

UNIT	Maths topic	Learning objectives/expected outcomes	NC programmes of study
1	<p><b>Number and place value (1)</b></p>	<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</li> <li>• Explain what each digit represents in whole numbers and decimals with up to two places, and partition, round and order these numbers</li> <li>• Use understanding of place value to multiply and divide whole numbers and decimals by 10, and 100</li> </ul> <p><i>I can say the value of each digit in a number, including decimals</i></p> <p><i>I can put a set of decimal numbers in order</i></p> <p><i>I can round decimals to the nearest whole number and tenth</i></p> <p><i>I can multiply or divide a whole number or decimal by 10 and 100</i></p> <p><i>I can use decimals to record measurements and money</i></p>	<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</li> <li>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>• solve number problems and practical problems that involve all of the above</li> <li>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</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>• solve problems involving number up to three decimal places</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> </ul>

<p>2</p>	<p><b>Addition and subtraction (1)</b></p>	<ul style="list-style-type: none"> <li>• Use knowledge of place value and addition and subtraction of two-digit numbers to mentally calculate sums and differences of larger numbers and decimals</li> <li>• Use efficient written methods to add and subtract whole numbers with more than four digits and decimals with up to two places</li> <li>• Add and subtract units of measure (e.g. length, mass, volume, money) using decimal notation</li> </ul> <p><i>I can work out mentally sums and differences of decimals with two digits</i></p> <p><i>I can explain each step when I write addition and subtraction calculations in columns</i></p> <p><i>I can add different measures that include tenths</i></p>	<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>• add and subtract numbers mentally with increasingly large numbers</li> <li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• use all four operations to solve problems involving measure using decimal notation including scaling</li> </ul>
<p>3</p>	<p><b>Geometry (1)</b></p>	<ul style="list-style-type: none"> <li>• Identify, visualise and describe properties of rectangles, triangles, regular polygons and 3-D solids</li> <li>• Use an angle measurer or protractor to a suitable degree of accuracy</li> <li>• Know angles are measured in degrees;</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 angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees</li> <li>• identify:</li> </ul>

		<p>estimate and measure them and draw a given angle, writing its size in degrees (<math>^{\circ}</math>)</p> <ul style="list-style-type: none"> <li>• Complete patterns with up to two lines of symmetry</li> <li>• Read and plot coordinates in the first quadrant</li> </ul> <p><i>I can sort shapes according to their properties and explain how I sorted them</i></p> <p><i>I can describe the important features of shapes such as rectangles</i></p> <p><i>I can complete a pattern with one or two lines of symmetry</i></p> <p><i>I can use a protractor to measure an angle in degrees</i></p> <p><i>I can read and plot coordinates to make shapes</i></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 <math>\frac{1}{2}</math> 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>• 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> </ul>
<p>4</p>	<p><b>Measures (1)</b></p>	<ul style="list-style-type: none"> <li>• Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy</li> <li>• Convert between different units of measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre;</li> </ul>	<ul style="list-style-type: none"> <li>• convert between different units of metric measure</li> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> </ul>

		<p>kilogram and gram; litre and millilitre)</p> <ul style="list-style-type: none"> <li>• Interpret a reading that lies between two unnumbered divisions on a scale</li> <li>• Draw and measure lines to the nearest millimetre</li> <li>• Measure and calculate the perimeter of rectangles</li> </ul> <p><i>I can find the value of each interval on a scale so that I can read measurements accurately</i></p> <p><i>I can measure using appropriate measuring instruments.</i></p> <p><i>I can choose appropriate units to measure</i></p> <p><i>I can use a formula to work out the perimeter of a rectangle</i></p>	
<p>5</p>	<p><b>Multiplication and division (1)</b></p>	<ul style="list-style-type: none"> <li>• Recall quickly multiplication and division facts up to <math>12 \times 12</math> and use them to multiply and divide pairs of multiples of 10 and 100</li> <li>• Multiply a three-digit number by a one-digit number using an efficient written method</li> </ul>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</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> </ul>

		<ul style="list-style-type: none"> <li>• Divide a three-digit number by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context</li> </ul> <p><i>I know my tables to 12 for multiplication facts and division facts and can use these facts to multiply multiples of 10 and 100.</i></p> <p><i>I can use different mental strategies for multiplication and division depending on the numbers involved.</i></p> <p><i>I can use an efficient written method to multiply a three-digit number by a one-digit number</i></p> <p><i>I can use an efficient written method to divide a three-digit number by a one-digit number</i></p> <p><i>I can explain each step of my calculation</i></p>	<ul style="list-style-type: none"> <li>• multiply and divide numbers mentally drawing upon known facts</li> <li>• 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</li> <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 all four operations to solve problems involving measure using decimal notation including scaling</li> </ul>
<p>6</p>	<p><b>Fractions, decimals and percentages (1)</b></p>	<ul style="list-style-type: none"> <li>• Find simple fractions of numbers and quantities</li> <li>• Express a smaller whole number as a fraction of a larger one (e.g. recognise that 5 out of 8 is <math>\frac{5}{8}</math>)</li> <li>• Find and explore patterns of equivalent fractions</li> </ul>	<ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>• recognise mixed numbers and improper fractions and convert from one form to the other and write</li> </ul>

		<ul style="list-style-type: none"> <li>Recognise the per cent symbol (%) and understand that it relates to 'number of parts per hundred'</li> <li>Know percentage and decimal equivalents of fractions with a denominator of a multiple of 100</li> </ul> <p><i>I can explain how I know that two fractions are equivalent</i></p> <p><i>I can find fractions of numbers using division</i></p> <p><i>I know that 'per cent' means 'parts in every 100', so 1% = 1/100</i></p> <p><i>I can write the percentage and decimal that is the same as 35/100</i></p>	<p>mathematical statements &gt; 1 as a mixed number</p> <ul style="list-style-type: none"> <li>read and write decimal numbers as fractions</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 hundred, and as a decimal fraction</li> <li>solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.</li> </ul>
<p>7</p>	<p><b>Patterns and number (1)</b></p>	<ul style="list-style-type: none"> <li>Count from any given number in whole-number and decimal steps, extending beyond zero when counting backwards</li> <li>Recognise and describe linear number sequences, including those involving fractions and decimals</li> <li>Read Roman numerals to 1000 (M)</li> </ul>	<ul style="list-style-type: none"> <li>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero</li> <li>read Roman numerals to 1000 (M) and recognise years written in Roman numerals</li> </ul>

		<ul style="list-style-type: none"> <li>Identify multiples and factors, including finding all factor pairs</li> <li>Know and use the vocabulary of prime numbers and establish whether a number up to 20 is prime</li> <li>Recognise and use square numbers and the notation for squared</li> </ul> <p><i>I can find missing numbers in a sequence that includes negative numbers</i></p> <p><i>I can count in decimal steps to create a sequence</i></p> <p><i>I can find the factors of different numbers</i></p> <p><i>I can work out if a number is a prime number</i></p> <p><i>I can read Roman numerals to M</i></p> <p><i>I can explain what square numbers are</i></p>	<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>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> </ul>
<p>8</p>	<p><b>Addition and subtraction (2)</b></p>	<ul style="list-style-type: none"> <li>Use knowledge of place value and addition and subtraction of two-digit numbers to mentally calculate sums and differences of larger numbers and decimals</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>add and subtract numbers mentally with increasingly</li> </ul>

		<ul style="list-style-type: none"> <li>• Use efficient written methods to add and subtract whole numbers with more than four digits and decimals with up to two places</li> <li>• Add and subtract units of measure (e.g. length, mass, volume, money) using decimal notation</li> <li>• Add and subtract fractions with the same denominator, writing the answer as a mixed number</li> </ul> <p><i>I can mentally add and subtract some four-digit numbers</i></p> <p><i>I can explain each step when I write addition and subtraction calculations in columns, including decimals</i></p> <p><i>I can add and subtract fractions with the same denominator</i></p>	<p>large numbers</p> <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> <li>• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• use all four operations to solve problems involving measure using decimal notation including scaling</li> <li>• add and subtract fractions with the same denominator and multiples of the same number</li> </ul>
<p>9</p>	<p><b>Geometry (2)</b></p>	<ul style="list-style-type: none"> <li>• Identify, visualise and describe properties of rectangles, triangles, regular polygons and 3-D solids</li> <li>• Use knowledge of properties to draw 2-D shapes using given dimensions and angles</li> <li>• Identify and draw nets of 3-D shapes</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 angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees</li> <li>• identify:</li> </ul>



	<ul style="list-style-type: none"> <li>• Estimate, draw and measure acute and obtuse angles</li> <li>• Identify, describe and represent the position of a shape following a reflection or translation</li> <li>• Read and plot coordinates in the first quadrant</li> </ul> <p><i>I can say whether a triangle is equilateral, isosceles or scalene and explain how I know</i></p> <p><i>I know the important features of a cube and can use these to draw its net</i></p> <p><i>I can explain whether a shape has line symmetry and whether it has any parallel or perpendicular sides</i></p> <p><i>I can create a pattern that has two lines of symmetry</i></p> <p><i>I can estimate, measure and draw angles less than <math>180^\circ</math></i></p> <p><i>I can recognise acute, obtuse and right angles</i></p> <p><i>I can use a grid to draw where a shape will be after it has been reflected or translated</i></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>• 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> </ul>
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<p>10</p>	<p><b>Measures (2)</b></p>	<ul style="list-style-type: none"> <li>• Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy</li> <li>• Convert between different units of measure</li> <li>• Interpret a reading that lies between two unnumbered divisions on a scale</li> <li>• Calculate and compare the area of squares and rectangles including using standard units and square centimetres (cm<sup>2</sup>)</li> <li>• Read timetables and time using 24-hour clock notation and use a calendar to calculate time intervals</li> </ul> <p><i>I can estimate and measure length in kilometres, metres, centimetres and millimetres using appropriate measuring instruments</i></p> <p><i>I can choose and use the correct metric unit to estimate and measure capacity</i></p> <p><i>I can find the value of each interval on a scale and use this to give approximate values of readings between divisions</i></p>	<ul style="list-style-type: none"> <li>• convert between different units of metric measure</li> <li>• calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>• solve problems involving converting between units of time</li> </ul>
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		<p><i>I can calculate the area of a square and rectangle</i></p> <p><i>I can use a calendar to work out how many days and weeks it is to my birthday</i></p> <p><i>I can change am or pm times to 24-hour clock times, and vice versa</i></p>	
<p>11</p>	<p><b>Multiplication and division (2)</b></p>	<ul style="list-style-type: none"> <li>• Multiply and divide numbers mentally drawing upon known facts</li> <li>• Multiply numbers up to three digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers</li> <li>• Divide numbers up to four digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context</li> <li>• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>• Multiply proper fractions and mixed numbers by whole numbers</li> </ul> <p><i>I can use different mental strategies for multiplication and division depending on the numbers involved.</i></p>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</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> <li>• 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</li> <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>• multiply proper fractions and mixed numbers by whole</li> </ul>

		<p><i>I can use an efficient written method to multiply a two-digit number by a two-digit number</i></p> <p><i>I can use an efficient written method to divide a four-digit number by a one-digit number</i></p> <p><i>I can use materials and diagrams to multiply simple fractions by whole numbers</i></p>	<p>numbers, supported by materials and diagrams</p> <ul style="list-style-type: none"> <li>use all four operations to solve problems involving measure using decimal notation including scaling</li> </ul>
<p>12</p>	<p><b>Fractions, decimals and percentages (2)</b></p>	<ul style="list-style-type: none"> <li>Find simple fractions and percentages of numbers and quantities</li> <li>Use equivalent fractions to compare and order fractions whose denominators are all multiples of the same number</li> <li>Understand percentage as the number of parts in every 100 and express tenths and hundredths as percentages</li> <li>Recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>Know percentage and decimal equivalents of fractions with a denominator of a multiple of 10</li> </ul> <p><i>I can use division to find a fraction of a number</i></p>	<ul style="list-style-type: none"> <li>compare and order fractions whose denominators are all multiples of the same number</li> <li>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</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>read and write decimal numbers as fractions</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 hundred, and as a decimal fraction</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 with a denominator of a multiple of 10 or 25.</li> </ul>

		<p><i>I can put <math>\frac{1}{2}</math>, <math>\frac{3}{5}</math> and <math>\frac{7}{10}</math> in order of size</i></p> <p><i>I know that <math>1\frac{1}{2}</math> is the same as <math>\frac{3}{2}</math></i></p> <p><i>I can find a simple percentage of a quantity</i></p> <p><i>I can give the decimal equivalent of a fraction such as <math>\frac{3}{10}</math> and explain how I know</i></p> <p><i>I can give a fraction such as <math>\frac{7}{10}</math> as a percentage</i></p>	
<p>13</p>	<p><b>Number and place value (2)</b></p>	<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</li> <li>• Read, write, order and compare numbers with up to three decimal places</li> <li>• Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000</li> <li>• Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>• Round decimals with two decimal places to the nearest whole number and to one decimal</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</li> <li>• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>• solve number problems and practical problems that involve all of the above</li> <li>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</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> </ul>

		<p>place</p> <p><i>I can say the value of each digit in a number, including decimals up to thousandths</i></p> <p><i>I can put a set of decimal numbers in order</i></p> <p><i>I can round decimals to the nearest whole number, tenth and hundredth</i></p> <p><i>I can multiply or divide a whole number or decimal by 10, 100 and 1000</i></p> <p><i>I can use decimals to record measurements and money</i></p>	<ul style="list-style-type: none"> <li>• solve problems involving number up to three decimal places</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> </ul>
<p>14</p>	<p><b>Geometry (3)</b></p>	<ul style="list-style-type: none"> <li>• Identify, visualise and describe properties of rectangles, triangles, regular polygons</li> <li>• Use knowledge of properties to draw 2-D shapes using given dimensions and angles</li> <li>• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li> <li>• Measure and compare different angles</li> <li>• Calculate angles at a point on a straight line</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 angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>• draw given angles, and measure them in degrees</li> <li>• identify:             <ul style="list-style-type: none"> <li>- angles at a point and one whole turn (total 360°)</li> <li>- angles at a point on a straight line and ½ a turn (total 180°)</li> <li>- other multiples of 90°</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>Identify, describe and represent the position of a shape following a reflection or translation</li> <li>Read and plot coordinates in the first quadrant</li> </ul> <p><i>I can draw 2-D shapes with given dimensions and angles</i></p> <p><i>I can explain the difference between regular and irregular polygons</i></p> <p><i>I can draw where a shape will be after it has been reflected or translated and plot their coordinates</i></p> <p><i>I can estimate and measure angles less than 180°</i></p> <p><i>I can recognise acute, obtuse, reflex and right angles</i></p> <p><i>I can draw angles less than 180° to within 5°</i></p> <p><i>I can calculate angles on a straight line</i></p>	<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>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> </ul>
<p>15</p>	<p><b>Patterns and number (2)</b></p>	<ul style="list-style-type: none"> <li>Count from any given number in whole-number and decimal steps, extending beyond zero when counting backwards</li> <li>Recognise and describe linear number</li> </ul>	<ul style="list-style-type: none"> <li>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers</li> </ul>

		<p>sequences and find the term-to-term rule</p> <ul style="list-style-type: none"> <li>• Read Roman numerals to 1000 (M) and work out years written in Roman numerals</li> <li>• Identify pairs of factors of two-digit whole numbers and find common multiples</li> <li>• Establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• Recognise and use square numbers and cube numbers, and the notation for squared and cubed</li> </ul> <p><i>I can give a rule to describe a linear sequence</i></p> <p><i>I can find common multiples of different numbers</i></p> <p><i>I can find the factors of different numbers</i></p> <p><i>I know the prime numbers to 19</i></p> <p><i>I can read Roman numerals to M</i></p> <p><i>I can recognise and use square numbers and cube numbers</i></p>	<p>through zero</p> <ul style="list-style-type: none"> <li>• read Roman numerals to 1000 (M) and recognise years written in Roman numerals</li> <li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</li> </ul>
			<ul style="list-style-type: none"> <li>• convert between different units of metric measure</li> </ul>



16	Measures (3)	<ul style="list-style-type: none"> <li>• Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy</li> <li>• Convert larger to smaller units using decimals to one place (e.g. change 2.6 kg to 2600 g)</li> <li>• Understand and use basic equivalences between metric and common imperial units and express them in approximate terms</li> <li>• Measure and calculate the perimeter of composite rectilinear shapes</li> <li>• Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>• Recognise and estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build cubes and cuboids) and capacity (e.g. using water)</li> <li>• Read timetables and time using 24-hour clock notation</li> </ul> <p><i>I can use decimal numbers to record measurements</i></p> <p><i>I can interpret a reading between two unnumbered divisions on a scale on measuring cylinders and jugs</i></p>	<ul style="list-style-type: none"> <li>• understand and use 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 squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>• estimate volume and capacity</li> <li>• solve problems involving converting between units of time</li> </ul>
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		<p><i>I can use some common imperial units and their equivalent metric measure</i></p> <p><i>I can solve problems involving calculating perimeter or area of rectangles</i></p> <p><i>I can use cubes to make shapes of a certain volume</i></p> <p><i>I can solve problems, using a timetable written in 24-hour clock notation</i></p>	
<p>17</p>	<p><b>Multiplication and division (3)</b></p>	<ul style="list-style-type: none"> <li>• Solve problems involving multiplication and division with larger numbers by decomposing them into their factors</li> <li>• Multiply numbers up to four digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers</li> <li>• Divide numbers up to four digits by a one-digit number using an efficient written method of short division and interpret remainders appropriately for the context</li> <li>• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>• Multiply proper fractions and mixed numbers</li> </ul>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</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> <li>• 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</li> <li>• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul>

		<p>by whole numbers</p> <p><i>I can factorise numbers to help with mental calculations</i></p> <p><i>I can use an efficient written method to multiply a four-digit number by a one-digit number</i></p> <p><i>I can use an efficient written method to multiply a three-digit number by a two-digit number</i></p> <p><i>I can use a short division method and know when to round up or down, depending on the problem</i></p> <p><i>I can scale amounts up or down using different rates</i></p> <p><i>I can use materials and diagrams to multiply fractions and mixed numbers by whole numbers</i></p>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> <li>• use all four operations to solve problems involving measure using decimal notation including scaling</li> </ul>
<p>18</p>	<p><b>Fractions, decimals and percentages (3)</b></p>	<ul style="list-style-type: none"> <li>• Find fractions and simple percentages of numbers and quantities</li> <li>• Know 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 with a denominator of a multiple of 10 or 25.</li> <li>• Use equivalent fractions to compare and order fractions whose denominators are all multiples of the same number</li> </ul>	<ul style="list-style-type: none"> <li>• compare and order fractions whose denominators are all multiples of the same number</li> <li>• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</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> </ul>

		<ul style="list-style-type: none"><li>• Recognise mixed numbers and improper fractions and convert from one form to the other</li><li>• Use sequences to scale numbers up or down and solve problems involving proportions of quantities</li></ul> <p><i>I can tell you what calculations I will do to find a fraction or percentage of a quantity</i></p> <p><i>I can give the decimal equivalent of a fraction such as <math>\frac{3}{5}</math> and explain how I know</i></p> <p><i>I can give a fraction such as <math>\frac{1}{4}</math> as a percentage</i></p> <p><i>I can explain how to use equivalent fractions to put fractions in order of size</i></p> <p><i>I know that <math>3\frac{1}{5}</math> is the same as <math>\frac{16}{5}</math></i></p> <p><i>I can continue a sequence such as: 'There are 3 red sweets in every 10, there are 6 red sweets in every 20'</i></p>	<ul style="list-style-type: none"><li>• read and write decimal numbers as fractions</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 hundred, and as a decimal fraction</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 with a denominator of a multiple of 10 or 25.</li></ul>
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