



## Year 5 Summer 1

<p><b>Starter suggestions for Number</b></p> <ul style="list-style-type: none"> <li>▪ Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents.</li> <li>▪ Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, and 1000 from any positive integer or decimal.</li> <li>▪ Count forwards and backwards in equal steps and describe any patterns in the sequence.</li> <li>▪ Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places.</li> <li>▪ Know by heart facts for all multiplication tables up to 12 x 12.</li> <li>▪ Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers).</li> <li>▪ Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).</li> <li>▪ Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).</li> <li>▪ Derive related facts from those already known (e.g. <math>4 \times 0.8</math> linked to <math>4 \times 8</math> or <math>3 + 7 = 10</math> linked to <math>0.3 + 0.7 = 1</math>).</li> <li>▪ Use partitioning to double or halve any number, including decimals to two decimal places.</li> <li>▪ Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg etc.</li> <li>▪ Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places.</li> <li>▪ Count in fraction steps and convert equivalent fractions (e.g. count in steps of <math>\frac{1}{12}</math> converting to <math>\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}</math> ...).</li> </ul>	<p><b>Starter suggestions for Measurement, Geometry and Statistics</b></p> <ul style="list-style-type: none"> <li>▪ Convert between metric units of measure by multiplying and dividing by powers of 10.</li> <li>▪ Know approximate metric and common imperial equivalences.</li> <li>▪ Read, write and convert between units of time.</li> <li>▪ Identify and describe properties of 2-D and 3-D shapes, including regular and irregular.</li> <li>▪ Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of shapes).</li> <li>▪ Identify angles which are acute, obtuse and reflex.</li> <li>▪ Estimate the size of angles.</li> <li>▪ Calculate missing angles around a point.</li> <li>▪ Compare and classify geometric shapes based on their properties.</li> <li>▪ Read scales to an appropriate degree of accuracy.</li> <li>▪ Read and plot coordinates in the first quadrant.</li> <li>▪ Read and interpret in formation in all types of graph and table, including line graphs and timetables.</li> </ul>
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	Main learning	Rationale
<p><b>Week 1</b> Place value including decimals</p>	<ul style="list-style-type: none"> <li>▪ <i>Identify, represent and estimate numbers using the number line.</i></li> <li>▪ Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</li> <li>▪ <i>Identify the value of each digit to three decimal places.</i></li> <li>▪ Read, write, order and compare numbers with up to three decimal places.</li> <li>▪ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</li> <li>▪ <i>Count forwards and backwards in decimal steps.</i></li> <li>▪ <i>Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal.</i></li> <li>▪ Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</li> <li>▪ Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>▪ Solve number problems and practical problems that involve all of the above.</li> <li>▪ <i>Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number.</i></li> </ul>	<p>Pupils identify the place value in large whole numbers.</p> <p>They continue to use number in context, including measurement. Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.</p> <p>They should recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule.</p> <p>They should recognise and describe linear number sequences (for example, <math>3, 3\frac{1}{2}, 4, 4\frac{1}{2}, \dots</math>), including those involving fractions and decimals, and find the term-to-term rule in words (for example, add <math>\frac{1}{2}</math>).</p> <p>All place value work should be presented in contexts such as measurement, statistics or other real life scenarios.</p>
<p><b>Week 2</b> Fractions</p>	<ul style="list-style-type: none"> <li>▪ Recognise mixed numbers and improper fractions and convert from one form to another.</li> <li>▪ Compare and order fractions whose denominators are all multiples of the same number (<i>including on a number line</i>).</li> <li>▪ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</li> <li>▪ Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams).</li> <li>▪ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</li> </ul>	<p>Children consolidate their understanding of fractions through identifying, writing, comparing, ordering and calculating equivalent fractions, all supported through practical and visual approaches.</p> <p>Children's calculating with fractions involves addition and subtraction and continues to develop to include multiplying proper fractions by whole numbers e.g. <math>\frac{2}{5} \times 7</math>. All of the calculating with fractions should be supported through practical and pictorial methods.</p>



Week 3	Main learning	Rationale
<b>Week 3</b> <b>Measures (time and converting units) and statistics</b>	<ul style="list-style-type: none"> <li>▪ <i>Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks.</i></li> <li>▪ Complete, read and interpret information in tables, including timetables.</li> <li>▪ Solve problems involving converting between units of time.</li> <li>▪ Understand and use approximate equivalences between metric and common imperial units such as pints.</li> <li>▪ Solve comparison, sum and difference problems using information presented in <i>all types of graph including a line graph.</i></li> </ul>	<p>Pupils use all four operations in problems involving time, including conversions (e.g. days to weeks, expressing the answer as weeks and days). They use their knowledge of the 7x table to convert days to weeks, and use in contexts. Children could use their work in science or PE (athletics) to generate times to use in lessons. Children apply their knowledge of calculation in the context of statistics, using all types of graph. They use line graphs as a way of converting between metric and imperial units and then use these line graphs to solve problems relating to metric and everyday imperial units.</p>
<b>Week 4</b> <b>Geometry</b>	<ul style="list-style-type: none"> <li>▪ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>▪ Use the properties of rectangles to deduce related facts and missing lengths and angles.</li> <li>▪ Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</li> <li>▪ Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</li> <li>▪ Describe positions on the first quadrant of a coordinate grid.</li> <li>▪ Plot specified points and complete shapes.</li> <li>▪ Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</li> </ul>	<p>Pupils continue to classify shapes using geometrical properties, extending to classifying different triangles (for example, isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, and trapezium). This will include irregular shapes and shapes in different orientations. When children classify shapes, they should discuss the properties that are the same and different and use these to determine the features of a given shape. Children should compare lengths and angles to decide if a polygon is regular or irregular. They then apply this knowledge (as well as other knowledge about the properties of shapes) when plotting coordinates of the corners of 2-D shapes in the first quadrant, and also when reflecting and translating shapes. Reflection should be in lines parallel to the axes.</p>
<b>Week 5</b> <b>Addition and subtraction</b>	<ul style="list-style-type: none"> <li>▪ Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction).</li> <li>▪ Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places.</li> <li>▪ <i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</i></li> <li>▪ <i>Select a mental strategy appropriate for the numbers involved in the calculation.</i></li> <li>▪ <i>Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</i></li> <li>▪ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> </ul>	<p>Children learn when it is appropriate to use mental and written methods of calculation. Children make links with their knowledge of rounding numbers to the nearest 10, 100 and 1000 to estimate the answers to calculations. Calculations should be in contexts including, money, measures, real life problems and number enquiries.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>
<b>Week 6</b> <b>Multiplication and division</b>	<ul style="list-style-type: none"> <li>▪ Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.</li> <li>▪ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</li> <li>▪ Recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>).</li> <li>▪ <i>Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).</i></li> <li>▪ <i>Select a mental strategy appropriate for the numbers involved in the calculation.</i></li> <li>▪ Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> </ul>	<p>They should apply their knowledge of multiplication and division facts up to 12 x 12 to larger numbers. Children need to understand what multiplication and division are and how they apply in real life situations, including scaling up and down. Children should interpret remainders in different ways, including as whole numbers, as fractions, as decimals and rounding up or down appropriate to the context.</p> <p>Written methods should be agreed by the school and shared in the progression in written calculations policy. Efficient written methods are required to be taught by the end of Key Stage 2.</p>