> <li>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</li> <li>Know and use the vocabulary of prime numbers, prime factors and</li> </ul>	<ul style="list-style-type: none"> <li>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</li> <li>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.</li> <li>Identify common factors, common multiples and prime numbers.</li> <li>Use their knowledge of the order of operations to carry</li> </ul>

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		<p>numbers by one digit, integer scaling problems and harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects.</p> <ul style="list-style-type: none"> <li>• Recognise and use factor pairs and commutativity in mental calculations.</li> <li>• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</li> </ul>	<p>composite (non-prime) numbers.</p> <ul style="list-style-type: none"> <li>• Recognise and use square numbers and cube numbers, and the notation for squared (<math>2^2</math>) and cubed (<math>3^3</math>).</li> <li>• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.</li> <li>• 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.</li> <li>• Multiply and divide numbers mentally drawing upon known facts.</li> </ul>	<p>out calculations involving the four operations.</p> <ul style="list-style-type: none"> <li>• Perform mental calculations, including with mixed operations and large numbers.</li> <li>• Solve problems involving addition, subtraction, multiplication and division.</li> </ul>
<b>Fractions including decimals and percentages.</b>	<ul style="list-style-type: none"> <li>• Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</li> </ul>	<ul style="list-style-type: none"> <li>• Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and</li> </ul>	<ul style="list-style-type: none"> <li>• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</li> </ul>	<ul style="list-style-type: none"> <li>• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</li> </ul>

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	<ul style="list-style-type: none"> <li>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.</li> <li>Compare and order unit fractions, and fractions with the same denominators.</li> <li>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>Solve problems that involve all of the above.</li> <li>Recognise and show, using diagrams, equivalent fractions with small denominators.</li> <li>Add and subtract fractions with the same denominator within one whole .</li> <li></li> </ul>	<p>dividing tenths by ten.</p> <ul style="list-style-type: none"> <li>Recognise and show, using diagrams, families of common equivalent fractions.</li> <li>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.</li> <li>Add and subtract fractions with the same denominator.</li> <li>Recognise and write decimal equivalents of any number of tenths or hundredths.</li> <li>Solve simple measure and money problems involving fractions and decimals to two decimal places.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number.</li> <li>Compare and order fractions whose denominators are all multiples of the same number.</li> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number.</li> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</li> <li>Read, write, order and compare numbers with up to three decimal places.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and order fractions, including fractions <math>&gt; 1</math>.</li> <li>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>Multiply simple pairs of proper fractions, writing the answer in its simplest form.</li> <li>Divide proper fractions by whole numbers.</li> <li>Use their knowledge of the order of operations to carry out calculations involving the four operations.</li> <li>Use written division methods in cases where the answer has up to two decimal places.</li> <li>Identify the value of each digit in numbers given to three decimal places</li> </ul>
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		<ul style="list-style-type: none"> <li>• 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.</li> <li>• Recognise and write decimal equivalents of any number of tenths or hundredths.</li> <li>• Compare numbers with the same number of decimal places up to two decimal places.</li> <li>• Round decimals with one decimal place to the nearest whole number.</li> <li>• Recognise and write decimal equivalents to 1 quarter , 1 half and 3 quarters.</li> </ul>	<ul style="list-style-type: none"> <li>• Read and write decimal numbers as fractions.</li> <li>• Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>• 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..</li> <li>• Solve problems which require knowing percentage and decimal equivalents of 1 half , 1 quarter , 1 fifth , 2 fifths , 4 fifths and those fractions with a denominator of a multiple of 10 or 25.</li> <li>• Solve problems involving number up to three decimal places.</li> </ul>	<p>and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places.</p> <ul style="list-style-type: none"> <li>• Associate a fraction with division and calculate decimal fraction equivalents.</li> <li>• Use written division methods in cases where the answer has up to two decimal places.</li> <li>• Multiply one-digit numbers with up to two decimal places by whole numbers.</li> <li>• Solve problems which require answers to be rounded to specified degrees of accuracy.</li> <li>• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> <li>• Solve problems involving the</li> </ul>
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			<ul style="list-style-type: none"> <li>• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>• Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.</li> </ul>	<p>calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison.</p> <ul style="list-style-type: none"> <li>• Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison.</li> <li>• Multiply one-digit numbers with up to two decimal places by whole numbers.</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>• Add and subtract amounts of money to give change, using both £ and p in practical contexts.</li> <li>• Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</li> </ul>	<ul style="list-style-type: none"> <li>• Convert between different units of measure (for example, kilometre to metre; hour to minute).</li> <li>• Measure and calculate the perimeter of a rectilinear figure (including squares)</li> </ul>	<ul style="list-style-type: none"> <li>• Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</li> <li>• Calculate and compare the area of rectangles (including squares), and</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> </ul>

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	<ul style="list-style-type: none"> <li>• Measure the perimeter of simple 2D shapes.</li> <li>• Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</li> <li>• Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight number of seconds in a minute and the number of days in each month, year and leap year.</li> <li>• Compare durations of events (for example to calculate the time taken by</li> </ul>	<p>in centimetres and metres.</p> <ul style="list-style-type: none"> <li>• Find the area of rectilinear shapes by counting squares.</li> <li>• Estimate, compare and calculate different measures, including money in pounds and pence.</li> <li>• Solve simple measure and money problems involving fractions and decimals to two decimal places.</li> <li>• Read, write and convert time between analogue and digital 12- and 24-hour clocks.</li> </ul>	<p>including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes.</p> <ul style="list-style-type: none"> <li>• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</li> <li>• Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</li> <li>• Understand and use approximate equivalences between metric units and common imperial units such</li> </ul>	<p>notation to up to three decimal places.</p> <ul style="list-style-type: none"> <li>• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</li> <li>• Convert between miles and kilometres.</li> <li>• Recognise that shapes with the same areas can have different perimeters and vice versa.</li> <li>• Recognise when it is possible to use formulae for area and volume of shapes.</li> <li>• Calculate the area of parallelograms and triangles.</li> <li>• Calculate, estimate and compare volume of cubes and cuboids using standard units,</li> </ul>
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	particular events or tasks).		<p>as inches, pounds and pints.</p> <ul style="list-style-type: none"> <li>• Solve problems involving converting between units of time.</li> <li>• Complete, read and interpret information in tables, including timetables.</li> <li>• Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</li> <li>• Estimate volume (for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)) and capacity (for example, using water).</li> </ul>	<p>including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units (for example, mm<sup>3</sup> and km<sup>3</sup>)</p>
	<p><b>Properties of shape and position and direction</b></p>	<ul style="list-style-type: none"> <li>• Recognise angles as a property of shape or a description of a turn.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify acute and obtuse angles and compare and order angles up to two right angles by size.</li> </ul>	<ul style="list-style-type: none"> <li>• Know angles are measured in degrees: estimate and compare acute,</li> <li>• Draw 2D shapes using given dimensions and angles.</li> </ul>

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	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.</li> <li>• Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</li> </ul>	<ul style="list-style-type: none"> <li>• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</li> <li>• Identify lines of symmetry in 2D shapes presented in different orientations.</li> <li>• Complete a simple symmetric figure with respect to a specific line of symmetry.</li> <li>• Describe positions on a 2D grid as coordinates in the first quadrant.</li> <li>• Plot specified points and draw sides to complete a given polygon.</li> <li>• Describe movements between positions as translations of a given unit to the left/right and up/down.</li> <li>•</li> </ul>	<p>obtuse and reflex angles.</p> <ul style="list-style-type: none"> <li>• Identify - angles at a point and one whole turn (total <math>360^\circ</math>) - angles at a point on a straight line and 1 2 a turn (total <math>180^\circ</math>) - other multiples of <math>90^\circ</math>.</li> <li>• Draw given angles, and measure them in degrees (<math>^\circ</math>).</li> <li>• Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>• Identify 3D shapes, including cubes and other cuboids, from 2D representations.</li> <li>• Identify, describe and represent the position of a shape following a reflection or</li> </ul>	<ul style="list-style-type: none"> <li>• Compare and classify geometric shapes based on their properties and sizes, and find unknown angles in any triangles, quadrilaterals and regular polygons.</li> <li>• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</li> <li>• Illustrate and name parts of circles, including radius, diameter and circumference, and know that the diameter is twice the radius.</li> <li>• Recognise, describe and build simple 3D shapes, including making nets.</li> <li>• Describe positions on the full coordinate grid (all four quadrants).</li> </ul>
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			translation, using the appropriate language, and know that the shape has not changed.	<ul style="list-style-type: none"> <li>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>
<b>Statistics</b>	<p>Interpret and present data using bar charts, pictograms and tables.</p> <p>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.</p> <p>Interpret and present data using bar charts, pictograms and tables.</p>	<ul style="list-style-type: none"> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</li> </ul>	<ul style="list-style-type: none"> <li>Complete, read and interpret information in tables, including timetables.</li> <li>Solve comparison, sum and difference problems using information presented in a line graph.</li> </ul>	<ul style="list-style-type: none"> <li>Calculate and interpret the mean as an average.</li> <li>Interpret and construct pie charts and line graphs and use these to solve problems.</li> <li>Solve comparison, sum and difference problems using information presented in a line graph.</li> </ul>
<b>Algebra</b>	N/A	N/A	N/A	<ul style="list-style-type: none"> <li>Use simple formulae.</li> <li>Generate and describe linear number sequences.</li> <li>Express missing number problems algebraically.</li> <li>Enumerate possibilities of combinations of two variables.</li> </ul>

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				<ul style="list-style-type: none"> <li>Express missing number problems algebraically.</li> <li>Find pairs of numbers that satisfy an equation with two unknowns.</li> <li>Enumerate possibilities of combinations of two variables.</li> </ul>
<b>Ratio and Proportion</b>	N/A	N/A	N/A	<ul style="list-style-type: none"> <li>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</li> <li>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> <li>Solve problems involving similar shapes where the scale factor is known or can be found.</li> </ul>

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				<ul style="list-style-type: none"><li>• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li></ul>
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