

# Reception Maths Overview

## Development Matters Statements

### Three and Four-Year-Olds

- Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.
- 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'.
- Understand position through words alone – for example, "The bag is under the table," – with no pointing.
- Describe a familiar route.
- Discuss routes and locations, using words like 'in front of' and 'behind'.
- Make comparisons between objects relating to size, length, weight and capacity.
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
- Combine shapes to make new ones – an arch, a bigger triangle, etc.
- Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.
- Extend and create ABAB patterns – stick, leaf, stick, leaf.
- Notice and correct an error in a repeating pattern.
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

### Children in Reception

- 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 0–5 and some to 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.

### Early Learning Goals

#### Number

- 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.

#### Numerical Patterns

- 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.

The first few years of a child's life are especially important for mathematics development. Research shows that early mathematical knowledge predicts later reading ability and general education and social progress. Conversely, children who start behind in mathematics tend to stay behind throughout their whole educational journey.

At Springdale First School, we follow the NCETM Mastering Number Approach from Reception to Year 2. The programme is coherently planned to secure firm foundations in the development of good number sense for all children. It teaches the key mathematical concepts; Counting, Subitising, Composition of Number and Comparison. We want children to leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention is given to key knowledge and understanding needed in the Early Years, and progression through KS1 to support success in the future.

Four Mastering Number sessions are planned, delivered and assessed a week. Each session lasts 10-15 minutes and exposes all children to key mathematical concepts so that they can be explored together, as a class. During each session, adults assess which children need further opportunity to consolidate the new learning. These children then work in a small focus group to ensure they are ready for the next session. Enrichment opportunities are planned to enhance the children's continuous provision and are also built into their daily routines.

The fifth maths session of the week focuses on teaching Shape, Space and Measure. The outlined progression is informed by the research conducted by the NCETM <https://www.ncetm.org.uk/in-the-classroom/early-years/>. We cover 3 areas of early mathematics learning (Pattern, Shape and Space, Measures) which collectively provide a platform for everything children will encounter as they progress through their maths learning at primary school, and beyond.

# AUTUMN OVERVIEW

| Autumn 1 | Number Theme   | Shape, Space, Measure, Pattern Theme  |
|----------|--|---|
| Week 1-2 | BASELINE   | BASELINE  |
| Week 3   | <b>Subitising</b> <ul style="list-style-type: none"> <li>Perceptual subitising to 3</li> </ul>   | <b>Pattern</b> <ul style="list-style-type: none"> <li>Copy, continue and make an AB pattern</li> <li>Continue a pattern which ends mid-unit</li> </ul>  |
| Week 4   | <b>Counting</b> <ul style="list-style-type: none"> <li>Counting sequence</li> <li>1:1 correspondence</li> <li>Cardinality</li> </ul>     | <b>Pattern</b> <ul style="list-style-type: none"> <li>Copy, continue and make an ABC pattern</li> <li>Continue a pattern which ends mid-unit</li> </ul> |
| Week 5   | <b>Composition</b> <ul style="list-style-type: none"> <li>Composition of 3 &amp; 4</li> </ul>  | <b>Pattern</b> <ul style="list-style-type: none"> <li>Make their own ABB pattern</li> <li>Make a pattern around a circle/border</li> </ul>              |
| Week 6   | <b>Subitising</b> <ul style="list-style-type: none"> <li>Subitising to 4</li> <li>Perceptual and conceptual</li> <li>Making 4</li> </ul> | <b>Pattern</b> <ul style="list-style-type: none"> <li>Make their own ABBC pattern</li> <li>Make a pattern around a circle/border</li> </ul>             |
| Week 7   | <b>Comparison</b> <ul style="list-style-type: none"> <li>Focus on language and think about attributes</li> </ul>                         | <b>Pattern</b> <ul style="list-style-type: none"> <li>Spot errors in patterns</li> </ul>  |

| Autumn 2 | Number Theme   | Shape, Space, Measure, Pattern Theme  |
|----------|--|---|
| Week 8   | <b>Cardinality and Counting</b> <ul style="list-style-type: none"> <li>Focus on counting to 5</li> </ul> | <b>2D Shape</b> <ul style="list-style-type: none"> <li>Identify similarities between shapes</li> </ul>                                      |
| Week 9   | <b>Comparison</b> <ul style="list-style-type: none"> <li>Comparisons by matching</li> </ul>              | <b>2D Shape</b> <ul style="list-style-type: none"> <li>Name simple 2D shapes – square, rectangle, circle, triangle, pentagon</li> </ul>     |
| Week 10  | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on the concept of a 'whole'</li> </ul>   | <b>2D Shape</b> <ul style="list-style-type: none"> <li>Properties of 2D shapes – sides – corners</li> <li>Describing properties</li> </ul>  |
| Week 11  | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on the composition of 5</li> </ul>       | <b>2D Shape</b> <ul style="list-style-type: none"> <li>Develop an awareness of relationships</li> </ul>                                     |
| Week 12  | <b>Cardinality and Counting</b> <ul style="list-style-type: none"> <li>Counting beyond 5</li> </ul>      | <b>Time</b> <ul style="list-style-type: none"> <li>Beginning to use time to sequence events – times of the day, visual timetable</li> </ul> |
| Week 13  | <b>Revision of key knowledge</b>   | <b>Time</b> <ul style="list-style-type: none"> <li>Calendar events – Birthday</li> </ul>  |
| Week 14  | <b>Revision of key knowledge</b>   | <b>Time</b> <ul style="list-style-type: none"> <li>Experience specific time durations – 1 minute challenges, tidy up time</li> </ul>        |

# SPRING OVERVIEW

| Spring 1 | Number Theme   | Shape, Space, Measure, Pattern Theme  |
|----------|--|---|
| Week 15  | <b>Subitising</b> <ul style="list-style-type: none"> <li>Focus on linking subitising amounts to 5 with numerals</li> </ul>   | <b>Length</b> <ul style="list-style-type: none"> <li>Recognising attributes – long and short</li> <li>Comparing amounts of continuous quantities – longer, shorter – introducing starting points are aligned</li> </ul> |
| Week 16  | <b>Ordinality</b> <ul style="list-style-type: none"> <li>Ordering numbers to 5.</li> <li>Focus on each number being 1 more than the previous number.</li> </ul>  | <b>Length</b> <ul style="list-style-type: none"> <li>Measuring using a non-standard unit</li> <li>Recognising the relationship between the size and number of units</li> </ul>  |
| Week 17  | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on the composition of five and considering missing numbers</li> </ul>  | <b>Length</b> <ul style="list-style-type: none"> <li>Showing awareness of comparison in estimating and predicting</li> </ul>  |
| Week 18  | <b>Composition</b> <ul style="list-style-type: none"> <li>Beginning to consider '5 and a bit' numbers using fingers and die frames as key representations</li> </ul>   | <b>Length</b> <ul style="list-style-type: none"> <li>Comparing indirectly – ordering by length</li> </ul>   |
| Week 19  | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on equal and unequal groups</li> </ul>   | <b>Height</b> <ul style="list-style-type: none"> <li>Recognising attributes – tall and short</li> <li>Measuring using a non-standard unit and compare amounts</li> </ul>  |
| Week 20  | <b>Counting</b> <ul style="list-style-type: none"> <li>Counting sequence</li> <li>Ordinality of 1-5</li> <li>1 more and 1 less than within 10</li> <li>Linking ordinality and cardinality through use of staircase pattern</li> </ul>                          | <b>Height</b> <ul style="list-style-type: none"> <li>Showing awareness of comparison in estimating and predicting</li> <li>Comparing indirectly – ordering by height</li> </ul>   |
| Spring 2 | Number Theme   | Shape, Space, Measure, Pattern Theme  |
| Week 21  | <b>Comparison</b> <ul style="list-style-type: none"> <li>Comparison using knowledge of ordinality rather than comparison by matching of quantities</li> <li>Children to notice whether a change creates a number which is more or less than another</li> </ul> | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Shape awareness – developing shape awareness through construction</li> <li>Identifying similarities between shapes</li> </ul>                                   |
| Week 22  | <b>Composition</b> <ul style="list-style-type: none"> <li>Composition of 7 as 2 groups</li> <li>Focus on 5 and a bit</li> </ul>  | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Introduce shape name and properties</li> <li>Cube and Cuboid</li> </ul>   |
| Week 23  | <b>Subitising</b> <ul style="list-style-type: none"> <li>Subitising within 6</li> <li>Look at doubles – which numbers can be made using doubles and which numbers cannot</li> </ul>  | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Introduce shape name and properties</li> <li>Cone and Pyramid</li> </ul>  |
| Week 24  | <b>Composition</b> <ul style="list-style-type: none"> <li>Sort odd and even numbers by looking at their tops; odd blocks and flat tops</li> </ul>  | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Introduce shape name and properties</li> <li>Cylinder and Sphere</li> </ul>   |
| Week 25  | <b>Counting, Cardinality and Ordinality</b> <ul style="list-style-type: none"> <li>Counting larger amounts</li> <li>Strategies for counting</li> </ul>   | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Revisit all 3D shapes and their properties</li> </ul>   |
| Week 26  | <b>Subitising</b> <ul style="list-style-type: none"> <li>Structured arrangements including the 10 frame</li> </ul>   | <b>3D Shapes</b> <ul style="list-style-type: none"> <li>Developing an awareness of relationships between shapes</li> </ul>  |

# SUMMER OVERVIEW

| Summer 1                           | Number Theme   | Shape, Space, Measure, Pattern Theme   |
|------------------------------------|--|--|
| Week 27                            | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on representations of numbers using fingers and 10-frame</li> </ul>  | <b>Measure - Mass</b> <ul style="list-style-type: none"> <li>Recognising attributes – heavy and light</li> <li>Comparing amounts of continuous quantities – heavier, lighter – indicated by a greater downward pull, link to balance scales – expose to small heavy things and large light things</li> </ul> |
| Week 28                            | <b>Composition</b> <ul style="list-style-type: none"> <li>Focus on doubles using different representations</li> </ul>  | <b>Measure - Mass</b> <ul style="list-style-type: none"> <li>Showing awareness of comparison in estimating and predicting</li> <li>*Checking through measuring using units to compare</li> </ul>   |
| Week 29                            | <b>Comparison</b> <ul style="list-style-type: none"> <li>Focus on ordinality, comparing numbers</li> </ul>   | <b>Measure - Mass</b> <ul style="list-style-type: none"> <li>Comparing indirectly – ordering by mass</li> </ul>  |
| Week 30<br>REVIEW<br>AND<br>ASSESS | <b>Subitising and The Rekenrek</b> <ul style="list-style-type: none"> <li>'Seeing' small quantities and numbers within larger amounts</li> <li>Introduction to Rekenrek</li> <li>Linking familiar representations such as numbers of fingers to representations on the Rekenrek</li> </ul> | <b>Measure - Capacity</b> <ul style="list-style-type: none"> <li>Recognising attributes – full and empty</li> <li>Comparing amounts of continuous quantities – 'holds more than' 'holds less than'</li> </ul>  |
| Week 31<br>REVIEW<br>AND<br>ASSESS | <b>Counting</b> <ul style="list-style-type: none"> <li>Strategies for counting.</li> <li>Recognising the pattern of the counting system, when beginning to count beyond 20</li> </ul>  | <b>Measure - Capacity</b> <ul style="list-style-type: none"> <li>Showing awareness of comparison in estimating and predicting eg. what container would be best to hold a given substance?</li> </ul>   |
| Week 32<br>REVIEW<br>AND<br>ASSESS | <b>Comparison</b> <ul style="list-style-type: none"> <li>Comparing groups of objects that are of different sizes/colours/attributes</li> <li>Developing a sense of magnitude eg knowing that 8 is a lot more than 2. But that 4 is only a little bit more than 2</li> </ul>                | <b>Measure - Capacity</b> <ul style="list-style-type: none"> <li>Comparing indirectly – ordering by capacity</li> <li>Recognise the relationship between the size and number of units</li> </ul>   |

| Summer 2                           | Number Theme   | Shape, Space, Measure, Pattern Theme  |
|------------------------------------|--|---|
| Week 33<br>REVIEW<br>AND<br>ASSESS | <b>Pattern in Number</b> <ul style="list-style-type: none"> <li>Investigating 'parts' and 'wholes'.</li> <li>Exploring the composition of numbers to 10</li> <li>Investigating the equivalence, doubles and making odd and even numbers</li> </ul> | <b>Space</b> <ul style="list-style-type: none"> <li>Experiencing different viewpoints</li> <li>Developing spatial vocabulary – position, direction and viewpoint</li> </ul> |
| Week 3<br>REVIEW<br>AND<br>ASSESS  | <b>Deep Understanding of Numbers to 10</b> <ul style="list-style-type: none"> <li>Continuing to practically explore the composition of numbers to 10</li> </ul>  | <b>Revisit Pattern</b> <ul style="list-style-type: none"> <li>Continuing and creating AB/ABC/ABB/ABBA patterns</li> </ul>   |

|                                    |  |  |
|------------------------------------|--|--|
|                                    | <ul style="list-style-type: none"> <li>Investigating 5 as a key 'anchor' in our number system</li> <li>Beginning to generalise about 1 more/1 less within 10</li> </ul>  |  |
| Week 35<br>REVIEW<br>AND<br>ASSESS | <b>Recall of Number Facts</b> <ul style="list-style-type: none"> <li>Learning the 'numbers within' 3. 4. 5 and 10</li> <li>Knowing double facts up to 5 and 5 make 10</li> <li>Investigating whole amounts and hidden quantities within 5</li> </ul> | <b>Revisit 2D Shape</b> <ul style="list-style-type: none"> <li>Names and properties</li> </ul>   |
| Week 36<br>REVIEW<br>AND<br>ASSESS | <b>Developing awareness of numbers beyond 10</b> <ul style="list-style-type: none"> <li>Counting past 10</li> <li>Recognising numbers to 20</li> </ul>   | <b>Revisit 3D Shape</b> <ul style="list-style-type: none"> <li>Names and properties</li> </ul>   |
| Week 37<br>REVIEW<br>AND<br>ASSESS | <b>Composition beyond 10</b> <ul style="list-style-type: none"> <li>Building numbers beyond 10 – spotting pattern eg. <math>12 = 10 + 2</math> <math>11 = 10 + 1</math></li> </ul>   | <b>Revisit Time</b> <ul style="list-style-type: none"> <li>Sequence times of the day</li> <li>O'clock</li> </ul>                                 |
| Week 38<br>REVIEW<br>AND<br>ASSESS | <b>Content to be determined by ongoing assessments</b>   | <b>Revisit Length and Height</b> <ul style="list-style-type: none"> <li>Attribute language, comparative language, non-standard units,</li> </ul> |
| Week 39<br>REVIEW<br>AND<br>ASSESS | <b>Content to be determined by ongoing assessments</b>   | <b>Revisit Mass</b> <ul style="list-style-type: none"> <li>Attribute language, comparative language, non-standard units,</li> </ul>              |