



	MILESTONE 1	MILESTONE 2	MILESTONE 3
<b>To know &amp; use numbers: counting:</b>	<ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</li> <li>Count, read and write numbers to 100 in numerals.</li> <li>Given a number, identify one more and one less.</li> <li>Count in steps of 2, 3, 5 and 10 from 0 or 1 and in tens from any number, forwards and backwards.</li> </ul>	<ul style="list-style-type: none"> <li>Count in multiples of 2 to 9, 25, 50, 100 and 1000.</li> <li>Find 1000 more or less than a given number.</li> <li>Count backwards through zero to include negative numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Read numbers up to 10 000 000.</li> </ul>
<b>To know &amp; use numbers: representing</b>	<ul style="list-style-type: none"> <li>Identify, represent and estimate numbers using different representations, including the number line.</li> <li>Read and write numbers initially from 1 to 20 and then to at least 100 in numerals and in words.</li> </ul>	<ul style="list-style-type: none"> <li>Identify, represent and estimate numbers using different representations.</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> </ul>	<ul style="list-style-type: none"> <li>Write numbers up to 10 000 000.</li> <li>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul>
<b>Comparing</b>	<ul style="list-style-type: none"> <li>Use the language of equal to, more than, less than (fewer), most and least.</li> <li>Compare and order numbers from 0 up to 100; use and = signs.</li> </ul>	<ul style="list-style-type: none"> <li>Order and compare numbers beyond 1000.</li> </ul>	<ul style="list-style-type: none"> <li>Order and compare numbers up to 10 000 000.</li> </ul>
<b>Place value</b>	<ul style="list-style-type: none"> <li>Recognise the place value of each digit in a two-digit number (tens, ones).</li> <li>Use place value and number facts to solve problems</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 1000.</li> </ul>	<ul style="list-style-type: none"> <li>Round any whole number to a required degree of accuracy.</li> <li>Determine the value of each digit in any number.</li> </ul>
<b>Solving problems</b>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Solve number and practical problems with increasingly large positive numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Solve number and practical problems</li> </ul>
<b>To add &amp; subtract: checking</b>	<ul style="list-style-type: none"> <li>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</li> <li>Represent and use number bonds and related subtraction facts to 20.</li> </ul>	<ul style="list-style-type: none"> <li>Estimate and use inverse operations to check answers to a calculation.</li> </ul>	<ul style="list-style-type: none"> <li>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul>
<b>To add &amp; subtract: using number facts</b>	<ul style="list-style-type: none"> <li>Represent and use number bonds and related subtraction facts to 20.</li> <li>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.</li> </ul>	<ul style="list-style-type: none"> <li>Solve two-step addition and subtraction problems in contexts, deciding which operations and methods to use and why</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract negative integers.</li> </ul>
<b>To add &amp; subtract: complexity</b>	<p>Solve one-step problems with addition and subtraction, using:</p> <ul style="list-style-type: none"> <li>Concrete objects and pictorial representations including those involving numbers, quantities and measures</li> <li>The addition (+), subtraction (-) and equals (=) signs.</li> </ul>	<ul style="list-style-type: none"> <li>Solve two-step addition and subtraction problems in contexts, deciding which operations</li> </ul>	<ul style="list-style-type: none"> <li>Solve multi-step addition and subtraction problems in contexts, deciding which operations and methods to use and why.</li> </ul>
<b>To add &amp; subtract: methods</b>	<ul style="list-style-type: none"> <li>Add and subtract numbers using concrete objects and pictorial representations and mentally, including: [W2], [2], • One-digit and two-digit numbers to 20, including zero • A two-digit number and ones [W2] • A two-digit number and tens [W2] • Two two-digit numbers [2] • Adding three one-digit numbers.</li> <li>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate.</li> </ul> <p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> <li>A three-digit number and ones</li> <li>A three-digit number and tens</li> <li>A three-digit number and hundreds</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction).</li> <li>Add and subtract numbers mentally with increasingly large numbers.</li> </ul>
<b>To multiply &amp; divide: Methods</b>	<ul style="list-style-type: none"> <li>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.</li> <li>Show that multiplication of two numbers can be done in any order (commutative) and division of one number cannot</li> <li>Solve problems involving multiplication and division using mental methods.</li> </ul>	<ul style="list-style-type: none"> <li>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</li> <li>Use place value, and known and derived facts to multiply and divide mentally, including multiplying by 0 and 1, dividing by 1, multiplying together three numbers.</li> <li>Recognise and use factor pairs in mental calculations.</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 for multiplication.</li> <li>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 numbers, fractions, or by rounding, as appropriate for the context.</li> </ul>

			<ul style="list-style-type: none"><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>• Perform mental calculations, including with mixed operations and large numbers.</li></ul>
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<b>To multiply &amp; divide: checking</b>	<ul style="list-style-type: none"> <li>Use known multiplication facts to check the accuracy of calculations.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and use the inverse relationship between multiplication and division and use this to check calculations and solve missing number problems.</li> </ul>	<ul style="list-style-type: none"> <li>Estimate and use inverse operations and rounding to check answers to a calculation.</li> </ul>
<b>To multiply &amp; divide: complexity</b>	<ul style="list-style-type: none"> <li>Solve one-step (two-step at greater depth) problems involving multiplication and division.</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems involving multiplying and dividing, 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).</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</li> <li>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> <li>Use knowledge of the order of operations to carry out calculations involving the four operations.</li> </ul>
<b>Using multiplication and division facts</b>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.</li> <li>Recognise odd and even numbers.</li> <li>Use multiplication and division facts to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Identify common factors, common multiples and prime numbers.</li> <li>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</li> <li>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</li> <li>Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).</li> </ul>
<b>To use fractions: solving problems</b>	<ul style="list-style-type: none"> <li>Write simple fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract fractions with the same denominator within one whole.</li> <li>Solve problems involving increasingly harder fractions.</li> <li>Add and subtract fractions with the same denominator.</li> <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>Solve simple measure and money problems involving fractions and decimals to two decimal places.</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number.</li> <li>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</li> <li>Multiply simple pairs of proper fractions, writing the answer in its simplest form.</li> <li>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25.</li> <li>Divide proper fractions by whole numbers.</li> <li>Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</li> <li>Solve problems involving the calculation of percentages and the use of percentages for comparison.</li> <li>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> </ul>
<b>To use fractions: recognising fractions</b>	<ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</li> <li>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</li> <li>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</li> <li>Round decimals with one decimal place to the nearest whole number.</li> <li>Compare numbers with the same number of decimal places up to two decimal places.</li> <li>Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and from dividing one-digit numbers or quantities by 10.</li> <li>Count up and down in hundredths; recognise that hundredths arise from dividing an object by 100 and dividing tenths by 10.</li> <li>Compare and order unit fractions and fractions with the same denominators.</li> <li>Recognise and show, using diagrams, families of common equivalent fractions.</li> <li>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and order fractions whose denominators are all multiples of the same number.</li> <li>Compare and order fractions, including fractions <math>&gt; 1</math>.</li> <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>Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>Read, write, order and compare numbers with up to three decimal places.</li> <li>Identify the value of each digit in numbers given to three decimal places.</li> <li>Solve problems involving numbers up to three decimal places.</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> </ul>

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<b>To use fractions: equivalence</b>	<ul style="list-style-type: none"> <li>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and write decimal equivalents of any number of tenths or hundredths.</li> <li>Recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>.</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> <li>Read and write decimal numbers as fractions.</li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</li> <li>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</li> <li>Associate a fraction with division and calculate decimal fraction equivalents.</li> <li>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> </ul>
<b>To understand the properties of shapes</b>	<ul style="list-style-type: none"> <li>Recognise and name common 2-D and 3-D shapes. [W7]</li> <li>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. [9], [15]</li> <li>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. [9], [15]</li> <li>Identify 2-D shapes on the surface of 3-D shapes.</li> <li>Compare and sort common 2-D and 3-D shapes and everyday objects.</li> </ul>	<ul style="list-style-type: none"> <li>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.</li> <li>Recognise angles as a property of shape or a description of a turn.</li> <li>Identify right angles; recognise that two right angles make a half turn, three make three quarters of a turn and four make a complete turn; identify whether angles are greater than or less than a right angle.</li> <li>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</li> <li>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</li> <li>Identify acute and obtuse angles and compare and order angles up to two right angles by size.</li> <li>Identify lines of symmetry in 2-D shapes presented in different orientations.</li> <li>Complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul>	<ul style="list-style-type: none"> <li>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</li> <li>Know that angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.</li> <li>Draw given angles, and measure them in degrees (<math>^{\circ}</math>).</li> </ul> <p>Identify:</p> <ul style="list-style-type: none"> <li>Angles at a point and one whole turn (total <math>360^{\circ}</math>)</li> <li>Angles at a point on a straight line and a turn (total <math>180^{\circ}</math>)</li> <li>Other multiples of <math>90^{\circ}</math></li> </ul> <ul style="list-style-type: none"> <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>Draw 2-D shapes using given dimensions and angles.</li> <li>Recognise, describe and build simple 3-D shapes, including making nets.</li> <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>Illustrate and name parts of circles, including radius, diameter and circumference, and know that the diameter is twice the radius.</li> <li>Recognise angles where they meet at a point, are on a straight line or are vertically opposite, and find missing angles</li> </ul>
<b>To describe position, direction &amp; movement</b>	<ul style="list-style-type: none"> <li>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</li> <li>Order and arrange combinations of mathematical objects in patterns and sequences.</li> <li>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 anticlockwise).</li> </ul>	<ul style="list-style-type: none"> <li>Recognise angles as a property of shape and as an amount of rotation.</li> <li>Identify angles that are greater than a right angle.</li> <li>Describe positions on a 2-D grid as coordinates in the first quadrant.</li> <li>Describe movements between positions as translations of a given unit to the left/right and up/down.</li> <li>Plot specified points and draw sides to complete a given polygon.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Describe positions on the full coordinate grid (all four quadrants).</li> <li>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</li> </ul>

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<b>To use measures</b>	<ul style="list-style-type: none"> <li>Compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume and time.</li> <li>Measure and begin to record: lengths and heights, mass/weight, capacity and volume, time (hours, minutes, seconds).</li> <li>Sequence events in chronological order using language.</li> <li>Recognise and use language relating to dates, including days of the week, weeks, months and years.</li> <li>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</li> <li>Use standard units to estimate and measure length/height (m/cm), mass (kg/g), temperature (<math>^{\circ}\text{C}</math>) and capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</li> <li>Compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math>.</li> <li>Recognise and know the value of different denominations of coins and notes.</li> <li>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</li> <li>Find different combinations of coins that equal the same amount of money.</li> <li>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</li> </ul>	<ul style="list-style-type: none"> <li>Measure, compare, add and subtract: lengths/heights (m/cm/ mm); mass/weight (kg/g); volume/ capacity (l/ml).</li> <li>Measure the perimeter of simple 2-D shapes.</li> <li>Add and subtract amounts of money to give change (£ and p).</li> <li>Read, write and convert time between analogue and digital 12- and 24-hour clocks, 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 appropriate vocabulary.</li> <li>Know the number of seconds in a minute and the number of days in each month, year and leap year.</li> <li>Compare durations of events.</li> <li>Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days and 12- and 24-hour clocks.</li> <li>Convert between different units of measure. (e.g. kilometre to metre, hour to minute).</li> <li>Measure and calculate the area and perimeter of a rectilinear figure (including squares) in centimetres and metres.</li> <li>Estimate, compare and calculate different measures, including money in pounds and pence.</li> </ul>	<ul style="list-style-type: none"> <li>Convert between different units of metric measure.</li> <li>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</li> <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), using standard units (square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>)) and estimate the area of irregular shapes.</li> <li>Estimate volume and capacity.</li> <li>Solve problems involving converting between units of time.</li> <li>Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.</li> <li>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</li> <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 notation to up to three decimal places.</li> <li>Convert between miles and kilometres.</li> <li>Recognise that shapes with the same area can have different perimeters and vice versa.</li> <li>Recognise when it is possible to use formulae for calculating the area and volume of shapes.</li> <li>Calculate the area of parallelograms and triangles.</li> <li>Calculate, estimate and compare the volume of cubes and cuboids using standard units, including cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units.</li> </ul>
<b>To use statistics</b>	<ul style="list-style-type: none"> <li>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</li> <li>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</li> <li>Ask and answer questions about totalling and comparing categorical data.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and present data using bar charts, pictograms and tables.</li> <li>Solve one-step and two-step questions (e.g. 'How many more?' and 'How many fewer?') using information presented in scaled bar charts, pictograms and tables.</li> <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>Solve comparison, sum and difference problems using information presented in a line graph.</li> <li>Complete, read and interpret information in tables, including timetables.</li> <li>Interpret and construct pie charts and line graphs and use these to solve problems.</li> <li>Calculate and interpret the mean as an average.</li> </ul>
<b>To use algebra</b>	<ul style="list-style-type: none"> <li>Solve addition and subtraction problems involving missing numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Solve addition and subtraction and multiplication and division problems that involve missing numbers.</li> </ul>	<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>Find pairs of numbers that satisfy an equation with two unknowns.</li> <li>Enumerate possibilities of combinations of two variables.</li> </ul>