

# The Foundation of Our Learning: Early Mathematics

Before starting the national curriculum in Year 1, pupils learn through the Early Years Statutory Framework. This document is structured differently to the national curriculum, as it is organised across seven areas of learning, instead of discrete subjects. The seven areas of learning are:

- communication and language.
- personal, social and emotional development.
- physical development.
- literacy.
- mathematics.
- understanding the world.
- expressive arts and design.

**Mathematics** knowledge and skills are specifically found in the area of

- mathematics.

This foundational learning supports all pupils at Alveley, particularly those from disadvantaged backgrounds, in developing the knowledge and skills to support their **mathematics** learning as they move to Year 1.

The table below outlines the most relevant statements taken from the EYFS statutory framework and the Development Matters (a document that supports the framework).

## Mathematical Vocabulary (communication and language)

<b>Nursery</b>	<ul style="list-style-type: none"> <li>• Use a wider range of vocabulary.</li> <li>• Understand ‘why’ questions, like: “why do you think the caterpillar is so fat?”</li> </ul>
<b>Reception</b>	<ul style="list-style-type: none"> <li>• Learn new vocabulary.</li> <li>• Use new vocabulary throughout the day.</li> </ul>
<b>ELG</b>	<ul style="list-style-type: none"> <li>• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</li> </ul>

## Number and Place Value:

### Counting

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Recite numbers past 5.</li><li>• Say one number name for each item in order: 1, 2, 3, 4, 5.</li><li>• Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Count objects, actions and sounds.</li><li>• Count beyond ten.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• Verbally count beyond 20, recognising the pattern of the counting system.</li></ul>

### Identifying, Representing and Estimating Numbers

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').</li><li>• Show 'finger numbers' up to 5.</li><li>• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</li><li>• Experiment with their own symbols and marks as well as numerals.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Subitise.</li><li>• Link the number symbol (numeral) with its cardinal number value.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• Subitise (recognising quantities without counting) up to 5.</li></ul>

### Reading and Writing Numbers

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.</li><li>• Experiment with their own symbols and marks as well as numerals.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Link the number symbol (numeral) with its cardinal number value.</li></ul>

## Compare and Order Numbers

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Compare quantities using language: ‘more than’, ‘fewer than’</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Compare numbers.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.</li></ul>

## Understanding Place Value

<b>Reception</b>	<ul style="list-style-type: none"><li>• Understand the ‘one more than/one less than’ relationship between consecutive numbers.</li><li>• Explore the composition of numbers to 10.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• Have a deep understanding of numbers to 10, including the composition of each number.</li></ul>

## Solve Problems

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Use a wider range of vocabulary.</li><li>• Understand ‘why’ questions, like: “why do you think the caterpillar is so fat?”</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Learn new vocabulary.</li><li>• Use new vocabulary throughout the day.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.</li></ul>

## Addition and Subtraction:

### Mental Calculations

<b>Reception</b>	<ul style="list-style-type: none"><li>• Automatically recall number bonds for numbers 0-5 and some to 10.</li></ul>
<b>ELG</b>	<ul style="list-style-type: none"><li>• 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.</li></ul>

### Solve Problems

<b>ELG</b>	<ul style="list-style-type: none"><li>• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.</li></ul>
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## Measurement:

### Describe, Measure, Compare and Solve

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Make comparisons between objects relating to size, length, weight and capacity.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Compare length, weight and capacity.</li></ul>

### Solve Problems

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then...'</li></ul>
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## Properties of Shapes:

### Recognise 2d Shapes and Their Properties

<b>Nursery</b>	<ul style="list-style-type: none"><li>• 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'.</li><li>• Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc.</li><li>• Combine shapes to make new ones – an arch, a bigger triangle, etc.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</li></ul>

### Compare and Classify Shapes

<b>Reception</b>	<ul style="list-style-type: none"><li>• Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.</li></ul>
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## Position and Direction

### Position, Direction and Movement

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Understand position through words alone – for example, "The bag is under the table," – with no pointing.</li><li>• Describe a familiar route.</li><li>• Discuss routes and locations, using words like 'in front of' and 'behind'.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Draw information from a simple map.</li></ul>

## Patterns

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.</li><li>• Extend and create ABAB patterns – stick, leaf, stick, leaf.</li><li>• Notice and correct an error in a repeating pattern.</li></ul>
<b>Reception</b>	<ul style="list-style-type: none"><li>• Continue, copy and create repeating patterns.</li></ul>

## Statistics

### Record, Present and Interpret Data

<b>Nursery</b>	<ul style="list-style-type: none"><li>• Experiment with their own symbols and marks, as well as numerals.</li></ul>
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