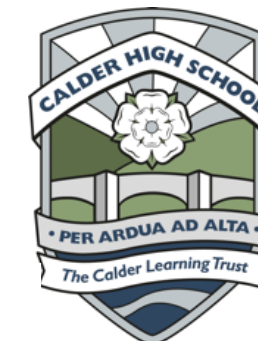




## Maths Curriculum Plan



**Faculty curriculum intent:** Mathematics teaches us how to make sense of the world around us. Through developing a child's ability to calculate, to reason and to solve problems it enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

Objectives covered for the first time

Objectives covered for the second time

Objectives covered for the third time

Objectives covered for the fourth time

Objectives covered for the fifth time

Objectives covered for the sixth time

	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
	Getting to know you Just like me	It's me 1, 2, 3! Light & Dark	Alive in 5! Growing 6, 7, 8	Growing 6, 7, 8 Building 9 & 10	To 20 and beyond First, then, now	Find my pattern On the move
<b>Early Years</b>	<p><b>Number</b> (match and sort; compare amounts)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Compare numbers</li> </ul> <p><b>Measurement and spatial thinking</b> (Compare size, mass &amp; capacity; exploring pattern)</p> <ul style="list-style-type: none"> <li>Continue, copy and create repeating patterns</li> <li>Compare length, weight and capacity</li> </ul>	<p><b>Number</b> (representing and comparing 1, 2, 3; composition of 1, 2, 3; representing numbers to 5; one more and less)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Subitise (recognise quantities without counting)</li> <li>Link the number symbol (numeral) with its cardinal number value</li> <li>Compare numbers</li> <li>Explore the composition of numbers to 10</li> </ul> <p><b>Measurement and spatial thinking</b> (Circles and triangles; positional language; shapes with 4 sides; time)</p> <ul style="list-style-type: none"> <li>Select, rotate and manipulate shapes in order to develop spatial reasoning skills</li> <li>Compose and decompose shapes so that children recognise a shape can have other shapes <i>within</i> it, just as numbers can</li> </ul>	<p><b>Number</b> (introducing zero; comparing numbers to 5; composition of 4 and 5; introducing comparing and composing 6, 7, 8)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Subitise (recognise quantities without counting)</li> <li>Link the number symbol (numeral) with its cardinal number value</li> <li>Compare numbers</li> <li>Explore the composition of numbers to 10</li> </ul> <p><b>Measurement and spatial thinking</b> (compare mass; compare capacity; length and height)</p> <ul style="list-style-type: none"> <li>Compare length, weight and capacity</li> </ul>	<p><b>Number</b> (making pairs, combining 2 groups; introducing, comparing and composing 9 and 10; comparing numbers to 10; bonds to 10)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Subitise (recognise quantities without counting)</li> <li>Link the number symbol (numeral) with its cardinal number value</li> <li>Compare numbers</li> <li>Explore the composition of numbers to 10</li> <li>Automatically recall number bonds for numbers 0-10</li> </ul> <p><b>Measurement and spatial thinking</b> (time; 3D shape; pattern)</p> <ul style="list-style-type: none"> <li>Continue, copy and create repeating patterns</li> <li>Select, rotate and manipulate shapes in order to develop spatial reasoning skills</li> <li>Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can</li> </ul>	<p><b>Number</b> (building numbers beyond 10; counting patterns beyond 10; adding more; taking away)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Subitise (recognise quantities without counting)</li> <li>Link the number symbol (numeral) with its cardinal number value</li> <li>Compare numbers</li> <li>Count beyond 10</li> <li>Understand the 'one more than/one less than' relationship between consecutive numbers</li> <li>Continue, copy and create repeating patterns</li> </ul> <p><b>Measurement and spatial thinking</b> (spatial reasoning; match, rotate, manipulate, compose and decompose)</p> <ul style="list-style-type: none"> <li>Select, rotate and manipulate shapes in order to develop spatial reasoning skills</li> <li>Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can</li> </ul>	<p><b>Number</b> (doubling; sharing and grouping; even and odd; deepening understanding; patterns and relationships)</p> <ul style="list-style-type: none"> <li>Count objects, actions and sounds</li> <li>Subitise (recognise quantities without counting)</li> <li>Link the number symbol (numeral) with its cardinal number value</li> <li>Compare numbers</li> <li>Count beyond 10</li> <li>Understand the 'one more than/one less than' relationship between consecutive numbers</li> </ul> <p><b>Measurement and spatial thinking</b> (spatial reasoning; visualise and build; mapping)</p> <ul style="list-style-type: none"> <li>Select, rotate and manipulate shapes in order to develop spatial reasoning skills</li> <li>Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can</li> <li>Continue, copy and create repeating patterns</li> <li>Compare length, weight and capacity</li> </ul>

Objectives for Early Years are taken from the 'Development Matters' curriculum guidance. These will help children to develop their mathematical knowledge in order to achieve their Early Learning Goals, which are as follows:

**Number:** Have a deep understanding of number to 10, including the composition of each number; subitise up to 5; automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10 (including doubling facts).

**Numerical patterns:** verbally count beyond 20 recognising the pattern of the counting system; compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; explore and represent patterns in numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
	Place Value to 20 Addition and Subtraction Money	Place Value to 50 Addition and Subtraction Multiplication	Place Value to 100 Division Length and height	Fractions Shape	Place Value recap Position and direction Weight and time	Four operations recap Volume
<u>Year 1</u>	<ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards beginning with 0 or 1, from any given number</li> <li>Count number to 100 in numerals; count in multiples of 2, 5 and 10</li> <li>Identify and represent numbers using objects and pictorial representations</li> <li>Read and write numbers from 1 to 20 in numerals and words</li> <li>Given a number identify one more and one less</li> <li>Read write and interpret mathematical statements involving addition, subtraction and equals signs</li> <li>Represent and use number bonds and related subtraction facts within 20</li> <li>Recognise and know the value of different denominations of coins and notes.</li> </ul>	<ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards beginning with 0 or 1, from any given number</li> <li>Count number to 100 in numerals; count in multiples of 2, 5 and 10</li> <li>Identify and represent numbers using objects and pictorial representations</li> <li>Read and write numbers from 1 to 20 in numerals and words</li> <li>Given a number identify one more and one less</li> <li>Read write and interpret mathematical statements involving addition, subtraction and equals signs</li> <li>Represent and use number bonds and related subtraction facts within 20</li> <li>Add and subtract one digit and two digit numbers to 20, including zero.</li> <li>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \_\_\_ - 9</math></li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards beginning with 0 or 1, from any given number</li> <li>Count number to 100 in numerals; count in multiples of 2, 5 and 10</li> <li>Identify and represent numbers using objects and pictorial representations</li> <li>Read and write numbers from 1 to 20 in numerals and words</li> <li>Given a number identify one more and one less</li> <li>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</li> <li>Compare, describe and solve practical problems for lengths and heights.</li> <li>Measure and begin to record lengths and heights.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</li> <li>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</li> <li>Recognise and name common 2D shapes.</li> <li>Recognise and name common 3D shapes.</li> </ul>	<ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards beginning with 0 or 1, from any given number</li> <li>Count number to 100 in numerals; count in multiples of 2, 5 and 10</li> <li>Identify and represent numbers using objects and pictorial representations</li> <li>Read and write numbers from 1 to 20 in numerals and words</li> <li>Given a number identify one more and one less</li> <li>Compare, describe and solve practical problems for mass/weight.</li> <li>Measure and begin to record mass/weight.</li> <li>Compare, describe and solve practical problems for time</li> <li>Measure and begin to record time (hours, seconds, minutes)</li> <li>Sequence events in chronological order using language (today, yesterday, morning, afternoon, first, next)</li> <li>Recognise and use language relating to dates, including days of the week, months and years.</li> <li>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</li> <li>Describe position, direction and movement including whole, half, quarter and three-quarter turns.</li> </ul>	<ul style="list-style-type: none"> <li>Read write and interpret mathematical statements involving addition, subtraction and equals signs</li> <li>Represent and use number bonds and related subtraction facts within 20</li> <li>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</li> <li>Add and subtract one digit and two digit numbers to 20, including zero.</li> <li>Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \_\_\_ - 9</math></li> <li>Compare, describe and solve practical problems for capacity and volume.</li> <li>Measure and begin to record capacity and volume.</li> </ul>

	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
	Place Value to 100 Addition & Subtraction	Addition & Subtraction (including money) Multiplication	Division Statistics Length & height	Fractions Shape	Position & direction Time	Mass & capacity Temperature
<b>Year 2</b>	<ul style="list-style-type: none"> <li>Read and write numbers to at least 100 in numerals and words</li> <li>Identify, represent and estimate numbers using different representations, including a number line</li> <li>Recognise the place value of each digit in a two digit number (tens, ones)</li> <li>Compare and order numbers from 0 up to 100; use &lt; &gt; and =</li> <li>Use place value and number facts to solve problems</li> <li>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>Show that addition of two numbers can be done in any order and subtractions of one number from another cannot</li> <li>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li> <li>Add and subtract numbers using concrete and pictorial representations including: <ul style="list-style-type: none"> <li>A 2 digit number and ones</li> <li>A 2 digit number and tens</li> <li>Two 2 digit numbers</li> <li>Adding 3 one digit numbers</li> </ul> </li> <li>Solve problems with addition and subtraction: <ul style="list-style-type: none"> <li>Using concrete and pictorial representations, including those involving numbers, quantities and measures</li> <li>Applying their increasing knowledge of mental and written method.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract numbers using concrete and pictorial representations including: <ul style="list-style-type: none"> <li>A 2 digit number and ones</li> <li>A 2 digit number and tens</li> <li>Two 2 digit numbers</li> <li>Adding 3 one digit numbers</li> </ul> </li> <li>Solve problems with addition and subtraction: <ul style="list-style-type: none"> <li>Using concrete and pictorial representations, including those involving numbers, quantities and measures</li> <li>Applying their increasing knowledge of mental and written method.</li> </ul> </li> <li>Count in steps of 2, 3 and 5 from 0, and in tens from any number forwards or backward.</li> <li>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers</li> <li>Show that multiplication of 2 numbers can be done in any order (commutative) and division of one number by another cannot.</li> <li>Calculate mathematical statements for multiplication within the multiplication tables and write them using the appropriate signs (x, ÷, +, -, =)</li> <li>Solve problems involving multiplication, using arrays, repeated addition, mental methods and multiplication facts including problems in context.</li> <li>Recognise and use symbols for pounds and pence; combine amounts to make a particular value</li> <li>Find different combinations of coins that equal the same amount</li> <li>Solve problems in a practical context including giving change</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers</li> <li>Show that multiplication of 2 numbers can be done in any order (commutative) and division of one number by another cannot.</li> <li>Count in steps of 2, 3 and 5 from 0, and in tens from any number forwards or backward.</li> <li>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers</li> <li>Calculate mathematical statements for division within the multiplication tables and write them using the appropriate signs (x, ÷, +, -, =)</li> <li>Solve problems involving division, using arrays, repeated subtraction, mental methods and division facts including problems in context.</li> <li>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li> <li>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>Ask and answer questions about totalling and comparing categorical data</li> <li>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit using rulers.</li> <li>Compare and order lengths and record the results using &gt;, &lt; and =</li> </ul>	<ul style="list-style-type: none"> <li>Recognise the place value of each digit in a two digit number (tens, ones)</li> <li>Use place value and number facts to solve problems</li> <li>Recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity.</li> <li>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> <li>Write simple fractions, e.g. <math>\frac{1}{2}</math> of 6 = 3</li> <li>Identify and describe the properties of shape, including the number of sides and line symmetry in a vertical line</li> <li>Identify 2D shapes on the surface of 3D shapes, e.g. Circle on a cylinder, triangle on a pyramid.</li> <li>Compare and sort common 2D shapes and everyday objects.</li> <li>Recognise and name 3D shapes (Cuboids, cubes, pyramids, spheres)</li> <li>Compare and sort common 3D shapes and everyday objects.</li> <li>Order and arrange combinations of mathematical objects in sequences and patterns</li> </ul>	<ul style="list-style-type: none"> <li>Order and arrange combinations of mathematical objects in sequences and patterns</li> <li>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotations as a turn in terms of right angles for quarter, half and three quarter turns (clockwise and anti-clockwise)</li> <li>Compare and sequence intervals of time</li> <li>Tell and write the time to 5 minutes including quarter past/to the hour and draw the hands on a clock face to show times</li> <li>Know the number of minutes in an hour and the number of hours in a day.</li> </ul>	<ul style="list-style-type: none"> <li>Choose and use appropriate standard units to estimate and measure mass (g/kg) to the nearest appropriate unit using scales.</li> <li>Compare and order mass and record the results using &gt;, &lt; and =</li> <li>Choose and use appropriate standard units to estimate and measure capacity (l/ml) to the nearest appropriate unit using measuring vessels.</li> <li>Compare and order volume/capacity and record the results using &gt;, &lt; and =</li> <li>Choose and use appropriate standard units to estimate and measure temperature (°c) to the nearest appropriate unit using a thermometer.</li> <li>Compare and order temperature and record the results using &gt;, &lt; and =</li> </ul>



	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
	Place value Addition	Subtraction Multiplication & division	Multiplication & division Length and perimeter Fractions	Fractions Mass Capacity	Decimals (including money) Time Statistics	Statistics Shape
<b>Year 3</b>	<ul style="list-style-type: none"> <li>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</li> <li>Identify, represent and estimate numbers using different representations</li> <li>Read and write numbers up to 1000 in numerals and words</li> <li>Recognise the place value of each digit in a three digit number (hundred, tens and ones)</li> <li>Compare and order numbers up to 1000</li> <li>Solve number problems and practical problems involving rounding</li> <li>Estimate the answer to a calculation and use the inverse to check</li> <li>Add and subtract numbers up to 3 digits, using formal written methods of columnar addition and subtraction.</li> <li>Solve problems including missing number problems using number facts, place value, and more complex addition and subtraction</li> <li>Add and subtract numbers mentally including: <ul style="list-style-type: none"> <li>A 3 digit number and ones</li> <li>A 3 digit number and tens</li> <li>A 3 digit number and hundreds.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</li> <li>Read and write numbers up to 1000 in numerals and words</li> <li>Recognise the place value of each digit in a three digit number (hundred, tens and ones)</li> <li>Estimate the answer to a calculation and use the inverse to check</li> <li>Add and subtract numbers up to 3 digits, using formal written methods of columnar addition and subtraction.</li> <li>Solve problems including missing number problems using number facts, place value, and more complex addition and subtraction</li> <li>Add and subtract numbers mentally including: <ul style="list-style-type: none"> <li>A 3 digit number and ones</li> <li>A 3 digit number and tens</li> <li>A 3 digit number and hundreds.</li> </ul> </li> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</li> <li>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2 digit numbers times 1 digit numbers, using mental and progressing to formal written methods.</li> </ul>	<ul style="list-style-type: none"> <li>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</li> <li>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2 digit numbers times 1 digit numbers, using mental and progressing to formal written methods.</li> <li>Solve problems including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects.</li> <li>Count up or down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one digit numbers or quantities by 10</li> <li>Recognise, find and write fractions of a discrete set of objects; unit fractions and non-unit fractions with small denominators</li> <li>Recognise and use fractions as numbers; unit fractions and non-unit fractions with small denominators</li> <li>Recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>Compare and order unit fractions and fractions with the same denominators</li> <li>Measure, compare, add and subtract lengths (m/cm/mm)</li> <li>Measure the perimeter of simple 2D shapes</li> </ul>	<ul style="list-style-type: none"> <li>Compare and order unit fractions and fractions with the same denominators</li> <li>Add and subtract fractions with the same denominator within one whole, e.g. <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math></li> <li>Solve problems that involve adding fractions of the same denominator within one whole and ordering simple fractions</li> <li>Measure, compare, add and subtract weight/mass (g/kg)</li> <li>Measure, compare, add and subtract volume/capacity (l/ml)</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract amounts of money to give change, using both pounds and pence in practical contexts</li> <li>Tell and write the time from an analogue clock, including using roman numerals from I to XII, and 12 hour and 24 hour clocks.</li> <li>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m. /p.m., morning, afternoon, noon and midnight.</li> <li>Know the number of seconds in a minute and the number of days in each month, year and leap year</li> <li>Compare durations of event, e.g. to calculate the time take by particular events or tasks</li> <li>Interpret and present data using bar charts, pictograms and tables</li> <li>Solve one-step and two-step questions, (e.g. how many more? Or how many fewer?) using information presented in scaled bar charts and pictograms and tables.</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and present data using bar charts, pictograms and tables</li> <li>Solve one-step and two-step questions, (e.g. how many more? Or how many fewer?) using information presented in scaled bar charts and pictograms and tables.</li> <li>Draw 2D shapes</li> <li>Make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.</li> <li>Recognise angles as a property of a shape or a description of a turn</li> <li>Identify right angles, recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle</li> <li>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</li> </ul>

	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
	Place value Addition	Subtraction Multiplication & division	Multiplication & division Length, perimeter and area Fractions	Fractions Decimals	Decimals (including money) Time Statistics	Statistics Shape Position and direction
<u>Year 4</u>	<ul style="list-style-type: none"> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Count backwards through zero to include negative numbers</li> <li>Identify, represent and estimate numbers using different representations</li> <li>Read roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value</li> <li>Find 1000 more or 1000 less than a given number</li> <li>Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)</li> <li>Order and compare numbers beyond 1000</li> <li>Round any number to the nearest 10, 100 or 1000</li> <li>Solve numbers and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>Estimate and use inverse operations to check calculations</li> <li>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why</li> </ul>	<ul style="list-style-type: none"> <li>Count in multiples of 6, 7, 9, 25 and 1000</li> <li>Count backwards through zero to include negative numbers</li> <li>Estimate and use inverse operations to check calculations</li> <li>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why</li> <li>Recall multiplication and division facts for multiplication tables up to 12 x 12</li> <li>Recognise and use factor pairs and commutativity in mental calculations</li> <li>Use place value, known and derived facts to multiply and divide mentally including: <ul style="list-style-type: none"> <li>Multiplying by 0 and 1</li> <li>Dividing by 1</li> <li>Multiplying together 3 digit numbers</li> </ul> </li> <li>Multiply 2 digit numbers and 3 digit numbers by a 1 digit number using formal written layout</li> <li>Solve problems involving multiplying and dividing, including using the distributive law to multiply 2 digit numbers by one digit; integer scaling problems and harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects</li> </ul>	<ul style="list-style-type: none"> <li>Recall multiplication and division facts for multiplication tables up to 12 x 12</li> <li>Recognise and use factor pairs and commutativity in mental calculations</li> <li>Multiply 2 digit numbers and 3 digit numbers by a 1 digit number using formal written layout</li> <li>Solve problems involving multiplying and dividing, including using the distributive law to multiply 2 digit numbers by one digit; integer scaling problems and harder correspondence problems such as <math>n</math> objects are connected to <math>m</math> objects</li> <li>Convert between different units of the appropriate measure</li> <li>Estimate, compare and calculate different measures</li> <li>Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m</li> <li>Find the area of rectilinear shapes by counting squares</li> <li>Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10.</li> <li>Add and subtract fractions with the same denominator</li> <li>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> </ul>	<ul style="list-style-type: none"> <li>Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10.</li> <li>Add and subtract fractions with the same denominator</li> <li>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> <li>Recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>Recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math> and <math>\frac{3}{4}</math></li> <li>Solve simple measure and money problems involving fractions and decimals to 2 decimal places</li> </ul>	<ul style="list-style-type: none"> <li>Convert between different units of the appropriate measure</li> <li>Solve simple measure and money problems involving fractions and decimals to 2 decimal places</li> <li>Estimate, compare and calculate different measures</li> <li>Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10.</li> <li>Round decimals with one decimal place to the nearest whole number</li> <li>Compare numbers with the same number of decimal places up to 2 decimal places</li> <li>Find the effect of dividing a 1 or 2 digit number by 10 and 100, identifying the value of the digits in answers as ones, tenths and hundredths</li> <li>Estimate, compare and calculate different measures, including money in pounds and pence</li> <li>Read, write and convert time between analogue and digital 12 and 24 hour clocks</li> <li>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</li> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time/lie graphs</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul>	<ul style="list-style-type: none"> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time/lie graphs</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> <li>Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes</li> <li>Identify lines of symmetry in 2D shapes presented in different orientations</li> <li>Identify acute and obtuse angles and compare and order angles up to 2 right angles by size</li> <li>Identify lines of symmetry in 2D shapes presented in different orientations</li> <li>Describe positions on a 2D grid as coordinates in the first quadrant</li> <li>Describe movements between positions as translations of a given unit to the left/right and up/down</li> <li>Plot specified points and draw sides to complete a give polygon</li> </ul>

	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
	Place value Four operations	Four operations Fractions	Fractions Decimals Percentages	Converting units Perimeter, area & volume Statistics	Shape Position & direction Four operations re-cap	Fractions & decimals recap
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Count forwards or back in steps of powers of 10 for any given number up to 1,000,000</li> <li>Count forwards and back with positive and negative whole numbers, including through zero</li> <li>Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit</li> <li>Read roman numerals to 1000 (M) and recognise years written in roman numerals</li> <li>Interpret negative numbers in context</li> <li>Round any number up to 1,000,000 to the nearest 10/100/1000/10,000 or 100,000</li> <li>Use rounding to check answers Add and subtract whole numbers with more than 4 digits including using formal written methods</li> <li>Add/ subtract mentally with increasingly large numbers</li> <li>Solve addition and subtraction multi-step problems in contexts, deciding which operation to use and why</li> <li>Identify multiples and factors of a number and common factors of 2 given numbers</li> <li>Know and use the vocabulary of prime and non-prime (composite) numbers</li> <li>Establish if a number up to 100 is a prime, and recall all prime numbers up to 19</li> <li>Recognise and use square and cube numbers and their respective notations (<sup>2</sup> or <sup>3</sup>)</li> </ul>	<ul style="list-style-type: none"> <li>Multiply numbers up to 4 digits by a 1 or 2 digit number using formal written methods</li> <li>Multiply &amp; divide mentally drawing on known facts</li> <li>Divide numbers up to 4 digits by a 1 digit number using formal written methods, interpreting remainder appropriately</li> <li>Multiply &amp; divide numbers by 10/100/1000</li> <li>Solve problems involving multiplication &amp; division including knowledge of factors, multiples, squares and cubes</li> <li>Solve problems involving multiplication &amp; division, including scaling by simple fractions and problems involving simple rates</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>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 &gt; 1 as mixed a mixed number, e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math></li> <li>Compare and order fractions whose denominators are all multiples of the same number</li> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>Multiply proper fractions and mixed numbers by whole numbers (supported by materials and diagrams)</li> </ul>	<ul style="list-style-type: none"> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as mixed a mixed number, e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math></li> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>Multiply proper fractions and mixed numbers by whole numbers (supported by materials and diagrams)</li> <li>Read &amp; write decimal numbers as fractions, e.g. <math>0.71 = \frac{71}{100}</math></li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place</li> <li>Read, write, order and compare numbers up to 3 decimal places</li> <li>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{4}, \frac{1}{2}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}</math> and <math>\frac{3}{4}</math> and fractions with a denominator of a multiple of 10 or 25</li> </ul>	<ul style="list-style-type: none"> <li>Convert between different units of metric measure</li> <li>Understand and use approximate equivalences between metric and common imperial units (inches, pounds, pints)</li> <li>Use all four operations to solve problems involving measure (length, mass, capacity, money), using decimal notation, including scaling</li> <li>Solve problems involving converting between units of time</li> <li>Measure and calculate the perimeter of composite rectilinear shapes in cm and m</li> <li>Calculate and compare the area of rectangles and including using standard units (cm<sup>2</sup>/m<sup>2</sup>) and estimate the area of irregular shapes</li> <li>Estimate volume ( e.g. using 1cm<sup>3</sup> blocks to build cuboids) and capacity</li> <li>Complete, read and interpret information in tables, including timetables</li> <li>Solve comparison, sum and difference problems using information presented in a line graph</li> </ul>	<ul style="list-style-type: none"> <li>Use rounding to check answers,</li> <li>Identify multiples and factors of a number and common factors of 2 given numbers</li> <li>Know and use the vocabulary of prime and non-prime (composite) numbers</li> <li>Establish if a number up to 100 is a prime, and recall all prime numbers up to 19</li> <li>Recognise and use square and cube numbers and their respective notations (<sup>2</sup> or <sup>3</sup>)</li> <li>Multiply &amp; divide numbers by 10/100/1000</li> <li>Distinguish between regular and irregular polygon based on reasoning about equal sides and angles</li> <li>Use the properties of rectangles to deduce related facts and find missing lengths and angles</li> <li>Identify 3D shapes from 2D 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 a whole turn (total 360°)</li> <li>Angles at a point on a straight line and half a turn (total 180°)</li> <li>Other multiples of 90°</li> </ul> </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>	<ul style="list-style-type: none"> <li>Read &amp; write decimal numbers as fractions, e.g. <math>0.71 = \frac{71}{100}</math></li> <li>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> <li>Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place</li> <li>Read, write, order and compare numbers up to 3 decimal places</li> <li>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{4}, \frac{1}{2}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}</math> and <math>\frac{3}{4}</math> and fractions with a denominator of a multiple of 10 or 25</li> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as mixed a mixed number, e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math></li> <li>Compare and order fractions whose denominators are all multiples of the same number</li> <li>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as mixed a mixed number, e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math></li> <li>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>Multiply proper fractions and mixed numbers by whole numbers (supported by materials and diagrams)</li> </ul>



	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
	Place value Four operations	Four operations Fractions	Decimals & percentages Ratio & proportion Algebra	Converting units Perimeter, area & volume Statistics	Shape Position & direction	Post SATs Investigations
<b>Year 6</b>	<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>Perform mental calculations, including with mixed operations and large numbers</li> <li>Use knowledge of the order of operations to carry out calculations involving the four operations</li> <li>Solve addition and subtraction multi-step problems in context, deciding which operations to use and why</li> <li>Identify common factors, common multiples and prime numbers</li> <li>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> </ul>	<ul style="list-style-type: none"> <li>Multiply and divide numbers by 10, 100 and 1000, giving answers up to 3 decimal places</li> <li>Identify the value of each digit in numbers given to 3 decimal places</li> <li>Multiply 1 digit numbers with up to 2 decimal places by whole numbers</li> <li>Multiply multi-digit numbers up to 4 digits by a 2 digit whole number using formal written methods</li> <li>Divide numbers up to 4 digits by a 2 digit whole number using formal written methods, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context</li> <li>Perform mental calculations, including with mixed operations and large numbers</li> <li>Solve problems involving addition, subtraction, multiplication and division</li> <li>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> <li>Compare and order fractions including fractions greater than a whole</li> <li>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>)</li> <li>Divide proper fractions by whole numbers (e.g. <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>)</li> </ul>	<ul style="list-style-type: none"> <li>Multiply and divide numbers by 10, 100 and 1000, giving answers up to 3 decimal places</li> <li>Identify the value of each digit in numbers given to 3 decimal places</li> <li>Multiply 1 digit numbers with up to 2 decimal places by whole numbers</li> <li>Associate a fraction with division and calculate decimal fraction equivalents (e.g. <math>\frac{3}{8}</math> is the same as <math>3 \div 8 = 0.375</math>)</li> <li>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li> <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 the calculation of percentages of amounts and the use of percentages for comparison</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>Use simple formulae</li> <li>Generate and describe linear number sequences</li> <li>Express missing number problems algebraically</li> <li>Find pairs of numbers to satisfy an equation with two unknowns</li> <li>Enumerate possibilities of combinations of 2 variables</li> </ul>	<ul style="list-style-type: none"> <li>Use simple formulae</li> <li>Use negative numbers in context, and calculate intervals across zero</li> <li>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places</li> <li>Use, read, write and convert between standard units, converting measurements of length, mass, volume and time, using decimal notation up to 3 decimal places</li> <li>Convert between kilometres and miles</li> <li>Recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>Recognise when it is possible to use formulae for area and volume of shapes</li> <li>Calculate the area of parallelograms and triangles</li> <li>Calculate, estimate and compare volume of cubes and cuboids using standard units (<math>\text{cm}^3/\text{m}^3</math>)</li> <li>Interpret and construct pie charts and line graphs and use these to solve problems</li> <li>Calculate and interpret the mean as an average</li> </ul>	<ul style="list-style-type: none"> <li>Use negative numbers in context, and calculate intervals across zero</li> <li>Draw 2D shapes using given dimensions and angles</li> <li>Compare and classify geometric shapes based on their properties and sizes</li> <li>Illustrate and name parts of a circle, including radius, diameter and circumference, and know that the diameter is twice the radius</li> <li>Recognise, describe and build simple 3D shapes, including making nets</li> <li>Find unknown angles in any triangle, quadrilateral and regular polygon</li> <li>Recognise angles where they meet at a point, on a straight line or are vertically opposite, and find missing angles</li> <li>Describe positions on the full coordinate grid (4 quadrant)</li> <li>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> </ul>	<p>During this time Year 6 will be getting ready for secondary mathematics lessons. Children will spend their time re-visiting Year 6 specific objectives in more detail (those covered in algebra and ratio and proportion units). They will also develop skills using familiar equipment such as protractors and compasses, and looking at new equipment including tracing paper and calculators.</p> <p>Children will also investigate mathematic concepts such as the Fibonacci sequence, triangular numbers and elements of Da Vinci's perfect man.</p> <p>If required children may also have some extra maths intervention before starting at secondary school should we feel it necessary to boost skills, knowledge and confidence in mathematics, or perhaps be used in younger year groups as 'Maths Experts'</p>