

# HIGH LITTLETON CHURCH OF ENGLAND PRIMARY SCHOOL

## MATHEMATICS OVERVIEW

### EYFS TO YEAR 2

Number and Place Value			
	Reception	Year 1	Year 2
	<b>Children are taught to:</b>		
	<p><b>Development Matters Mathematics - children in Reception will be learning to:</b></p> <p>Count objects, actions and sounds. Subitise. Link the number symbol (numeral) with its cardinal number value. Count beyond ten. Compare numbers. Understand the 'one more than/one less than' relationship between consecutive numbers. Explore the composition of numbers to 10. Automatically recall number bonds for numbers 0–10. Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. Continue, copy and create repeating patterns. Compare length, weight and capacity.</p> <p><b>Statutory ELG: Number</b> Children at the expected level of development will: Have a deep understanding of number to 10, including the composition of each number;- Subitise (recognise quantities without counting) up to 5; - Automatically recall (without reference to rhymes,</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100. Count in multiples of twos, fives and tens. Given a number, identify one more and one less. 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. Read and write numbers from 1 to 20 in numerals and words.</p>	<p>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. Recognise the place value of each digit in a two-digit number (tens, ones: 27 is 20 + 7). Identify, represent and estimate numbers in different ways, including the number line. Compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs. Read and write numbers to at least 100 in numbers and words. Use place value and number facts to solve problems.</p>

<p>counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts</p> <p><b>Statutory ELG: Numerical Patterns</b> Children at the expected level of development will: - 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 within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p> <p><b>Statutory Educational Programme: Mathematics</b> In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.</p>		
<p><b>For more detail Birth to 5 Number Range 5</b></p>	<p><b>Addition and Subtraction</b></p>	
<p>Comparison</p> <ul style="list-style-type: none"> <li>• Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same!</li> </ul> <p>Counting</p> <ul style="list-style-type: none"> <li>• May enjoy counting verbally as far as they can go</li> <li>• Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5.</li> </ul>	<p>Read, write and answer questions involving addition (+), subtraction (-) and equals (=) signs. Use number bonds and related subtraction facts within 20.</p> <p>Add and subtract one-digit and two-digit numbers to 20.</p> <p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictures.</p> <p>Solve missing number problems such as <math>7 = ? - 9</math>.</p>	<p><i>Solve problems with addition and subtraction. Use objects and pictures, including those involving numbers, quantities and measures. Applying their increasing knowledge of mental and written methods. Recall and use addition and subtraction facts to 20 fluently, (<math>20 + 0 = 20</math>, <math>19 + 1 = 20</math>, <math>18 + 2 = 20</math> etc.) and derive and use related facts up to 100.</i></p>

<ul style="list-style-type: none"> <li>• Uses some number names and number language within play, and may show fascination with large number</li> <li>• Begin to recognise numerals 0 to 10</li> </ul> <p>Cardinality</p> <ul style="list-style-type: none"> <li>• Subitises one, two and three objects (without counting)</li> <li>• Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle)</li> <li>• Links numerals with amounts up to 5 and maybe beyond</li> <li>• Explores using a range of their own marks and signs to which they ascribe mathematical meanings</li> </ul> <p>Composition</p> <ul style="list-style-type: none"> <li>• Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers</li> <li>• Beginning to use understanding of number to solve practical problems in play and meaningful activities</li> <li>• Beginning to recognise that each counting number is one more than the one before</li> <li>• Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same</li> </ul> <p><b>Range 6</b></p> <p>Comparison</p> <ul style="list-style-type: none"> <li>• Uses number names and symbols when comparing numbers, showing interest in large numbers</li> <li>• Estimates of numbers of things, showing understanding of relative size</li> </ul> <p>Counting</p> <ul style="list-style-type: none"> <li>• Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0</li> </ul>		<p>Add and subtract numbers using objects, pictures and mentally, including:</p> <ul style="list-style-type: none"> <li>• <i>a two-digit number and ones</i> (<math>23 + 5 = / 42 - 4 =</math>)</li> <li>• <i>a two-digit number and tens</i> (<math>26 + 30 / 64 - 20 =</math>)</li> <li>• <i>two two-digit numbers</i> (<math>31 + 46 = / 52 - 21 =</math>)</li> <li>• <i>adding three one-digit numbers</i> (<math>9 + 6 + 4 =</math>)</li> <li>• <i>show that addition of two numbers can be done in any order and subtraction of one number from another cannot</i></li> <li>• <i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems</i></li> </ul>
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	<ul style="list-style-type: none"> <li>• Increasingly confident at putting numerals in order 0 to 10 (ordinality) Cardinality</li> <li>• Engages in subitising numbers to four and maybe five</li> <li>• Counts out up to 10 objects from a larger group</li> <li>• Matches the numeral with a group of items to show how many there are (up to 10)</li> </ul> <p>Composition</p> <ul style="list-style-type: none"> <li>• Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects</li> <li>• Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three</li> <li>• In practical activities, adds one and subtracts one with numbers to 10</li> <li>• Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and “+” or “-“</li> </ul>		
<b>Multiplication and Division</b>			
		<p>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects and pictures.</p>	<p>Remember and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p> <p>Write a number sentence for multiplication and division using the correct 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, and division of one number by another cannot.</p> <p>Solve problems involving multiplication and division, using arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context.</p>

<b>Fractions</b>		
	<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity.</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<p>Recognise, find, name and write the correct 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, a shape, a set of objects or a quantity.</p> <p>Write simple fractions for example, <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>.</p>
<b>For more detail Birth to 5 Measures Range 5</b>	<b>Measure</b>	
<ul style="list-style-type: none"> <li>• In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items</li> <li>• Recalls a sequence of events in everyday life and stories</li> </ul> <p><b>Range 6</b></p> <ul style="list-style-type: none"> <li>• Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy</li> <li>• Becomes familiar with measuring tools in everyday experiences and play</li> <li>• Is increasingly able to order and sequence events using everyday language related to time</li> <li>• Beginning to experience measuring time with timers and calendars</li> </ul>	<p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>• lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half)</li> <li>• mass or weight (e.g. heavy/light, heavier than, lighter than)</li> <li>• capacity/volume (full/empty, more than, less than, quarter)</li> <li>• time (quicker, slower, earlier, later)</li> <li>•</li> </ul> <p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> <li>• lengths and heights</li> <li>• mass/weight</li> <li>• capacity and volume</li> <li>• time (hours, minutes, seconds)</li> <li>• recognise and know the value of different coins and notes</li> <li>• sequence events in chronological order using language such as: 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>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>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>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>

	<b>For more detail Birth to 5 Shape Range 5</b>	<b>Shape</b>	
	<ul style="list-style-type: none"> <li>• Chooses items based on their shape which are appropriate for the child's purpose</li> <li>• Responds to both informal language and common shape names</li> <li>• Shows awareness of shape similarities and differences between objects</li> <li>• Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes</li> <li>• Attempts to create arches and enclosures when building, using trial and improvement to select blocks</li> </ul> <p><b>Range 6</b></p> <ul style="list-style-type: none"> <li>• Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shape</li> <li>• Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes</li> <li>• Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build</li> </ul>	<p>Recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> <li>• 2-D shapes (e.g. rectangles (including squares), circles and triangles)</li> <li>• 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres).</li> </ul>	<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. 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>
	<b>For more detail Birth to 5 Spatial Awareness Range 5</b>	<b>Space</b>	
	<ul style="list-style-type: none"> <li>• Responds to and uses language of position and direction</li> <li>• Predicts, moves and rotates objects to fit the space or create the shape they would like</li> </ul> <p><b>Range 6</b></p> <ul style="list-style-type: none"> <li>• Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints</li> <li>• Investigates turning and flipping objects in order to make shapes fit and create models; predicting</li> </ul>	<p>Describe position, directions and movements, including half, quarter and three-quarter turns.</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>and visualising how they will look (spatial reasoning)</p> <ul style="list-style-type: none"> <li>• May enjoy making simple maps of familiar and imaginative environments, with landmarks</li> </ul>		
	<b>For more detail Birth to 5 Pattern Range 5</b>	<b>Statistics</b>	
	<ul style="list-style-type: none"> <li>• Creates their own spatial patterns showing some organisation or regularity</li> <li>• Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC)</li> <li>• Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next</li> </ul> <p><b>Range 6</b></p> <ul style="list-style-type: none"> <li>• Spots patterns in the environment, beginning to identify the pattern “rule”</li> <li>• Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat</li> </ul>		<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>