

# Maths Progression of Knowledge and Skills

## Year 1

Place Value	Addition and Subtraction	Multiplication and Division	Fractions
<p><b>Count – Aut 1, Aut 4, Spr 2, Sumr 4</b></p> <ul style="list-style-type: none"> <li>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>Count numbers to 100 in numerals; count in multiples of twos, fives and tens</li> </ul> <p><b>Represent – Aut 1, Aut 4, Spr 2, Sumr 4</b></p> <ul style="list-style-type: none"> <li>identify and represent numbers using objects and pictorial representations</li> <li>read and write numbers to 100 in numerals</li> <li>read and write numbers from 1 to 20 in numerals and words</li> </ul> <p><b>Use Place Value and Compare – Aut 1, Spr 1, Spr 3, Sumr 4</b></p> <ul style="list-style-type: none"> <li>given a number, identify one more and one less</li> </ul>	<p><b>Calculations – Aut 2, Spr 2</b></p> <ul style="list-style-type: none"> <li>add and subtract one-digit and two digit numbers to 20, including zero</li> </ul> <p><b>Problems – Aut 2, Spr 2</b></p> <ul style="list-style-type: none"> <li>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></li> </ul>	<p><b>Problems – Sumr 1</b></p> <ul style="list-style-type: none"> <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>	<p><b>Recognise and Write – Sumr 2</b></p> <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> </ul>
Ratio and proportion, algebra	Measurement	Geometry	
<p><b>Algebra - Aut 2, Spr 2</b></p> <ul style="list-style-type: none"> <li>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></li> </ul> <p>Note – although formal algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the ‘missing number’ objectives from Y1/2/3</p>	<p><b>Using measures – Spr 4, Spr 5, Sumr 6</b></p> <ul style="list-style-type: none"> <li>compare, describe and solve practical problems for: <ul style="list-style-type: none"> <li>lengths and heights</li> <li>capacity and volume</li> </ul> </li> <li>measure and begin to record the following: <ul style="list-style-type: none"> <li>lengths and heights</li> <li>capacity and volume</li> </ul> </li> </ul> <p><b>Money – Sumr 5</b></p> <ul style="list-style-type: none"> <li>recognise and know the value of different denominations of coins and notes</li> </ul> <p><b>Time – Sumr 6</b></p> <ul style="list-style-type: none"> <li>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> <li>recognise and use language relating to dates, including days of the week, weeks, 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> </ul>	<p><b>2-D Shapes – Aut 3</b></p> <ul style="list-style-type: none"> <li>recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]</li> </ul> <p><b>3-D Shapes – Aut 3</b></p> <ul style="list-style-type: none"> <li>recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]</li> </ul> <p><b>Position and Direction – Sumr 3</b></p> <ul style="list-style-type: none"> <li>describe position, direction and movement, including whole, half, quarter and three-quarter turns</li> </ul>	

# Year 2

Place Value	Addition and Subtraction	Multiplication and Division	Fractions
<p><b>Count – Aut 1</b></p> <ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> </ul> <p><b>Represent – Aut 1</b></p> <ul style="list-style-type: none"> <li>read and write numbers to at least 100 in numerals and in words</li> <li>identify, represent and estimate numbers using different representations, including the number line</li> </ul> <p><b>Use Place Value and Compare – Aut 1</b></p> <ul style="list-style-type: none"> <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 = signs</li> </ul> <p><b>Problems/Rounding – Aut 1</b></p> <ul style="list-style-type: none"> <li>use place value and number facts to solve problems</li> </ul>	<p><b>Calculations – Aut 2</b></p> <ul style="list-style-type: none"> <li>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:               <ul style="list-style-type: none"> <li>Ø a two-digit number and ones</li> <li>Ø a two-digit number and tens</li> <li>Ø two two-digit numbers</li> <li>Ø adding three one digit numbers</li> </ul> </li> </ul> <p><b>Problems – Aut 2</b></p> <ul style="list-style-type: none"> <li>solve problems with addition and subtraction:               <ul style="list-style-type: none"> <li>Ø using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>Ø applying their increasing knowledge of mental and written methods</li> </ul> </li> </ul>	<p><b>Recall/Use – Aut 3, Spr 1</b></p> <ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers</li> <li>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li> </ul> <p><b>Calculations – Spr 2</b></p> <ul style="list-style-type: none"> <li>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs</li> </ul> <p><b>Problems – Spr 2</b></p> <ul style="list-style-type: none"> <li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</li> </ul>	<p><b>Recognise and Write – Sumr 2</b></p> <ul style="list-style-type: none"> <li>recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> </ul> <p><b>Compare – Sumr 1</b></p> <p>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></p> <p><b>Calculations – Sumr 1</b></p> <ul style="list-style-type: none"> <li>write simple fractions from example <math>\frac{1}{2}</math> of 6 = 3</li> </ul>
Ratio and proportion, algebra	Measurement	Geometry	Statistics
<p><b>Algebra</b></p> <ul style="list-style-type: none"> <li>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li> </ul> <p>Note – although formal algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the ‘missing number’ objectives from Y1/2/3</p>	<p><b>Using measures – Spr 3, Spr 4</b></p> <ul style="list-style-type: none"> <li>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</li> </ul> <p><b>Money – Spr 1</b></p> <ul style="list-style-type: none"> <li>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>find different combinations of coins that equal the same amounts of money</li> <li>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> </ul> <p><b>Time – Sumr 2</b></p> <ul style="list-style-type: none"> <li>compare and sequence intervals of time</li> <li>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</li> <li>know the number of minutes in an hour and the number of hours in a day</li> </ul>	<p><b>2-D Shapes – Aut 3</b></p> <ul style="list-style-type: none"> <li>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</li> <li>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</li> <li>compare and sort common 2-D shapes and everyday objects</li> </ul> <p><b>3-D Shapes – Aut 3</b></p> <ul style="list-style-type: none"> <li>recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]</li> <li>compare and sort common 3-D shapes and everyday objects</li> </ul> <p><b>Position and Direction – Sumr 4</b></p> <ul style="list-style-type: none"> <li>order and arrange combinations of mathematical objects in patterns and sequences</li> <li>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 anticlockwise)</li> </ul>	<p><b>Present and Interpret Data – Sumr 3</b></p> <ul style="list-style-type: none"> <li>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li> </ul> <p><b>Solve Statistical Problems – Sumr 3</b></p> <ul style="list-style-type: none"> <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> </ul>