

## Year 3

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Number – Place Value</b></p> <p><b>Vocabulary:</b>                      Number, zero, one to twenty and beyond, none, count (on, up, to, from, down), before, after, more, less, many, few, fewer, least, fewest, smaller, greater, equal to, the same as, odd, even, pair, units, tens, ones, digit, numeral, figures, compare, size, value, between, halfway between, above, below, add on, count on, count back, bridging, number bonds, hundreds, thousands, estimate, exchange, approximately</p>	<ul style="list-style-type: none"> <li>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> <li>Recognise the place value of each digit in a two-digit number (tens, ones)</li> <li>Identify, represent and estimate numbers using different representations, including the number line</li> <li>Compare and order numbers from 0 up to 100; use and = signs</li> <li>Read and write numbers to at least 100 in numerals and in words</li> <li>Use place value and number facts to solve problems.</li> </ul>	<ul style="list-style-type: none"> <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>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>Compare and order numbers up to 1000</li> <li>Identify, represent and estimate numbers using different representations</li> <li>Read and write numbers up to 1000 in numerals and in words</li> <li>Solve number problems and practical problems involving these ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Find 1000 more or less than a given number</li> <li>Count backwards through zero to include negative numbers</li> <li>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</li> <li>Order and compare numbers beyond 1000</li> <li>Identify, represent and estimate numbers using different representations</li> <li>Round any number to the nearest 10, 100 or 1000</li> <li>Solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>Read Roman numerals to 100 (I to C) and know that over time, the numeral</li> </ul>

			system changed to include the concept of zero and place value.
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**NOTES:**

- Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100.
- They use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example,  $146 = 100 + 40 + 6$ ,  $146 = 130 + 16$ ).
- Using a variety of representations, including those related to measure, continue to count in ones, tens and hundreds, so that they become fluent in the order and place value of numbers to 1000.

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Number – Addition and Subtraction</b></p> <p><b>Vocabulary:</b>            Number bonds, number lines, add, more, plus, make, sum, total, altogether, number bonds, number lines, add, more, plus, make, sum, total, altogether, inverse, double, halve, equals, the same, difference between, subtract, take away, minus</p>	<ul style="list-style-type: none"> <li>• Solve problems with addition and subtraction:</li> <li>• Using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>• Applying their increasing knowledge of mental and written methods</li> <li>• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:               <ul style="list-style-type: none"> <li>○ a two-digit number and ones</li> <li>○ a two-digit number and tens</li> <li>○ two two-digit numbers</li> <li>○ adding three one-digit numbers</li> </ul> </li> <li>• Show that addition of two numbers can be done in any</li> </ul>	<ul style="list-style-type: none"> <li>• Add and subtract numbers mentally, including:               <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> </li> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>• Estimate the answer to a calculation and use inverse operations to check answers</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</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>

order (commutative) and subtraction of one number from another cannot

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

**NOTES:**

- Practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.
- Use understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Number – Multiplication and Division</b></p> <p><b>Vocabulary:</b>  count in twos, fives, tens, how many times? Lots of, groups of, multiples of, repeat addition, array, row, column, double, halve, share, equal, group in pairs/threes, divide, divided by, left over, sets of, grouping, sharing, multiple, multiplication, commutative principle, doubling, halving, equivalent</p>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</li> <li>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li> <li>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>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</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>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</li> <li>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.</li> </ul>

**NOTES:**

- Continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency.
- Through doubling, connect the 2, 4 and 8 multiplication tables.
- Develop efficient mental methods, for example, using commutativity and associativity (for example,  $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$ ) and multiplication and division facts (for example, using  $3 \times 2 = 6$ ,  $6 \div 3 = 2$  and  $2 = 6 \div 3$ ) to derive related facts (for example,  $30 \times 2 = 60$ ,  $60 \div 3 = 20$  and  $20 = 60 \div 3$ ).
- Develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.
- Solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which  $m$  objects are connected to  $n$  objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Number – Fractions</b></p> <p><b>Vocabulary:</b> Half, quarter, part, section, equal, equal parts, whole, unit fraction, non-unit fraction, integer, numerator, denominator, represent, share, group, mixed number, whole number, divide, set, multiple, tenth, interval</p>	<ul style="list-style-type: none"> <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> <li>Write simple fractions for example, <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>.</li> </ul>	<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>Recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators</li> <li>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</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 [for example, <math>7\ 5 + 7\ 1 = 7\ 6</math>]</li> <li>Compare and order unit fractions, and fractions with the same denominators</li> </ul> <p>Solve problems that involve all of the above.</p>	<ul style="list-style-type: none"> <li>Recognise and show, using diagrams, families of common equivalent fractions</li> <li>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</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>Recognise and write decimal equivalents to <math>\frac{1}{4}</math> <math>\frac{1}{2}</math> <math>\frac{3}{4}</math></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>Round decimals with one decimal place to the nearest whole number</li> </ul>

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|  |  |  | <ul style="list-style-type: none"><li>• Compare numbers with the same number of decimal places up to two decimal places</li><li>• Solve simple measure and money problems involving fractions and decimals to two decimal places.</li></ul> |
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**NOTES:**

- Pupils connect tenths to place value, decimal measures and to division by 10.
- Begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence.
- Go beyond the  $[0, 1]$  interval, including relating this to measure.
- Understand the relation between unit fractions as operators (fractions of), and division by integers.
- Continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.
- Practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.



Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Measurement</b></p> <p><b>Vocabulary:</b> Estimate, measure, heavy, light, long, short, centimetres, metres, minutes, hours, seconds, clock, timer, length, width, height, perimeter, total sides, acute, obtuse, right angle, month, year, midnight, midday, am, pm, duration, estimate, consecutive, hour, minute, second, past to, end, start, digital, analogue, elapsed</p>	<ul style="list-style-type: none"> <li>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>Compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</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 amounts 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> <li>Compare and sequence intervals of time</li> </ul>	<ul style="list-style-type: none"> <li>Measure, compare, add and subtract: lengths (m/cm/mm); mass (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, using both £ and p in practical contexts</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</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 [for example to calculate the time</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) in centimetres and metres</li> <li>Find the area of rectilinear shapes by counting squares</li> <li>Estimate, compare and calculate different measures, including money in pounds and pence Mathematics – key stages 1 and 2 28 Statutory requirements</li> <li>Read, write and convert time between analogue and digital 12- and 24-hour clocks</li> <li>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</li> </ul>

- 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 the number of hours in a day.

taken by particular events or tasks].

**NOTES:**

- Continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm).
- The comparison of measures includes simple scaling by integers (for example, a given quantity or measure is twice as long or five times as high) and this connects to multiplication.
- Continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately.
- The decimal recording of money is introduced formally in **Year 4**.
- Use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in Year 4.

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Geometry – Properties of Shape</b></p> <p><b>Vocabulary:</b> group, sort, cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square, hexagon, pentagon, flat, curved, straight, face, side, edge, corner, 2D, 3D, length, width, side, vertex, vertices, edge, face</p>	<ul style="list-style-type: none"> <li>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</li> <li>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</li> <li>Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</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 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> </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 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>
<p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>Knowledge of the properties of shapes is extended at this stage to symmetrical and non-symmetrical polygons and polyhedra. Pupils extend their use of the properties of shapes.</li> <li>Describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute and obtuse for angles greater or lesser than a right angle.</li> <li>Connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts.</li> </ul>			

Unit	What do I need to know before I start this unit? (Year 2)	What will I be learning this year?	What is the next step? (Year 4)
<p><b>Statistics</b></p> <p><b>Vocabulary:</b> count, tally, sort, graph, block, set, list, table, bar chart, pictogram, interpret, represent, interval</p>	<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</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 [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.</li> </ul>	<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>

	<p>number of objects in each category and sorting the categories by quantity</p> <ul style="list-style-type: none"><li>• Ask and answer questions about totalling and comparing categorical data.</li></ul>		
	<p><b>NOTES:</b></p> <ul style="list-style-type: none"><li>• Understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.</li><li>• Continue to interpret data presented in many contexts.</li></ul>		