



## MATHS: Curriculum Goals

*Articles 24, 28 and 29- 'All children have a right to an education that supports them to use and develop their talents and abilities.'*

| Autumn Term   | Spring Term  | Summer Term   |
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| <p><b>First Milestone:</b> Children engage with mathematical concepts through every-day play, routines, snack time, story time etc following the rhythm of the day, understanding now and next, sequence of the Nursery day. Children explore building with medium sized blocks and materials beginning to comment on if they need 'more' bricks/materials. Children are listening to and beginning to join in with the actions and words of simple number songs.</p> <p><b><u>Comparison</u></b><br/> <b>Range 3</b> - Responds to words like lots or more<br/> <b>Range 4</b> -Beginning to compare and recognise changes in numbers of things, using words like more, lots or 'same'</p> <p><b><u>Counting</u></b><br/> <b>Range 3</b> - Says some counting words<br/> <b>Range 4</b> - Begins to say numbers in order, some of which are in the right order (ordinality)<br/> <b>Range 5</b> - Points or touches (tags) each item, saying one number for each item, using the stable order of 1, 2,3,4,5.<br/>           Begin to recognise numerals 0 to 10</p> <p><b><u>Cardinality</u></b></p> | <p><b>Second Milestone:</b> Children are counting incidentally, they are noticing and commenting on amounts and numerals in their environment. Children can show an understanding of some prepositional language. They are comparing size, weight, shape, composition, comparing groups, know 'more than' 'fewer than'. Recognise ABABAB patterns and are beginning to subsidise with small numbers up to 2.</p> <p><b><u>Comparison</u></b><br/> <b>Range 5</b>-Compares two 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!</p> <p><b><u>Counting</u></b><br/> <b>Range 5</b><br/>           Uses some number names and number language within play, and may show fascination with large numbers<br/>           Points or touches (tags) each item, saying one number for each item, using the stable order of 1, 2,3,4,5.</p> <p><b><u>Cardinality</u></b><br/>           Links numerals with amounts up to 5 and maybe beyond<br/>           Subitises one, two and three objects</p> | <p>Third Milestone: Children can build with a range of shapes, selecting them appropriately, combining shapes to make new ones- e.g. an arch. Make comparisons between objects relating to size, length, weight and capacity. Extend and create ABAB patterns- stick, leaf, stick leaf. Recognise and subsidise up to 3 objects, understand number concepts to at least 5 (reciting, counting objects- cardinality, show finger numbers, link numerals).</p> <p><b><u>Comparison</u></b><br/> <b>Range 6</b> - Uses number names and symbols when comparing numbers, showing interest in large numbers<br/>           Estimates of numbers of things, showing understanding of relative size<br/>           Estimates of numbers of things, showing understanding of relative size</p> <p><b><u>Counting</u></b><br/> <b>Range 6</b> - Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0<br/>           Increasingly confident at putting numerals in order 0 to 10 (ordinality)</p> <p><b><u>Cardinality</u></b></p> |

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| <p><b>Range 3</b> -Uses number words, like one or two and sometimes responds accurately when asked to give one or two things</p> <p><b>Range 5</b> - Explores using a range of their own marks and signs to which they ascribe mathematical meanings</p> <p><b>Composition</b></p> <p><b>Range 5</b>- Beginning to use understanding of number to solve practical problems in play and meaningful activities</p> <p><b>Spatial Awareness</b></p> <p><b>Range 3</b> – Enjoys filling and emptying containers</p> <p><b>RANGE 4</b> Begins to remember their way around familiar environments<br/>Responds to some spatial and positional language</p> <p><b>Range 5</b> Responds to and uses language of position and direction</p> <p><b>Measures</b></p> <p><b>Range 4</b>- Explores differences in size, length, weight and capacity</p> <p><b>Shape</b></p> <p><b>Range 3</b>- Enjoys using blocks to create their own simple structures and arrangements</p> <p><b>RANGE 4</b> Chooses puzzle pieces and tries to fit them in<br/>Makes simple constructions</p> <p><b>Pattern</b></p> <p><b>Range 3</b>- Becoming familiar with patterns in daily routines</p> <p><b>Range 4</b> - Is interested in what happens next using the pattern of everyday routines</p> | <p>Explores using a range of their own marks and signs to which they ascribe mathematical meanings.</p> <p><b>Composition</b><br/>Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers</p> <p><b>Spatial Awareness</b></p> <p><b>Range 5</b>- Responds to and uses language of position and direction<br/>Predicts, moves and rotates objects to fit the space or create the shape they would like</p> <p><b>Measures</b></p> <p><b>Range 5</b><br/>In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items</p> <p><b>Range 6</b> Beginning to experience measuring time with timers and calendars. Sing songs about the days of the week, and months of the year, referring to the calendar and countdown to events...</p> <p><b>Shape</b></p> <p><b>Range 5</b> -Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes.<br/>Attempts to create arches and enclosures when building, using trial and improvement to select blocks</p> <p><b>Pattern</b></p> <p><b>Range 5</b> - Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next</p> <p>Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC)</p> | <p><b>Range 6</b> - Engages in subitising numbers to four and maybe five<br/>Matches the numeral with a group of items to show how many there are (up to 10)<br/>Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints</p> <p><b>Composition</b> -Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of object</p> <p><b>Spatial Awareness Range 6</b> - Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoint</p> <p><b>Measures</b></p> <p><b>Range 6</b>- Enjoys tackling problems and making predictions involving length, weight, or capacity-paying attention to fairness and accuracy<br/>Range 6 - Becomes familiar with measuring tools in everyday experiences and play</p> <p><b>Shape</b></p> <p><b>Range 6</b>- Uses own idea to make more complex models selecting blocks needed, solving problems and visualising what they want to build (Block area)<br/>-Uses a mixture of mathematical terms, and informal language to describe shapes, e.g. 'heart shaped'<br/>-Learning which shapes can be combined to make other shapes.</p> <p><b>Pattern</b></p> <p><b>Range 6</b>- Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat.</p> |
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| <b>Knowledge check- (by end of nursery)</b> |  |  |

**Do children...**

- Recognise numbers to 5
- Apply 1:1 correspondence to 5
- Understand the 5-ness of 5.
- Recognise quickly 5 objects without having to count them individually (subitising)
- Recognise and name familiar shapes, square, triangle, rectangle, circle
- Know the difference between 2D and 3D shapes
- Understand the sequence of first, then, after, before in context and understand the vocabulary of time e.g. good afternoon
- Understand what is in the future and what is in the past
- Design and continue patterns of up to three sequences e.g. abc, abc, leaf, stick, stone, leaf, stick stone.
- Make comparisons between objects relating to size, length, weight and capacity.

**Key Mathematical Principles used to sequence learning:** Counting:

**One-to one principle-** children need to name each object they count and realise that there are 2 sets, a group that has been counted and a group that needs to be counted

The **stable order principle-** how to count in the right order

The **cardinal principle-** realising the last number in the set is the total amount.

**Counting anything-** not just objects that have to be touched- can be claps or jumps.

**Counting scattered sets-** mixed up and not in a line- still leads to the same amount.