

Year 1 Maths Overview

<u>Autumn1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
<p><b>Place Value</b> Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>Read and write numbers from 1 to 20 in numerals and words.</p> <p>Given a number, identify one more and one less</p> <p>Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least Count, read and write numbers to 100 in numerals;</p> <p><i>(Odd and even numbers)</i></p>	<p><b>Place Value</b> Count in multiples of twos, fives and tens</p>	<p><b>Multiplication and Division</b> 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.</p>	<p><b>Measurement</b> Recognise and know the value of different denominations of coins and notes</p>	<p><b>Measurement</b> Measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds)</p>	<p><b>Addition and Subtraction</b> Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math>.</p> <p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>
	<p><b>Addition and Subtraction</b> Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</p> <p>Represent and use number bonds and related subtraction facts within 20</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>				
	<p><b>Measurement</b> Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years</p>				

	<p><b>Properties of shapes</b> Recognise and name common 2-D shapes, for example, rectangles (including squares), circles and triangles</p>	<p><b>Measurement</b> 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><b>Properties of shapes</b> Recognise and name common 3-D shapes, for example, cuboids (including cubes), pyramids and spheres</p>	<p><b>Fractions</b> 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.</p>	<p><b>Position and Direction</b> Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>
	<p><b>Fractions</b> Recognise, find and name a half as one of two equal parts of an object or shape</p>				

### Year 2 Maths Overview

<u>Autumn1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
<p><b>Place Value</b></p> <p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</p> <p>Recognise the place value of each digit in a two-digit number (tens, ones)</p> <p>Read and write numbers to at least 100 in numerals and in words</p> <p>Identify, represent and estimate numbers using different representations, including the number line</p>	<p><b>Place Value</b></p> <p>Compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</p> <p>Use place value and number facts to solve problems.</p>	<p><b>Measurement</b></p> <p>Compare and sequence intervals of time</p> <p>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</p> <p>Know the number of minutes in an hour and the number of hours in</p> <p>GDS = The pupil can read the time on the clock to the nearest 5 minutes</p>	<p><b>Multiplication and Division</b></p> <p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p>GDS = The pupil can use multiplication facts to make deductions outside known multiplication facts</p> <p>GDS = The pupil can solve word problems that involve more than one step</p> <p>GDS = The pupil can recognise the relationships between addition and subtraction and can rewrite addition statements as simplified multiplication statements</p>	<p><b>Revision</b></p>	<p><b>Addition and Subtraction</b></p> <p>Solve problems with addition and subtraction:</p> <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>
<p><b>Addition and Subtraction</b></p> <p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>- a two-digit number and ones</li> </ul>	<p><b>Multiplication and Division</b></p> <p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write</p>	<p><b>Addition and Subtraction</b></p> <p>Solve problems with addition and subtraction:</p> <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>	<p><b>Fractions</b></p> <p>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</p> <p>Write simple fractions for example, <math>\frac{1}{2}</math> of <math>6 = 3</math> and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>.</p> <p>GDS = The pupil can find and</p>	<p><b>SATS</b></p>	<p><b>Multiplication and Division</b></p> <p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p>

<p>- a two-digit number and tens - two two-digit numbers - adding three one-digit numbers</p> <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>GDS = The pupil can work out mental calculations where regrouping is required</p> <p>GDS = The pupil can solve more complex missing number problems</p>	<p>them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</p> <p>GDS = The pupil can determine remainders given known facts</p>	<p>GDS = The pupil can reason about addition</p> <p>GDS = The pupil can solve word problems that involve more than one step</p> <p>GDS = The pupil can recognise the relationships between addition and subtraction and can rewrite addition statements as simplified multiplication statements</p>	<p>compare fractions of amounts</p>		
<p><b>Measurement</b></p> <p>Compare and sequence intervals of time</p> <p>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</p> <p>Know the number of minutes in an hour and the number of hours in a day.</p>	<p><b>Position and Direction</b></p> <p>Order and arrange combinations of mathematical objects in patterns and sequences</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><b>Properties of shapes</b></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 circle on a cylinder and a triangle on a pyramid]</p> <p>Compare and sort common 2-D and 3-D shapes and everyday objects</p>	<p><b>Measurement</b></p> <p>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</p> <p>Find different combinations of coins that equal the same amounts of money</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p>		<p><b>Statistics</b></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 comparing categorical data.</p>

		GDS = The pupil can describe similarities and differences of shape properties			
	<p><b>Measurement</b></p> <p>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</p> <p>Compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</p> <p>GDS = The pupil can read scales in divisions of ones, twos, fives and tens in a practical situation where not all numbers on the scale are given</p>				
	<p><b>Statistics</b></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 comparing categorical data.</p>				

Year 3 Maths Overview

<u>Autumn1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
<p><b>Place Value</b></p> <p>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</p> <p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</p> <p>Compare and order numbers up to 1000</p> <p>Identify, represent and estimate numbers using different representations</p> <p>Read and write numbers up to 1000 in numerals and in words</p> <p>Solve number problems and practical problems involving these ideas.</p>	<p><b>Division</b></p> <p>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Write and calculate mathematical statements for <b>division</b> using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p>	<p><b>Measurement</b></p> <p>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>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</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>Compare durations of events [for example to calculate the time taken by particular events or tasks].</p>	<p><b>Measurement</b></p> <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>Measure the perimeter of simple 2-D shapes</p>	<p><b>Fractions</b></p> <p>Add and subtract fractions with the same denominator within one whole e.g. <math>5/7 + 1/7 = 6/7</math></p> <p>Compare and order unit fractions, and fractions with the same denominators</p> <p>Solve problems that involve all of the above.</p>	<p><b>Statistics</b></p> <p>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.</p>
<p><b>Addition and Subtraction</b></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</p>	<p><b>Addition and Subtraction</b></p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</p>	<p><b>Fractions</b></p> <p>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</p> <p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p>	<p><b>Properties of shapes</b></p> <p>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p>	<p><b>Statistics</b></p> <p>Interpret and present data using bar charts, pictograms and tables</p>	<p><b>Addition and Subtraction</b></p> <p>Estimate the answer to a calculation and use inverse operations to check answers</p> <p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>

		<p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators</p>			
<p><b>Multiplication</b></p> <p>Recall and use multiplication facts for the 3, 4 and 8 multiplication tables</p> <p>Write and calculate mathematical statements for <b>multiplication</b> using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p>	<p><b>Properties of shapes</b></p> <p>Recognise angles as a property of shape or a description of a turn</p> <p>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</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p><b>Measurement</b></p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts</p>	<p><b>Multiplication and Division</b></p> <p>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><b>Properties of shapes</b></p> <p>Recognise angles as a property of shape or a description of a turn</p> <p>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</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p><b>Multiplication and Division</b></p> <p>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>

Year 4 Maths Overview

<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
<p><b>Place value</b></p> <p>Counting in multiples of 6,7,9, 25 and 1000.</p> <p>Count backwards through zero to include negative numbers</p> <p>Recognise the place value of each digit in a 4 digit number</p> <p>Find 1000 more or less than a given number</p> <p>Order and compare numbers beyond 1000</p> <p>Identify, represent and estimate numbers using different representations</p>	<p><b>Place value</b></p> <p>Counting in multiples of 6,7,9, 25 and 1000.</p> <p>Count backwards through zero to include negative numbers</p> <p>Round any number to the nearest 10, 100 or 1000</p> <p>Solve number and practical problems that involve place value and with increasingly large positive numbers.</p> <p>Read Roman numerals to 100 and know that overtime the numeral system changed to include the concept of zero and place value.</p>	<p><b>Properties of shape</b></p> <p>Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes.</p>	<p><b>Fractions</b></p> <p>Recognise and show, using diagrams families of common equivalent fractions</p> <p>Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities.</p> <p>Add and subtract fractions with the same denominator.</p> <p>Recognise and write the decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math></p>	<p><b>Statistics</b></p> <p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p><b>Measurement</b></p> <p>Convert between different units of measure (km to m, l to ml, g to kg)</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m</p> <p>Find the area of a rectilinear shapes by counting squares</p>
<p><b>Addition and Subtraction</b></p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction where appropriate.</p>	<p><b>Addition and Subtraction</b></p> <p>Estimate and use inverse operations to check answers to a calculation</p> <p>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.</p>	<p><b>Statistics</b></p> <p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and</p>	<p><b>Properties of shape</b></p> <p>Identify acute and obtuse angles and compare and order angles up to 2 right angles by size.</p>	<p><b>Measurement</b></p> <p>Read, write and convert time between analogue and digital, 12 and 24 hr clocks.</p> <p>Convert between different units of measure (hours to mins)</p> <p>Solve problems involving converting from hrs to mins, mins to secs, years to months,</p>	<p><b>Fractions</b></p> <p>Find the effect of dividing a 1 or 2 digit number by 10 and 100, identifying the value as ones, tenths etc.</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing a number by 100.</p>

		other graphs.		weeks to days.	<p>Recognise and write decimal equivalent of any number of tenths or hundredths.</p> <p>Round decimals to the nearest whole number</p> <p>Compare numbers with the same number of decimal places up to 2dp</p> <p>Solve simple measure and money problems involving fractions and decimals to 2dp.</p>
<p><b>Multiplication and Division</b></p> <p>Recall multiplication and division facts for multiplication tables up to 12 x 12</p> <p>Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1, dividing by 1, multiplying 3 numbers together.</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p> <p>Multiply 2 digit and 3 digit numbers by a 1 digit number using formal and written layout.</p>	<p><b>Measurement</b></p> <p>Convert between different units of measure (km to m, l to ml, g to kg)</p> <p>Estimate, compare and calculate different measures including money in pounds and pence.</p>	<p><b>Multiplication and Division</b></p> <p>Multiply 2 digit and 3 digit numbers by a 1 digit number using formal and written layout.</p> <p>Solve problems involving multiplying and adding, including using the distributive law to multiply 2 digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p>	<p><b>Position and direction</b></p> <p>Describe positions on a 2D grid as coordinates in the first quadrant</p> <p>Plot specified points and draw sides to complete a given polygon.</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down.</p>	<p><b>All 4 operations</b></p> <p>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.</p> <p>Solve problems involving multiplying and adding, including using the distributive law to multiply 2 digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p>	<p><b>Properties of shape</b></p> <p>Identify lines of symmetry in 2D shapes, presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry.</p>

Year 5 Maths Overview

<u>Autumn1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
<p><b>Place Value</b></p> <p>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000.</p> <p>Solve number problems and practical problems that involve all of the above.</p>	<p><b>Place Value</b></p> <p>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> <p>Solve number problems and practical problems that involve all of the above</p>	<p><b>Fractions</b></p> <p>Compare and order fractions whose denominators are all multiples of the same number</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>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 (E.g. <math>2/5 + 4/5 = 6/5 = 1</math> and <math>1/5</math>.)</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p>	<p><b>Measurement</b></p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Calculate and compare the area of rectangles (including squares), and including 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</p> <p>Estimate volume [for example, using 1 cm blocks to build cuboids (including cubes)] and capacity [for example, using water]</p>	<p><b>Fractions</b></p> <p>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</p> <p>Solve problems which require knowing percentage and decimal equivalents of <math>1/2</math>, <math>1/4</math>, <math>1/5</math>, <math>2/5</math>, <math>4/5</math> and those fractions with a denominator of a multiple of 10 or 25.</p>	<p><b>Position and direction</b></p> <p>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.</p>
<p><b>Addition and subtraction</b></p> <p>Add and subtract numbers</p>	<p><b>Fractions</b></p> <p>Read and write decimal numbers</p>	<p><b>Properties of shape</b></p> <p>Identify 3-D shapes, including</p>	<p><b>Addition and subtraction</b></p> <p>Solve addition and subtraction</p>	<p><b>Measurement</b></p>	<p><b>Measurement</b></p> <p>Use all four operations to solve</p>

<p>mentally with increasingly large numbers</p> <p>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</p> <p>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>Read, write, order and compare numbers with up to three decimal places</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>Solve problems involving number up to three decimal places</p>	<p>cubes and other cuboids, from 2-D representations</p>	<p>multi-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>Solve problems involving converting between units of time</p>	<p>problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p>
<p><b>Multiplication and division</b></p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 (context: measures)</p>	<p><b>Properties of shape</b></p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>Draw given angles, and measure</p>	<p><b>Statistics</b></p> <p>Solve comparison, sum and difference problems using information presented in a line graph</p>	<p><b>Multiplication and division</b></p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>Establish whether a number up to</p>	<p><b>Statistics</b></p> <p>Complete, read and interpret information in tables, including timetables.</p>	<p><b>Place value / 4 operations</b></p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the</p>
<p><b>Measure</b></p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p>					

<p>Multiply and divide numbers mentally drawing upon known facts</p> <p>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</p> <p>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</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</p>	<p>them in degrees</p> <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 <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> <li>- other multiples of <math>90^\circ</math></li> </ul> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p>		<p>100 is prime and recall prime numbers up to 19</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (<math>\text{}^2</math>) and cubed (<math>\text{}^3</math>)</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p>		<p>equals sign</p>
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Year 6 Maths Overview

Overview only contains objectives from the Year 6 programme of study. Objectives in italics are from notes and guidance (non-statutory).

Therefore for each area of study is important to refer to progression map for previous years learning / ensure any gaps in knowledge are covered.

Not all areas are covered in the year 6 programme of study but still need to be taught / revised in preparation for SATS (hence why some areas have no objectives)

Area of study	Objectives	
Place value, sequences, Roman Numerals	<ul style="list-style-type: none"> <li>- Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</li> <li>- Round any whole number to a required degree of accuracy</li> <li>- Use negative numbers in context, and calculate intervals across zero</li> <li>- Solve number and practical problems that involve all of the above.</li> <li>- Pupils use the whole number system, including saying, reading and writing numbers accurately.</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division (see Mathematics Appendix 1)</i></li> <li>- Perform mental calculations, including with mixed operations and large numbers</li> </ul>
Addition and subtraction inc. word probs (link to decimals)	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	<ul style="list-style-type: none"> <li>- <i>They undertake mental calculations with increasingly large numbers and more complex calculations.</i></li> <li>- Use their knowledge of the order of operations to carry out calculations involving the four operations.</li> </ul>
Multiplication inc. word probs (link to decimals)	<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 of long multiplication</li> <li>- Identify common factors, common multiples and prime numbers</li> <li>- <i>Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.</i></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Pupils explore the order of operations using brackets; for example, <math>2 + 1 \times 3 = 5</math> and <math>(2 + 1) \times 3 = 9</math>.</i></li> <li>- Solve problems involving addition, subtraction, multiplication and division</li> <li>- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> <li>- <i>Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc., but not to a specified number of significant figures.</i></li> </ul>
Division inc. word probs (link to decimals)	<ul style="list-style-type: none"> <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 number remainders, fractions, or by rounding, as appropriate for the context</li> <li>- <i>Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.</i></li> </ul>	
Fractions	<ul style="list-style-type: none"> <li>- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> </ul>	

	<ul style="list-style-type: none"> <li>- They practise calculations with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.</li> <li>- Compare and order fractions, including fractions <math>&gt; 1</math></li> <li>- Common factors can be related to finding equivalent fractions.</li> <li>- Pupils use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity</li> </ul>	
<p><b>Fractions (4 operations)</b></p>	<ul style="list-style-type: none"> <li>- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>- Pupils should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other and progress to varied and increasingly complex problems.</li> <li>- Multiply simple pairs of proper fractions, writing the answer in its simplest form</li> <li>- Pupils should use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle.</li> <li>-Divide proper fractions by whole numbers</li> </ul>	
<p><b>Decimals (link to +/÷/×/÷)</b></p>	<ul style="list-style-type: none"> <li>-Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction</li> <li>- Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</li> <li>-Multiply one-digit numbers with up to two decimal places by whole numbers</li> <li>-Use written division methods in cases where the answer has up to two decimal places</li> <li>-Solve problems which require answers to be rounded to specified degrees of accuracy</li> <li>-Pupils can explore and make conjectures about converting a simple fraction to a decimal fraction (for example, <math>3 \div 8 = 0.375</math>). For simple fractions with recurring decimal equivalents, pupils learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context. Pupils multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Pupils multiply decimals by whole numbers, starting with the simplest cases, such as <math>0.4 \times 2 = 0.8</math>, and in practical contexts, such as measures and money.</li> </ul>	

	<ul style="list-style-type: none"> <li>- Pupils are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication.</li> <li>- Pupils also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers.</li> </ul>	
Percentages (Fractions, decimals)	<ul style="list-style-type: none"> <li>- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> <li>- Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</li> </ul>	<ul style="list-style-type: none"> <li>- Pupils draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.</li> <li>- Pupils describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements.</li> </ul>
Properties /names /nets 2D+3D shapes (circles)	<ul style="list-style-type: none"> <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>- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</li> <li>- These relationships might be expressed algebraically for example, <math>d = 2 \times r</math>; <math>a = 180 - (b + c)</math>.</li> </ul>	
Types of triangles and angles	<ul style="list-style-type: none"> <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>- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</li> <li>- Pupils should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as missing numbers, lengths, coordinates and angles</li> </ul>	
Handling data create and interpret	<ul style="list-style-type: none"> <li>- Interpret and construct pie charts and line graphs and use these to solve problems</li> <li>- Pupils connect their work on angles, fractions and percentages to the interpretation of pie charts.</li> <li>- Pupils both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.</li> </ul>	
Handling data Averages Venn and Carroll diagrams	<ul style="list-style-type: none"> <li>- Calculate and interpret the mean as an average.</li> <li>- Pupils know when it is appropriate to find the mean of a data set.</li> </ul>	
Ratio and proportion	<ul style="list-style-type: none"> <li>- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</li> <li>- Solve problems involving similar shapes where the scale factor is known or can be found</li> <li>- Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> <li>- Pupils recognise proportionality in contexts when the relations between quantities</li> </ul>	

	<p><i>are in the same ratio (for example, similar shapes and recipes).</i></p> <ul style="list-style-type: none"> <li>- Pupils should consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. They might use the notation <math>a : b</math> to record their work.</li> <li>- Pupils solve problems involving unequal quantities, for example, 'for every egg you need three spoonfuls of flour', '3/5 of the class are boys'. These problems are the foundation for later formal approaches to ratio and proportion.</li> </ul>	
Mastery		
Algebra	<ul style="list-style-type: none"> <li>- Use simple formulae</li> <li>- Generate and describe linear number sequences</li> <li>- Pupils should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as: <ul style="list-style-type: none"> <li>- formulae in mathematics and science</li> <li>- equivalent expressions (for example, <math>a + b = b + a</math>)</li> <li>- generalisations of number patterns</li> <li>- number puzzles (for example, what two numbers can add up to).</li> </ul> </li> </ul>	
Algebra	<ul style="list-style-type: none"> <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>	
Coordinates	<ul style="list-style-type: none"> <li>- Pupils draw and label a pair of axes in all four quadrants with equal scaling. This extends their knowledge of one quadrant to all four quadrants, including the use of negative numbers.</li> <li>- Pupils draw and label rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. These might be expressed algebraically for example, translating vertex <math>(a, b)</math> to <math>(a - 2, b + 3)</math>; <math>(a, b)</math> and <math>(a + d, b + d)</math> being opposite vertices of a square of side <math>d</math>.</li> </ul>	<ul style="list-style-type: none"> <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>
Rotation and translation		
Symmetry and reflection		
Mastery		
Measures	<ul style="list-style-type: none"> <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>- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</li> <li>- Convert between miles and kilometres</li> <li>- They should connect conversion from kilometres to miles in measurement to its</li> </ul>	

	<p><i>graphical representation.</i></p> <ul style="list-style-type: none"> <li>-Pupils connect conversion (for example, from kilometres to miles) to a graphical representation as preparation for understanding linear/proportional graphs.</li> <li>- They know approximate conversions and are able to tell if an answer is sensible.</li> <li>- Using the number line, pupils use, add and subtract positive and negative integers for measures such as temperature.</li> <li>- Pupils could be introduced to compound units for speed, such as miles per hour, and apply their knowledge in science or other subjects as appropriate.</li> </ul>	
Perimeter/Area	<ul style="list-style-type: none"> <li>-Recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>- Calculate the area of parallelograms and triangles</li> <li>- They relate the area of rectangles to parallelograms and triangles, for example, by dissection, and calculate their areas, understanding and using the formulae (in words or symbols) to do this.</li> </ul>	- Recognise when it is possible to use formulae for area and volume of shapes
Area/ Volume	<ul style="list-style-type: none"> <li>- Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].</li> </ul>	
Time, timetable, calendars		
Word Problems		
Mastery		