

Mathematics: Planning and Assessment from National Curriculum Year 1

For statements to be completely embedded they should be demonstrated in a range of contexts and subject areas if applicable.

Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions	Measurement	Geometry: Properties of Shapes
<ul style="list-style-type: none"> ❖ <u>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</u> ❖ <u>Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.</u> ❖ <u>Given a number, identify one more and one less.</u> ❖ <u>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.</u> ❖ <u>Read and write numbers from 1 to 20 in numerals and words.</u> 	<ul style="list-style-type: none"> ❖ <u>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</u> ❖ <u>Represent and use number bonds and related subtraction facts within 20.</u> ❖ <u>Add and subtract one-digit and two-digit numbers to 20, including zero.</u> ❖ <u>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as</u> $7 + \square = 9$; $\square + 3 = 10$ 	<ul style="list-style-type: none"> ❖ <u>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.</u> 	<ul style="list-style-type: none"> ❖ <u>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</u> ❖ <u>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</u> 	<p><i>Compare, describe and solve practical problems for:</i></p> <ul style="list-style-type: none"> ❖ <i>lengths and heights [for example, long/short, longer/shorter, tall/short, double/half];</i> ❖ <i>mass/weight [for example, heavy/light, heavier than, lighter than];</i> ❖ <i>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter];</i> ❖ <i>time [for example, quicker, slower, earlier, later].</i> <p><u>Measure and begin to record the following:</u></p> <ul style="list-style-type: none"> ❖ <u>lengths and heights;</u> ❖ <u>mass/weight;</u> ❖ <u>capacity and volume;</u> ❖ <u>time (hours, minutes, seconds).</u> <ul style="list-style-type: none"> ❖ <u>Recognise and know the value of different denominations of coins and notes.</u> ❖ <u>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].</u> ❖ <u>Recognise and use language relating to dates, including days of the week, weeks, months and years.</u> ❖ <u>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</u> 	<p>Recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> ❖ <u>2-D shapes [for example, rectangles (including squares), circles and triangles];</u> ❖ <u>3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</u>
					Geometry: Position & Direction
					<ul style="list-style-type: none"> ❖ <u>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</u>

Number & Place Value	Addition & Subtraction	Multiplication & Division	Measurement	Geometry: Properties of Shapes
<ul style="list-style-type: none"> ❖ <u>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.</u> ❖ <u>Recognise the place value of each digit in a two-digit number (tens, ones).</u> ❖ <u>Identify, represent and estimate numbers using different representations, including the number line.</u> ❖ <u>Compare and order numbers from 0 up to 100; use <, > and = signs.</u> ❖ <u>Read and write numbers to at least 100 in numerals and in words.</u> ❖ <u>Use place value and number facts to solve problems.</u> 	<p><i>Solve problems with addition and subtraction:</i></p> <ul style="list-style-type: none"> ❖ <u>Using concrete objects and pictorial representations, including those involving numbers, quantities and measures.</u> ❖ <u>Applying their increasing knowledge of mental and written methods.</u> <p><i>Recall and use addition and subtraction facts to 20 and 100:</i></p> <ul style="list-style-type: none"> ❖ <u>fluently up to 20;</u> ❖ <u>related facts to 100.</u> <p><i>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</i></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. <ul style="list-style-type: none"> ❖ Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ❖ <u>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</u> 	<ul style="list-style-type: none"> ❖ <u>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</u> ❖ Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs. ❖ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. ❖ <u>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</u> 	<p><i>Choose and use appropriate standard units to estimate and measure to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels:</i></p> <ul style="list-style-type: none"> ❖ length/height in any direction (m/cm); ❖ mass (kg/g); ❖ temperature ($^{\circ}\text{C}$); ❖ capacity (litres/ml). <ul style="list-style-type: none"> ❖ Compare and order lengths, mass, volume/capacity and record the results using >, < and =. ❖ Recognise and use symbols for pounds (£) and pence (p); ❖ Combine amounts to make a particular value. ❖ Find different combinations of coins that equal the same amounts of money. ❖ <u>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</u> ❖ Compare and sequence intervals of time. ❖ Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. ❖ Know the number of minutes in an hour and number of hours in a day. 	<ul style="list-style-type: none"> ❖ Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. ❖ Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ❖ Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]. ❖ <u>Compare and sort common 2-D and 3-D shapes and everyday objects.</u>
				Geometry: Position & Direction
				<ul style="list-style-type: none"> ❖ Order and arrange combinations of mathematical objects in patterns and sequences. ❖ <u>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).</u>
		Fractions		Statistics
		<ul style="list-style-type: none"> ❖ <u>Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity.</u> ❖ Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. 		<ul style="list-style-type: none"> ❖ Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. ❖ Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ❖ <u>Ask and answer questions about totalling and comparing categorical data.</u>

End of key stage 1: Know number bonds to 20; be precise in using place value; read and spell mathematical vocabulary at a level consistent with their increasing work reading and spelling knowledge at key stage 1.

Mathematics: Planning and Assessment from National Curriculum Year 3

For statements to be completely embedded they should be demonstrated in a range of contexts and subject areas if applicable

Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions	Measurement	Geometry: Properties of Shapes
<ul style="list-style-type: none"> ❖ <u>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</u> ❖ <u>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</u> ❖ <u>Compare and order numbers up to 1000.</u> ❖ <u>Identify, represent and estimate numbers using different representations.</u> ❖ <u>Read and write numbers up to 1000 in numerals and in words.</u> ❖ <u>Solve number problems and practical problems involving these ideas.</u> 	<p><i>Add and subtract numbers mentally, including:</i></p> <ul style="list-style-type: none"> ❖ <u>a three-digit number and ones;</u> ❖ <u>a three-digit number and tens;</u> ❖ <u>a three-digit number and hundreds.</u> <ul style="list-style-type: none"> ❖ <u>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</u> ❖ <u>Estimate the answer to a calculation and use inverse operations to check answers.</u> ❖ <u>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</u> 	<ul style="list-style-type: none"> ❖ <u>Recall and use multiplication and division facts for the 3x table.</u> ❖ <u>Recall and use multiplication and division facts for the 4x table.</u> ❖ <u>Recall and use multiplication and division facts for the 8x table.</u> ❖ <u>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.</u> ❖ <u>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.</u> 	<ul style="list-style-type: none"> ❖ <u>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.</u> ❖ <u>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</u> ❖ <u>Recognise and use fractions as numbers: unit fractions (numerator of 1) and non-unit fractions with small denominators.</u> ❖ <u>Recognise and show, using diagrams, equivalent fractions with small denominators.</u> ❖ <u>Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$].</u> ❖ <u>Compare and order unit fractions, and fractions with the same denominators.</u> ❖ <u>Solve problems that involve all of the above.</u> 	<ul style="list-style-type: none"> ❖ <u>Measure, compare, add and subtract lengths (m/cm/mm);</u> ❖ <u>Measure, compare, add and subtract mass (kg/g);</u> ❖ <u>Measure, compare, add and subtract volume/capacity (l/ml).</u> ❖ <u>Measure the perimeter of simple 2-D shapes.</u> ❖ <u>Add and subtract amounts of money to give change, using both £ and p in practical contexts.</u> <p><i>Tell and write the time from:</i></p> <ul style="list-style-type: none"> ❖ <u>an analogue clock and 12-hour and 24-hour clocks;</u> ❖ <u>an analogue clock, including using Roman numerals from I to XII.</u> <ul style="list-style-type: none"> ❖ <u>Estimate and read time with increasing accuracy to the nearest minute.</u> ❖ <u>Record and compare time in terms of seconds, minutes and hours</u> ❖ <u>Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.</u> ❖ <u>Know the number of seconds in a minute and the number of days in each month, year and leap year</u> ❖ <u>Compare durations of events [for example to calculate the time taken by particular events or tasks].</u> 	<ul style="list-style-type: none"> ❖ <u>Draw 2-D shapes and make 3-D shapes using modelling materials.</u> ❖ <u>Recognise 3-D shapes in different orientations and describe them.</u> ❖ <u>Recognise angles as a property of shape or a description of a turn.</u> ❖ <u>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.</u> ❖ <u>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</u>
					Statistics
					<ul style="list-style-type: none"> ❖ <u>Interpret and present data using bar charts, pictograms and tables.</u> ❖ <u>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.</u>

Mathematics: Planning and Assessment from National Curriculum Year 4

For statements to be completely embedded they should be demonstrated in a range of contexts and subject areas if applicable.

Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions (including decimals)	Measurement
<ul style="list-style-type: none"> ❖ Count in multiples of 6, 7, 9, 25 and 1000. ❖ Find 1000 more or less than a given number. ❖ Count backwards through zero to include negative numbers. ❖ Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). ❖ Order and compare numbers beyond 1000. ❖ Identify, represent and estimate numbers using different representations. ❖ Round any number to the nearest 10, 100 or 1000. ❖ Solve number and practical problems that involve all of the above and with increasingly large positive numbers. ❖ 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. 	<ul style="list-style-type: none"> ❖ Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. ❖ Estimate and use inverse operations to check answers to a calculation. ❖ Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> ❖ Recall multiplication and division facts for multiplication tables up to 12 x 12. <i>Use place value, known and derived facts to multiply and divide mentally, including:</i> <ul style="list-style-type: none"> ❖ multiplying by 0 and 1; ❖ dividing by 1; ❖ multiplying together three numbers. ❖ Recognise and use factor pairs and commutativity in mental calculations. ❖ Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ❖ 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. 	<ul style="list-style-type: none"> ❖ Recognise and show, using diagrams, families of common equivalent fractions. ❖ Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. ❖ 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. ❖ Add and subtract fractions with the same denominator. ❖ Recognise and write decimal equivalents of any number of tenths or hundredths. ❖ Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. ❖ 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. ❖ Round decimals with one decimal place to the nearest whole number. ❖ Compare numbers with the same number of decimal places up to two decimal places. ❖ Solve simple measure and money problems involving fractions and decimals to two decimal places. 	<ul style="list-style-type: none"> ❖ Convert between different units of measure [for example, kilometre to metre; hour to minute]. ❖ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. ❖ Find the area of rectilinear shapes by counting squares. ❖ Estimate, compare and calculate different measures, including money in pounds and pence. ❖ Read, write and convert time between analogue and digital 12- and 24-hour clocks. ❖ Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
				Geometry: Properties of Shapes
				<ul style="list-style-type: none"> ❖ Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. ❖ Identify acute and obtuse angles and compare and order angles up to two right angles by size. ❖ 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.
				Geometry: Position & Direction
				<ul style="list-style-type: none"> ❖ 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.
				Statistics
				<ul style="list-style-type: none"> ❖ 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.

End of Year 4: Have memorized multiplication tables up to and including 12 x 12; show precision and fluency in their work; read and spell mathematical vocabulary correctly and confidently.

Mathematics: Planning and Assessment from National Curriculum Year 5

For statements to be completely embedded they should be demonstrated in a range of contexts and subject areas if applicable.

Number & place Value	Addition & Subtraction	Multiplication & Division	Fractions (including decimals & %)	Measurement	Geometry: Properties of Shapes
<ul style="list-style-type: none"> ❖ Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. ❖ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. ❖ Interpret negative numbers in context; count forwards and backwards with positive and negative whole numbers, including through zero. ❖ Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. ❖ Solve number problems and practical problems that involve all of the above. ❖ Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. 	<ul style="list-style-type: none"> ❖ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). ❖ Add and subtract numbers mentally with increasingly large numbers (example, $12\ 462 - 2300 = 10\ 162$). ❖ Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ❖ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. 	<ul style="list-style-type: none"> ❖ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. ❖ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ❖ Establish whether a number up to 100 is prime and recall prime numbers up to 19. ❖ 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 and divide numbers mentally drawing upon known facts. ❖ Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. ❖ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ❖ Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). ❖ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ❖ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. ❖ Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. 	<ul style="list-style-type: none"> ❖ Compare and order fractions whose denominators are all multiples of the same number. ❖ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. ❖ Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]. ❖ Add and subtract fractions with the same denominator and denominators that are multiples of the same number. ❖ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. ❖ Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]. ❖ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. ❖ Round decimals with two decimal places to the nearest whole number and to one decimal place. ❖ Read, write, order and compare numbers with up to three decimal places. ❖ Solve problems involving number up to three decimal places. ❖ Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. ❖ Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. 	<ul style="list-style-type: none"> ❖ Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). ❖ Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. ❖ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. ❖ Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2). ❖ Estimate the area of irregular shapes. ❖ Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. ❖ Solve problems involving converting between units of time. ❖ Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. 	<ul style="list-style-type: none"> ❖ Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. ❖ Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. ❖ Draw given angles, and measure them in degrees ($^\circ$). <p>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 $\frac{1}{2}$ a turn (total 180°); ❖ other multiples of 90°. ❖ Use the properties of rectangles to deduce related facts and find missing lengths and angles. ❖ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
					Geometry: Position & Direction
					<ul style="list-style-type: none"> ❖ 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.
					Statistics
					<ul style="list-style-type: none"> ❖ Solve comparison, sum and difference problems using information presented in a line graph. ❖ Complete, read and interpret information in tables, including timetables.

Mathematics: Planning and Assessment from National Curriculum Year 6

For statements to be completely embedded they should be demonstrated in a range of contexts and subject areas if applicable.

Place Value	Addition, Subtraction, Multiplication & Division	Fractions (including decimals & %)	Ratio & Proportion	Measurement	Properties of Shapes
<ul style="list-style-type: none"> ❖ <u>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.</u> ❖ <u>Round any whole number to a required degree of accuracy.</u> ❖ <u>Use negative numbers in context and calculate intervals across zero.</u> ❖ <u>Solve number and practical problems that involve all of the above.</u> 	<ul style="list-style-type: none"> ❖ <u>Multiply multi-digit numbers up to 4 digits by a two-digit whole number.</u> ❖ <u>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</u> ❖ <u>Divide numbers up to 4 digits by a two-digit number and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</u> ❖ <u>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.</u> ❖ <u>Perform mental calculations, including with mixed operations and large numbers.</u> ❖ <u>Identify common factors, common multiples and prime numbers.</u> ❖ <u>Use their knowledge of the order of operations to carry out calculations involving the four operations.</u> ❖ <u>Solve addition, subtraction multiplication and division multi-step problems in contexts, deciding which operations and methods to use and why.</u> ❖ <u>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</u> 	<ul style="list-style-type: none"> ❖ <u>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</u> ❖ <u>Compare and order fractions, including fractions > 1.</u> ❖ <u>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</u> ❖ <u>Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$].</u> ❖ <u>Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$].</u> ❖ <u>Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$].</u> ❖ <u>Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</u> ❖ <u>Multiply one-digit numbers with up to two decimal places by whole numbers.</u> ❖ <u>Use written division methods in cases where the answer has up to two decimal places.</u> ❖ <u>Solve problems which require answers to be rounded to specified degrees of accuracy.</u> ❖ <u>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</u> 	<ul style="list-style-type: none"> ❖ <u>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</u> ❖ <u>Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.</u> ❖ <u>Solve problems involving similar shapes where the scale factor is known or can be found.</u> ❖ <u>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</u> 	<ul style="list-style-type: none"> ❖ <u>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</u> ❖ <u>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.</u> ❖ <u>Convert between miles and kilometres.</u> ❖ <u>Recognise that shapes with the same areas can have different perimeters and vice versa.</u> ❖ <u>Recognise when it is possible to use formulae for area and volume of shapes.</u> ❖ <u>Calculate the area of parallelograms and triangles.</u> ❖ <u>Calculate, estimate and 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].</u> 	<ul style="list-style-type: none"> ❖ <u>Draw 2-D shapes using given dimensions and angles.</u> ❖ <u>Recognise, describe and build simple 3-D shapes, including making nets.</u> ❖ <u>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</u> ❖ <u>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</u> ❖ <u>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</u>
			Algebra <ul style="list-style-type: none"> ❖ <u>Use simple formulae.</u> ❖ <u>Generate and describe linear number sequences.</u> ❖ <u>Express missing number problems algebraically.</u> ❖ <u>Find pairs of numbers that satisfy an equation with two unknowns.</u> ❖ <u>Enumerate possibilities of combinations of two variables.</u> 		Position and Direction <ul style="list-style-type: none"> ❖ <u>Describe positions on the full coordinate grid (all four quadrants).</u> ❖ <u>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</u>
				Statistics <ul style="list-style-type: none"> ❖ <u>Interpret pie charts and line graphs and use these to solve problems.</u> ❖ <u>Construct pie charts and line graphs.</u> ❖ <u>Calculate and interpret the mean as an average.</u> 	

End of Year 6: Be fluent in written methods for all 4 operations, including long multiplication and division and in working with fractions, decimals and percentages; read, spell and pronounce mathematical vocabulary correctly.