



# Nevill Road Infant School

## Maths Curriculum



### National Curriculum Subject Content

#### EYFS

#### ESSENTIAL OBJECTIVES / ESSENTIAL OPPORTUNITIES

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, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts;
- 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;
- Explore shape, space and measures, as part of a well-rounded curriculum;
- Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. (Communication and Language).

#### KEY STAGE 1

##### ESSENTIAL OBJECTIVES

- To develop confidence and mental fluency with whole numbers, counting and place value.
- To develop the ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- To know the number bonds to 20 and be precise in using and understanding place value.
- To read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at KS1.

##### ESSENTIAL OPPORTUNITIES

- To work with numbers, words and the four operations, including practical resources.
- To use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- To develop fluency and conceptual understanding through varied and frequent practice with increasingly complex problems over time.
- To reason mathematically by following a line of enquiry, conjecturing relationships, generalisations and developing an argument using mathematical vocabulary.
- To solve problems with increasing sophistication, including breaking down problems into smaller steps and persevering when seeking solutions.

BREADTH OF STUDY	<b>EYFS</b> <b>Three and Four Year Olds</b> <b>Reception</b> <b>Early learning Goals</b>	Y1	Y2
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<p><b>Number and Place Value</b></p>	<p>Can I recite numbers past 5?</p> <p>Can I say one number name for each item in order: 1, 2, 3, 4, 5.</p> <p>Can I explain that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')?</p> <p>Can I count objects, actions and sounds?</p> <p>Can I count beyond ten?</p> <p>Can I verbally count beyond 20, recognising the pattern of the counting system?</p> <p>Can I recognise up to 3 objects, without having to count them individually ('subitising')?</p> <p>Can I show 'finger numbers' up to 5</p> <p>Can I link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5?</p> <p>Can I experiment with their own symbols and marks as well as numerals?</p> <p>Can I link the number symbol (numeral) with its cardinal number value?</p> <p>Can I subitise (recognising quantities without counting) up to 5?</p> <p>Can I compare quantities using language: 'more than', 'fewer than'?</p> <p>Can I compare numbers?</p> <p>Can I compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity?</p>	<p>Can I count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number?</p> <p>Can I count, read and write numbers to 100 in numerals?</p> <p>Can I count in multiples of twos, fives and tens?</p> <p>Can I identify one more and one less than a given number to 100?</p> <p>Can I 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?</p> <p>Can I read and write numbers from 1 to 20 in numerals and words?</p>	<p>Can I count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward?</p> <p>Can I recognise the place value of each digit in a two-digit number (tens, ones)?</p> <p>Can I identify, represent and estimate numbers using different representations, including the number line?</p> <p>Can I compare and order numbers from 0 up to 100?</p> <p>Can I use the 'greater than,' 'less than' and 'equal to' signs?</p> <p>Can I read and write numbers to at least 100 in numerals and in words?</p> <p>Can I use place value and number facts to solve problems?</p>
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	<p>Can I understand the 'one more than/one less than' relationship between consecutive numbers? Can I explore the composition of numbers to 10?</p> <p>Can I demonstrate a deep understanding of numbers to 10, including the composition of each number?</p> <p>Can I solve real world mathematical problems with numbers up to 5?</p>		
<b>Number – Addition and Subtraction</b>	<p>Can I automatically recall number bonds 0-5 and some bonds to 10?</p> <p>Can I 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 double facts?</p> <p>Can I explore and represent patterns within numbers up to 10, including evens and odds double facts and how quantities can be distributed evenly?</p>	<p>Can I read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs?</p> <p>Can I represent and use number bonds and related subtraction facts within 20?</p> <p>Can I add and subtract one-digit and two-digit numbers to 20, including zero?</p> <p>Can I 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>?</p>	<p>Can I solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> <li>• using concrete objects and pictorial representations, including those involving numbers, quantities and measures?</li> <li>• applying my increasing knowledge of mental and written methods?</li> </ul> <p>Can I recall and use addition and subtraction facts to 20 fluently?</p> <p>Can I derive and use related facts up to 100?</p> <p>Can I add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>• a two-digit number and ones?</li> <li>• a two-digit number and tens?</li> <li>• two two-digit numbers?</li> <li>• adding three one-digit numbers?</li> </ul> <p>Can I show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot?</p> <p>Can I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems?</p>
<b>Number – Multiplication and Division</b>	<p>Can I explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly?</p>	<p>Can I 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?</p>	<p>Can I recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers?</p>



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			<p>Can I calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (<math>=</math>) signs?</p> <p>Can I show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot?</p> <p>Can I solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context?</p>
<b>Number – Fractions</b>		<p>Can I recognise, find and name a half as one of two equal parts of an object, shape or quantity?</p> <p>Can I recognise, find and name a quarter as one of four equal parts of an object, shape or quantity?</p>	<p>Can I 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?</p> <p>Can I write simple fractions for example, <math>\frac{1}{2}</math> of <math>6 = 3</math> and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math>?</p>
<b>Measurement</b>	<p>Can I compare objects relating to size, length, weight and capacity?</p> <p>Can I compare length, weight and capacity?</p> <p>Can I begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then...'? </p>	<p>Can I compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]?</li> <li>mass/weight [for example, heavy/light, heavier than, lighter than]?</li> <li>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]?</li> <li>time [for example, quicker, slower, earlier, later]?</li> </ul> <p>Can I 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> </ul> <p>Can I recognise and know the value of different denominations of coins and notes?</p>	<p>Can I choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (<math>^{\circ}\text{C}</math>); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels?</p> <p>Can I compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> signs?</p> <p>Can I recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value?</p> <p>Can I find different combinations of coins that equal the same amounts of money?</p> <p>Can I solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change?</p> <p>Can I compare and sequence intervals of time?</p>



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		<p>Can I sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]?</p> <p>Can I recognise and use language relating to dates, including days of the week, weeks, months and years?</p> <p>Can I tell the time to the hour and half past the hour and draw the hands on a clock face to show these times?</p>	<p>Can I 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>Can I say number of minutes in an hour and the number of hours in a day?</p>
<b>Geometry – Properties of Shapes</b>	<p>Can I talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'?</p> <p>Can I select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc?</p> <p>Can I combine shapes to make new ones – an arch, a bigger triangle, etc?</p> <p>Can I select, rotate and manipulate shapes in order to develop spatial reasoning skills?</p> <p>Can I compose and decompose shapes so that I spot that a shape can have other shapes within it, just as numbers can?</p>	<p>Can I recognise and name common 2-D and 3-D shapes, including:</p> <ul style="list-style-type: none"> <li>2-D shapes [for example, rectangles (including squares), circles and triangles]?</li> <li>3-D shapes [for example, cuboids (including cubes), pyramids and spheres]?</li> </ul>	<p>Can I identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line?</p> <p>Can I identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces?</p> <p>Can I 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>Can I compare and sort common 2-D and 3-D shapes and everyday objects?</p>
<b>Geometry – Position and Direction</b>	<p>Can I understand position through words alone – for example, "The bag is under the table," – with no pointing?</p> <p>Can I describe a familiar route?</p> <p>Can I discuss routes and locations, using words like 'in front of' and 'behind'?</p> <p>Can I draw information from a simple map?</p> <p>Can I talk about and identify the patterns around them? For example, stripes on clothes, designs on</p>	<p>Can I describe position, direction and movement, including whole, half, quarter and three-quarter turns?</p>	<p>Can I order and arrange combinations of mathematical objects in patterns and sequences?</p> <p>Can I 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)?</p>



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	<p>rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.</p> <p>Can I extend and create ABAB patterns – stick, leaf, stick, leaf?</p> <p>Can I spot and correct an error in a repeating pattern?</p> <p>Can I continue, copy and create repeating patterns?</p>		
<b>Statistics</b>	<p>Can I experiment with my own symbols and marks, as well as numerals&gt;</p>		<p>Can I interpret and construct simple pictograms, tally charts, block diagrams and simple tables?</p> <p>Can I ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity?</p> <p>Can I ask and answer questions about totalling and comparing categorical data?</p>

KEY END-POINT ASSESSMENT			
	EYFS	Y1	Y2
<b>Number and Place Value</b>	<p>Can I verbally count beyond 20, recognising the pattern of the counting system?</p> <p>Can I subitise (recognising quantities without counting) up to 5?</p> <p>Can I compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity?</p> <p>Can I demonstrate a deep understanding of numbers to 10, including the composition of each number?</p>	<p>Can I count reliably to 100?</p> <p>Can I count on and back in 1s, 2s, 5s, and 10s from any given number to 100?</p> <p>Can I write all numbers in words to 20?</p> <p>Can I say the number that is one more or one less than a number to 100?</p>	<p>Can I read scales in divisions of ones, twos, fives and tens?</p> <p>Can I partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus?</p> <p>Can I compare numbers using the &lt;, &gt; and = symbols?</p> <p>Can I read and write numbers to 100 numerically and in words?</p> <p>Can I use number facts and place value to solve problems?</p>



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<p><b>Number – Addition and Subtraction</b></p>	<p>Can I 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 double facts?</p> <p>Can I explore and represent patterns within numbers up to 10, including evens and odds double facts and how quantities can be distributed evenly?</p>	<p>Can I add and subtract 1-digit and 2-digit numbers to 20, including zero?</p> <p>Can I read and write the signs +, - and =?</p> <p>Can I solve a missing number problem, such as: <math>5 = 8 - *</math> ?</p> <p>Can I solve a one-step problem involving an addition and subtraction, using concrete objects, pictorial representations and arrays?</p> <p>Can I recall all pairs of addition and subtraction number bonds to 20?</p>	<p>Can I add and subtract any 2 two-digit numbers using an efficient strategy, explaining my method verbally, in pictures or using apparatus (e.g. <math>48 + 35</math>; <math>72 - 17</math>)?</p> <p>Can I recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If <math>7 + 3 = 10</math> then <math>17 + 3 = 20</math>; if <math>7 - 3 = 4</math> then <math>17 - 3 = 14</math>; leading to if <math>14 + 3 = 17</math>, then <math>3 + 14 = 17</math>, <math>17 - 14 = 3</math> and <math>17 - 3 = 14</math>)?</p> <p>Can I show that addition is commutative, and subtraction is not?</p> <p>Can I use addition and subtraction to solve problems?</p> <p>Can I use my understanding of inverse operations to check my calculations?</p>
<p><b>Number – Multiplication and Division</b></p>	<p>Can I explore and represent patterns within numbers up to 10, including evens and odds double facts and how quantities can be distributed evenly?</p>	<p>Can I solve a one-step problem involving a multiplication and division, using concrete objects, pictorial representations and arrays?</p>	<p>Can I recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary?</p> <p>Can I solve problems using my multiplication and division skills?</p> <p>Can I write a multiplication and division number sentence, using appropriate symbols?</p>
<p><b>Number – Fractions</b></p>		<p>Can I identify half and a quarter of a number or shape, and know that all parts must be equal parts of a whole?</p>	<p>Can I identify <math>\frac{1}{4}</math>, <math>\frac{1}{3}</math>, <math>\frac{1}{2}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{4}</math>, of a number or shape, and know that all parts must be equal parts of the whole?</p> <p>Can I show that some equivalent fractions e.g. <math>\frac{1}{2}</math> is equal to <math>\frac{2}{4}</math>?</p>
<p><b>Measurement</b></p>		<p>Can I recognise all coins: £1; 50p; 20p; 10p; and 1p?</p> <p>Can I name the days of the week and months of the year?</p> <p>Can I tell the time to 'o'clock' and half past the hour?</p>	<p>Can I use different coins to make the same amount?</p> <p>Can I read the time on a clock to the nearest 15 minutes?</p>





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		<p>Can I compare a range of measures, including length, mass/weight, time and capacity?</p> <p>Can I sequence events in chronological order?</p>	<p>Can I compare a range of measures using the &lt;, &gt; and = signs?</p> <p>Can I solve problems using my measurement skills?</p> <p>Can I read a scale to measure accurately?</p>
<b>Geometry – Properties of Shapes</b>		<p>Can I recognise and name the 2D shapes: circle; triangle; square and rectangle and 3D shapes: cube; sphere; cuboid; pyramid?</p>	<p>Can I name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry?</p> <p>Can I identify 2-D shapes on the surface of 3-D shapes?</p> <p>Can I compare and sort common 2-D and 3-D shapes and everyday objects?</p>
<b>Geometry – Position and Direction</b>		<p>Can I describe position, direction and movement, including whole, half, quarter and three-quarter turns?</p>	<p>Can I order and arrange combinations of mathematical objects in patterns and sequences?</p> <p>Can I 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?</p>
<b>Statistics</b>			<p>Can I interpret and create my own pictograms, tally charts, block diagrams and simple tables to investigate a line of enquiry?</p> <p>Can I draw totals and conclusions from a collection of data?</p>