

# Key Learning in Mathematics at Allesley Primary School – Year 4

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
<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>Count up and down in hundredths</li> <li>Read and write numbers to at least 10 000</li> <li>Read and write numbers with up to two decimal places</li> <li>Recognise the <b>place value</b> of each digit in a four-digit number</li> <li><b>Identify the value of each digit to two decimal places</b></li> <li><b>Partition numbers in different ways</b> (e.g. <math>2.3 = 2 + 0.3</math> &amp; <math>1 + 1.3</math>)</li> <li>Identify, represent and estimate numbers using different representations (including the number line)</li> <li>Order and compare numbers beyond 1000</li> <li>Order and compare numbers with the same number of decimal places up to two decimal places</li> <li>Find 0.1, 1, 10, 100 or 1000 more or less than a given number</li> <li>Round any number to the nearest 10, 100 or 1000</li> <li>Round decimals (one decimal place) to the nearest whole number</li> <li>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer</li> <li>Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps</li> <li>Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value</li> <li>Solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> </ul>	<ul style="list-style-type: none"> <li>Choose an <b>appropriate</b> strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)</li> <li>Select a mental strategy appropriate for the numbers involved in the calculation</li> <li>Recall and use addition and subtraction facts for 100</li> <li>Recall and use <math>+/ -</math> facts for multiples of 100 totalling 1000</li> <li>Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)</li> <li>Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place</li> <li>Add and subtract numbers with up to 4 digits and decimals with one decimal place using a written method of addition and subtraction where appropriate</li> <li><b>Estimate; use inverse operations</b> to check answers to a calculation</li> <li>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why (Singapore bar)</li> <li>Solve addition and subtraction problems involving missing numbers</li> </ul>	<ul style="list-style-type: none"> <li>Choose an <b>appropriate strategy</b> to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)</li> <li>Recognise and use factor pairs and commutativity in mental calculations</li> <li>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li><b>Use partitioning to double or halve any number, including decimals to one decimal place</b></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 three numbers</li> </ul> </li> <li>Multiply two-digit and three-digit numbers by a one-digit number using a written layout</li> <li>Divide numbers up to 3 digits by a one-digit number using a written method (partial tables) and <b>interpret remainders</b> appropriately for the context</li> <li>Use <b>estimation and inverse</b> to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> <li>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, <b>division (including interpreting remainders), integer scaling problems and harder correspondence problems such as n objects are connected to m objects</b></li> </ul>
Number – fractions and decimals	Geometry – properties of shapes	Measurement
<ul style="list-style-type: none"> <li><b>Understand that a fraction is one whole number divided by another</b> (e.g. <math>\frac{3}{4}</math> can be interpreted as <math>3 \div 4</math>)</li> <li>Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators</li> <li>Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</li> <li><b>Count on and back in steps of unit fractions</b></li> <li><b>Compare and order</b> unit fractions and fractions with the same denominators (including on a number line)</li> <li>Recognise and <b>show, using diagrams</b>, families of common equivalent fractions</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>, <math>\frac{3}{4}</math></li> <li><b>Add and subtract fractions with the same denominator (using diagrams)</b></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>Solve simple measure and money problems involving fractions and decimals to two decimal places</li> </ul>	<ul style="list-style-type: none"> <li>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>Identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>Complete a simple symmetric figure with respect to a specific line of symmetry</li> <li>Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines</li> <li>Identify acute and obtuse angles and compare and order angles up to two right angles by size</li> </ul>	<ul style="list-style-type: none"> <li><b>Estimate, compare and calculate</b> different measures, including money in pounds and pence</li> <li>Order temperatures including those below <math>0^{\circ}\text{C}</math></li> <li>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li><b>Know area is a measure of surface within a given boundary</b></li> <li>Find the area of rectilinear shapes by counting squares</li> <li><b>Convert between different units of measure</b> [e.g. kilometre to metre; hour to minute]</li> <li><b>Read, write and convert time between analogue and digital 12- and 24-hour clocks</b></li> <li><b>Write amounts of money using decimal notation</b></li> <li>Recognise that one hundred 1p coins equal £1 and that each coin is <math>\frac{1}{100}</math> of £1</li> <li><b>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days and problems involving money and measures</b></li> </ul>
	Geometry – position and direction	
	<ul style="list-style-type: none"> <li>Describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>Plot specified points and draw sides to complete a given polygon</li> <li>Describe movements between positions as translations of a given unit to the left/right and up/down</li> </ul>	
	Statistics	
	<ul style="list-style-type: none"> <li>Use a variety of sorting diagrams to compare and classify numbers and geometric shapes based on their properties and sizes</li> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, time graphs</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul>	