

## Long Term Progression Map Maths

INTENT	IMPLEMENTATION
<b>Maths</b> Our children will: <ul style="list-style-type: none"> <li>- think and speak like mathematicians</li> <li>- reason and problem solve</li> <li>- learn, use and apply number facts</li> </ul>	We teach Maths through our Endeavour Schools Trust Pathway alongside our Calculations Policy. We teach Maths every day.

	Place Value	Addition and Subtraction	Multiplication and Division	Fractions
<b>Year 1</b>	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens given a number, identify one more and one less use the language of: equal to, more than, less than (fewer), most, least identify and represent numbers using objects and pictorial representations including the number line read and write numbers from 1 to 20 in numerals and words.	represent and use number bonds and related subtraction facts within 20 add and subtract one-digit and two-digit numbers to 20, including zero read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	count in multiples of twos, fives and tens 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	recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity
<b>Year 2</b>	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward compare and order numbers from 0 up to 100; use <, > and = signs identify, represent and estimate numbers using different representations, including the number line read and write numbers to at least 100 in numerals and in words recognise the place value of each digit in a two-digit number (tens, ones) use place value and number facts to solve problems	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 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> show that addition of two numbers can be done in any 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. solve problems with addition and subtraction:	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line (Non Statutory Guidance) 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 write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .

		<ul style="list-style-type: none"> <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> </ul>		
<b>Year 3</b>	<p>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number compare and order numbers up to 1 000 identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words <i>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</i> recognise the place value of each digit in a three-digit number (hundreds, tens, ones) solve number problems and practical problems involving these ideas.</p>	<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> <p>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction estimate the answer to a calculation and use inverse operations to check answers solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p>count from 0 in multiples of 4, 8, 50 and 100 recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods estimate the answer to a calculation and use inverse operations to check answers 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</p>	<p>count up and down in tenths recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators compare and order unit fractions, and fractions with the same denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole (e.g. <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>) solve problems that involve all of the above</p>
<b>Year 4</b>	<p>count backwards through zero to include negative numbers count in multiples of 6, 7, 9, 25 and 1 000 find 1000 more or less than a given number order and compare numbers beyond 1000 <i>compare numbers with the same number of decimal places up to two decimal places</i> identify, represent and estimate numbers using different representations 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. recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) <i>find the effect of dividing a one- or two-digit number by 10 and 100,</i></p>	<p>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</p>	<p>count in multiples of 6, 7, 9, 25 and 1 000 recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math> use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers 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 recognise and use factor pairs and commutativity in mental calculations (repeated) estimate and use inverse operations to check answers to a calculation 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</p>	<p>count up and down in hundredths recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten compare numbers with the same number of decimal places up to two decimal places round decimals with one decimal place to the nearest whole number recognise and show, using diagrams, families of common equivalent fractions recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to <math>\frac{1}{4}</math>; <math>\frac{1}{2}</math>; <math>\frac{3}{4}</math> add and subtract fractions with the same denominator 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</p>

	<p>identifying the value of the digits in the answer as units, tenths and hundredths</p> <p>round any number to the nearest 10, 100 or 1 000</p> <p>round decimals with one decimal place to the nearest whole number</p> <p>solve number and practical problems that involve all of the above and with increasingly large positive numbers</p>			<p>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</p> <p>solve simple measure and money problems involving fractions and decimals to two decimal places.</p>
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	Algebra	Measurement	Geometry: Properties Of Shapes	Geometry: Position, Direction and Movement	Statistics
Year 1	<p>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and <b>missing number problems</b> such as <math>7 = \square - 9</math></p> <p>represent and use number bonds and related subtraction facts within 20</p> <p>sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening</p>	<p>compare, describe and solve practical problems for:</p> <p>lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]</p> <p>mass/weight [e.g. heavy/light, heavier than, lighter than]</p> <p>capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]</p> <p>time [e.g. quicker, slower, earlier, later]</p> <p>sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>measure and begin to record the following:</p> <p><b>lengths and heights</b></p> <p><b>mass/weight</b></p> <p><b>capacity and volume</b></p> <p><b>time</b> (hours, minutes, seconds)</p> <p>recognise and know the value of different denominations of <b>coins and notes</b></p> <p>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>recognise and name common 2-D and 3-D shapes, including:</p> <p>2-D shapes [e.g. rectangles (including squares), circles and triangles]</p> <p>3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].</p>	<p>describe position, direction and movement, including half, quarter and three-quarter turns.</p>	
Year 2	<p>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and <b>missing number</b> problems.</p> <p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>compare and sequence intervals of time</p>	<p>compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></p> <p>compare and sequence intervals of time</p> <p>choose and use appropriate standard units to estimate and measure</p> <p><b>length/height</b> in any direction (m/cm);</p> <p><b>mass</b> (kg/g); <b>temperature</b> (<math>^{\circ}\text{C}</math>); <b>capacity</b> (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p>	<p>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>identify 2-D shapes on the surface of 3-D shapes, [for example, a</p>	<p>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)</p> <p>order and arrange combinations of mathematical objects in patterns and sequences</p>	<p>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</p> <p>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>ask and answer questions about totalling and</p>

	order and arrange combinations of mathematical objects in patterns	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 <b>solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change 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.	circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects		comparing categorical data
<b>Year 3</b>	solve problems, including <b>missing number</b> problems, using number facts, place value, and more complex addition and subtraction. solve problems, including <b>missing number</b> problems, involving multiplication and division, including integer scaling	compare durations of events, for example to calculate the time taken by particular events or tasks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight measure, compare, add and subtract: <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml) measure the <b>perimeter</b> of simple 2-D shapes add and subtract amounts of <b>money</b> to give change, using both £ and p in practical contexts tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight know the number of seconds in a minute and the number of days in each month, year and leap year	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them recognise angles as a property of shape or a description of a turn 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 identify horizontal and vertical lines and pairs of perpendicular and parallel lines		interpret and present data using bar charts, pictograms and tables solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.
<b>Year 4</b>	Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.	estimate, compare and calculate different measures, including money in pounds and pence estimate, compare and calculate <b>different measures</b> , including <b>money in pounds and pence</b>	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 compare and classify geometric shapes, including quadrilaterals	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	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using

		<p>measure and calculate the <b>perimeter</b> of a rectilinear figure (including squares) in centimetres and metres</p> <p>find the area of rectilinear shapes by counting squares</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks</p> <p>(appears also in Converting)</p> <p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</p> <p>convert between different units of measure (e.g. kilometre to metre; hour to minute)</p>	<p>and triangles, based on their properties and sizes</p> <p>identify acute and obtuse angles and compare and order angles up to two right angles by size</p>		<p>information presented in bar charts, pictograms, tables and other graphs.</p>
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