

# Curriculum Plan 2025

## Mathematics

### CURRICULUM PLAN: Mathematics

#### INTENT:

At Madeley Nursery School, we have developed an ambitious, robust and inclusive curriculum for mathematics. Our intent for all children to develop secure knowledge within the 5 areas of mathematics as laid out in the Birth to Five Matters document. This will enable all children to learn and practise their mathematics knowledge and skills to pursue their own mathematical interests in planned sessions and independently. They will develop their mathematical knowledge through a combination of regular weekly taught mathematics sessions, daily mathematical routines (the quotidian) and weekly opportunities to practise their mathematical knowledge through project work and independent play. Our ambition for children is for them to develop their knowledge so they are confident and independent to pursue their own mathematical ideas in different, relevant contexts.

#### Syllabus overview

- Number sense
  - Subitising
  - One-to-one correspondence: 1 number assigned to each amount.
  - Cardinality: the value of a number 'how manyness' 'threeness of 3'
  - Ordinality: numbers which represent position; - 1<sup>st</sup>, 2<sup>nd</sup>)
  - Stable order: the conventional counting system doesn't change.
- To become confident in counting and recognising numbers to 10
- Show an ability to sort and categorise amounts and objects in different ways.
- Build up a repertoire of number nursery rhymes.
- Create and experiment with symbols and marks to represent mathematical ideas.
- To identify a range of common 2d and 3d shapes and describe their properties.
- Use shapes appropriately for tasks.
- To experience a range of measuring contexts and apply knowledge about measuring to solve problems.

#### 2–3-year-olds will be learning to

##### Numbers

Recites some number names.  
Represent ideas of number  
Use language of quantity  
Know that a quantity can change.

#### 3–4-year-olds will be learning to:

##### Numbers

Uses number names accurately.  
Recites numbers to 10.  
Represent numbers in different ways such as on paper or fingers.  
Match numeral and quantity  
Show an interest in number problems.

<p><b>Shape, space, and measure</b>  Notice simple shapes.  Categorise by shape or size.  Use language of size  Anticipates and understands some time-based events.  Notice simple patterns.  Begin to use prepositional language.</p> <p><b>Pattern</b>  Beginning to join in with repeated sound and action patterns  Beginning to create their own patterns in different context  Becomes familiar with daily routines</p>	<p>Show an interest in numerals.  Count anything not just objects.</p> <p><b>Shape, space, and measure</b>  Shows an interest in shape and space.  Aware of shapes similarities  Use positional language.  Discuss routes and direction.  Talk about the shapes of everyday object.  Talk about and explore 2D and 3D shapes.  Create own patterns and sequences.</p> <p><b>Pattern</b>  Repeating patterns in different contexts  Creating own patterns in different contexts  Understands the daily routines and can predict what is happening next</p>
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## Implementation

The following framework, supported by Birth to 5 Matters, has been designed to facilitate a supportive sequence of mathematical learning for children that is developmentally appropriate, including those with some SEND considerations. For those children with complex SEND considerations we make further use of the Differentiated Early Years Outcomes (DEYO) document, which is supportive of Birth to 5 Matters, and follow the Assess, Plan, Do, Review process, planning bespoke provision based on individual need identified in each child's IEP. We plan for children to learn this carefully sequenced knowledge through a combination of short, structured mathematics lessons, the daily mathematical routines and through project work. We are sensitive in our assessments across these 3 opportunities for mathematical development and adapt our teaching to facilitate the mathematical next steps for each child. Therefore, educators should not interpret the age ranges as thresholds for all children, which risks limiting progress for some children and / or missing vital steps in learning for others. Rather, the age ranges are a guide to support knowledge progression and educators should adapt their teaching to the specific needs of their children based on their assessments with colleagues.

	2-year-olds (Broadly Ranges 2-4)	3-year-olds (Broadly Ranges 3-5)	4-year-olds (Broadly Ranges 4-6)
Number	<p><u>Key Knowledge &amp; Skills</u></p> <p>Comparison:</p> <ul style="list-style-type: none"> <li>Understands and responds to words like more, less and the same.</li> <li>Sometimes indicates which amount has more or less.</li> </ul> <p>Counting:</p> <ul style="list-style-type: none"> <li>To use some counting words</li> <li>To engage in counting behaviour – i.e., pointing at objects in a sequence</li> <li>To begin to recognise small numbers of objects (1-4 objects – early subatiscing)</li> <li>Begins to recite some number rhymes.</li> </ul> <p>Cardinality:</p> <ul style="list-style-type: none"> <li>Uses some counting words correctly.</li> <li>Can respond to simple instructions involving numbers – i.e., give me two...</li> </ul> <p><u>Key Vocabulary</u></p> <p>Number rhymes repertoire</p> <p>Language associated with quantity – more, less, fewer, bigger, smaller.</p>	<p><u>Key Knowledge &amp; Skills</u></p> <p>Comparison:</p> <ul style="list-style-type: none"> <li>Is able to understand and respond to the language of more, less and the same – i.e., can make quantities more, less or the same</li> </ul> <p>Counting:</p> <ul style="list-style-type: none"> <li>Beginning to know the counting sequence 0-10 – stable order principle and ordinality principle (may not always be correct)</li> <li>To understand 1:1 correspondence 1 – 5 – i.e., counts small amounts in different ways (objects, fingers etc....)</li> <li>Knows that the last number reached is the final amount – cardinality principle.</li> <li>Participates in a range of counting songs and rhymes.</li> </ul> <p>Cardinality:</p> <ul style="list-style-type: none"> <li>Can count amounts 1-5 accurately and with consistency.</li> <li>Can assign a number to an amount 0-5</li> <li>Can select 2-3 objects from a larger group.</li> <li>To recognise some numbers up to 10</li> <li>To begin to use numbers to label amounts.</li> <li>To use a range of ways of recording amounts – i.e., tally marks, symbols etc....</li> <li>Subatiscs amounts 1-3</li> </ul> <p>Composition:</p>	<p><u>Key Knowledge &amp; Skills</u></p> <p>Comparison:</p> <ul style="list-style-type: none"> <li>Uses a combination of number names and symbols to compare amounts – i.e., makes and compares tally marks.</li> <li>Estimates amounts in a range of contexts – i.e., which group has more children, which will be taller etc....</li> </ul> <p>Counting:</p> <ul style="list-style-type: none"> <li>To recite numbers from 0 – 10 and beyond</li> <li>To understand 1:1 correspondence 1 – 10 and beyond</li> <li>To identify the total from 5-10+ objects</li> <li>To count out from a larger group</li> <li>To begin to identify 1 more and 1 less – addition and subtraction.</li> <li>To identify arrangements of 1-4 objects by sight – subatiscing</li> <li>To begin to understand the differences between odd and even numbers.</li> </ul> <p>Cardinality:</p> <ul style="list-style-type: none"> <li>To make marks to represent numbers.</li> <li>To write some recognisable numbers</li> <li>To match numerals and quantity beyond 5</li> <li>Can order numbers and recognizes when numbers are missing.</li> <li>Subatiscs amounts 4-5.</li> </ul> <p>Composition:</p>

	<p>Numbers 0 - 5</p>	<ul style="list-style-type: none"> <li>Begins to know that larger amounts are made up of smaller amounts.</li> <li>Begins to understand that each number is 1 more than the one before or 1 less than the one after – early addition and subtraction.</li> <li>Begins to understand that an amount can be shared in different ways – early division.</li> </ul> <p><u>Key Vocabulary</u> Rhymes that count on and back Language associated with quantity – more, less, fewer, bigger, smaller. Questions – Can I have one more? How many? First and last Numbers 0 – 10</p>	<ul style="list-style-type: none"> <li>Can partition small amounts 1-5 in different ways – understands that the amount is still the same.</li> <li>Begins to subdivide larger numbers by recognizing smaller amounts – i.e., 6 is made up of 3 and 3.</li> <li>To understand 1 more, take away 1, add 1 in a range of contexts.</li> <li>Begins to understand and use mathematical symbols to represent equations – i.e., + - x =</li> </ul> <p><u>Key Vocabulary</u> Ordinal numbers (first, second, third), more, fewer, big, small, less, fewer, take away, subtract, add, equals, same, problem, odd, even</p>
<p>Measures</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>To explore filling various vessels in different shapes and sizes.</li> <li>To begin to understand differences linked to measurement– big/ small, heavy/ light.</li> <li>To explore and notice objects of different size and weight.</li> <li>To use own body to explore similarities and differences in terms of length and height.</li> <li>Begin to understand and use the visual timetable.</li> <li>To begin to understand routines using now and next.</li> </ul> <p><u>Key Vocabulary</u> Big, small, heavy, light, now, next, later, finished, after, before</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>To compare two objects and begin to say what is different – size, weight.</li> <li>To begin to choose resources according to size or weight – i.e., which is the heaviest?</li> <li>To use the language of size accurately in play</li> <li>To begin to categorize objects by size or weight.</li> <li>To understand when a vessel is full or empty.</li> <li>To talk about events in the past</li> <li>To understand and talk about sequences of events – i.e., daily routine</li> </ul> <p><u>Key Vocabulary</u> Full, half full, empty, lots, none, more, then, next, now, high, low, long, short, bigger, smaller.</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>To recall past events independently</li> <li>To talk about or predict future events independently.</li> <li>To begin to use time language correctly.</li> <li>To sequence events in stories</li> <li>To compare resources – longer, heavier, lighter, shorter, empty, full – and begin to order 3 / 4 items.</li> <li>To use the language of opposites when comparing objects</li> <li>To begin to use nonstandard measures (ribbons, steps, blocks, hands, claps) to measure items.</li> <li>To recognize and use some tools for measuring weight, length, capacity, and time.</li> <li>Begins to measure time with calendars and timers.</li> </ul> <p><u>Key Vocabulary</u> Bigger, taller, stronger, shorter, empty, full, half full, yesterday, tomorrow, next week, first, last, near, far, soon, later, earlier</p>

<p>Shape</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• Selects shapes to balance and stack – can build simple towers or enclosures from blocks.</li> <li>• To begin to recognise similarities in shape.</li> <li>• Beginning to use appropriate language to describe shape properties.</li> <li>• Selects shapes to match pairs or fit into spaces in inset puzzles.</li> </ul> <p><u>Key Vocabulary</u> Round, flat, straight, bendy, curly, line, pointy – words to describe shape properties</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• Recognises some common 2d and 3d shapes in the environment – i.e., can find a cuboid etc...</li> <li>• Beginning to name and describe common 2d and 3d shapes.</li> <li>• Beginning to notice that 2d shapes can be found in 3d shapes – i.e., square faces on a cube.</li> <li>• Beginning to compose and decompose images using shapes – i.e., makes a picture of a train using 2d shapes</li> <li>• Builds enclosures and simple constructions with confidence – selects and balances pieces with skill.</li> <li>• Selects puzzle pieces with purpose and fits them together – i.e., more complex inset and jigsaw puzzles.</li> </ul> <p><u>Key Vocabulary</u> Circle, square, triangle, oblong, cube, cuboid, sphere, pyramid, cylinder – and technical words that describe properties (see below)</p> <ul style="list-style-type: none"> <li>• 2d – angle and side (not corner. You could say the ‘pointy angle)</li> <li>• 3d – face, edge, vertex (where 2 edges meet) and point</li> </ul>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To build independently using a variety of shapes and blocks, making more complex structures – i.e., arches and bridges</li> <li>• To combine shapes to create new shapes – i.e., 2 squares to make an oblong.</li> <li>• To talk about 2D and 3D shapes using mathematical language – see vocab left.</li> <li>• To recognize and name a wider variety of 2d and 3d shapes – pentagon, hexagon, rhombus, prism, cone.</li> <li>• Can tessellate shapes confidently using larger, more complex interlocking jigsaws.</li> </ul> <p><u>Key Vocabulary</u></p> <ul style="list-style-type: none"> <li>• 2d - Pentagon, hexagon, octagon, rhombus, trapezium</li> <li>• 3d – cone, square based pyramid, triangle-based pyramid, prism (triangular, pentagonal etc....)</li> </ul>
<p>Pattern</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To join in with repeated actions in songs and rhymes.</li> <li>• To begin to talk about patterns they can see e.g., spots.</li> <li>• Beginning to make their own patterns – i.e., lining up toys or materials or adding patterns whilst drawing or sculpting.</li> <li>• Becoming familiar with patterns in daily routines.</li> </ul> <p><u>Key Vocabulary</u> Words to describe patterns – spotty, zig zag, lines</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• Beginning to notice patterns in stories – beginning, middle and end.</li> <li>• Joins in with repeated action sounds and movements.</li> <li>• Beginning to create own sound and action patterns.</li> <li>• To recognise simple patterns in the environment and categorise these e.g., these are all stripes.</li> <li>• Beginning to explore repeated patterns – AB and ABC</li> </ul> <p><u>Key Vocabulary</u> Beginning, middle, ending, next, after, before – plus a widening vocabulary for describing patterns</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To anticipate what comes next in the daily routine – pattern of events.</li> <li>• To extend ABAB and ABC patterns and recognize the unit of repeat.</li> <li>• To create own movement and sound patterns with confidence – becoming more complex</li> </ul> <p><u>Key Vocabulary</u> First, then, next, after, before, morning, afternoon, earlier, later, in a minute.</p>

<p>Spatial awareness, direction &amp; Position</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To fit their bodies into spaces – through doorways, in boxes, through tunnels etc....</li> <li>• To fit shapes and objects through spaces – i.e., shape sorters or post boxes</li> <li>• To empty and fill containers.</li> </ul> <p><u>Key Vocabulary</u> Up, under, through, over, empty, full, pour.</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To understand and follow simple instructions using positional language.</li> <li>• To navigate objects and environments with their bodies with more confidence</li> <li>• Beginning to rotate and move objects into the position that they want/need – i.e., fitting toys into containers or moving building blocks to create more complex structures.</li> </ul> <p><u>Key Vocabulary</u> Under, over, in front, behind, next to, now, next, later Forwards, backwards, up, down, around the corner, turn</p>	<p><u>Key Knowledge &amp; Skills</u></p> <ul style="list-style-type: none"> <li>• To use a range of positional language to give directions.</li> <li>• To begin to understand simple maps and create their own.</li> <li>• To remember different routes and pathways.</li> <li>• To navigate obstacle courses with confidence</li> <li>• To navigate obstacles safely whilst participating in a range of chasing games</li> <li>• To rotate and move objects into the position that they want/need with confidence</li> </ul> <p><u>Key Vocabulary</u> Tomorrow, yesterday, later, next week, future Left, right, straight on, go past, walk near, back to, cross over, by the ...., under the bridge, through the tunnel. Map, route, path, directions, Google maps</p>
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## Impact

### 2-year-olds:

- Will be able to use number language in their play.
- They will complete a simple inset puzzle and be able to match basic shapes.
- They will begin to recognise when two objects have the same pattern, shape, or size.
- They will understand how their bodies fit into spaces and shapes fit into spaces.
- They will begin to anticipate different times of the day and understand the familiar routine.

### 3-year-olds:

- Will be beginning to count objects 1-10 (one to one principle)
- Will be beginning to use the counting sequence 1-10 (stable order principle)
- Will be beginning to understand amounts (cardinal principle)
- Will be beginning to recognise, more, less, and same when comparing amounts.
- They will be able to complete more complex puzzles and build more complex structures.
- They will notice basic shapes in the environment and say when they are the same.
- They will begin to name some common 2d and 3d shapes.
- They will begin to make repeated patterns.
- They will be able to understand positional language and talk about events that have happened in the past.
- They will understand daily routines and begin to predict what comes next.
- They will be able to compare sizes and understand the vocabulary related

### 4-year-olds:

- They will be able to count up to 10 objects and beginning to count beyond.
- They will be able to count amounts accurately and record them in various ways.
- They will understand 1 more and 1 less.
- They will recognise and use numerals 1-10
- They will be able to name and describe a range of 2d and 3d shapes.
- They will be able to use shapes to create pictures and structures.
- They will be able to discuss patterns and create their own repeating patterns.
- They will give simple route directions to others and use positional language correctly.
- They will understand what is in the future and events that happened in the past.
- They will demonstrate their independence when following nursery routines.
- They will order objects by size, weight, and capacity.
- They will begin to measure time in different ways.