MATHEMATICS IN THE EARLY YEARS FOUNDATION STAGE

This document indicates how our school has designed the curriculum in early years to give children the mathematical foundational knowledge and understanding they will need for key stage 1 and for the rest of their schooling. It is expected that children will encounter, explore and learn the concepts throughout provision and at different times throughout the year, additional to these times of directed teaching input. Whilst focusing on the different Mathematical Development Focus Skills, practitioners will target individual children and teach these skills based on the child's own number sense accordingly, choosing and using the appropriate and varied representations and resources across the school year.

Practitioners should use this as a working document, making annotations of any changes and additions they make. It is important that practitioners provide multiple child centred and adult scaffolded opportunities in Mathematics rather than leading children into formalised adult-led provision too early.

MATHEMATICS

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Statutory Framework for the early years foundation stage, DfE, Effective 1 September 2021

AUTUMN TERM – 14 weeks

OPPORTUNITIES WITHIN THE DAILY ROUTINE:

Mathematics should be continuous throughout the Early Years Provision and daily routine. Below is a suggestion of such opportunities for Mathematics – highlight chosen opportunities to use within this term.

- *Register*
- *No. of children*
- *Fruit*
- *Day – Date*
- *Days of the week*
- *Day / month / season*
- *Fred Fingers*
- *Sorting & classifying*
- *Number wall*
- *Vote board*
- *How many here? Absent?*
- *Counting forwards / backwards*
- *Timetable*
- *Ordinality*
- *Times of the day*
- *Routines*
- *References to clock*
- *Birthdays*
- *Age*
- *Height*
- *Singing songs*

WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
1	Reception Baseline Assessments	• https://www.gov.uk/guidance/reception-baseline-assessment
2	**Number - Counting** The one-to-one principle - Saying number words in sequence - Tagging each object with one number word - Knowing the last number counted gives the total so far - Show a number of fingers without counting *(counting in a line – movement, counting in a line – touch, arranging in a line for counting, counting in other arrangements, counting pictorially*)	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories - Counting
3 4	**Number – Comparison** - Comparing quantities recognising more/less without counting *(distinct difference)* - recognising when there is the same amount - use counting to identify which is more/less *(real objects and pictures of real objects)* *(compare numbers that are far apart, near to and next to each other)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Comparison • Learning Trajectories – Comparing Number
5	**Number – Cardinality** Subitising - Recognising small quantities without needing to count them all - Instantly recognise small quantities *(regular and irregular arrangements)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Composition • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories – Subitising • Learning Trajectories – Composing Number
6 7	**Number – Composition** Subitising - Recognise that numbers are made up of smaller numbers - Recognise smaller quantities within larger amounts - Seeing groups and combining to a total - Separate a small amount of objects in different ways *(regular and irregular arrangements, talk about different arrangements they can see within the whole)*	
8	**Number - Counting** The 5 Counting Principles - Reciting number words forwards - Tagging each object with one number word - Knowing the last number counted gives the total so far - Link/match the numeral with its cardinal number value - Show a number of fingers without counting *(counting in a line – movement, counting in a line – touch, arranging in a line for counting, counting in other arrangements, counting pictorially, a range of number formats/fonts)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories - Counting
9	**Number - Counting** Conservation - Know that number does not change if things are rearranged *(as long as none have been added or taken away)* - Recognise amounts have been rearranged but are still the same - make given patterns with the same number of things - Show a number of fingers without counting	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories - Counting
10	**Pattern** AB pattern - Copy, continue, create, fix and describe	• Development Matters • Birth to 5 Matters

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WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
11	*(Patterns can be made with objects, outdoor materials, movements and sounds. Also within contexts such as turn taking, timetables, numbers and stories)*	• NCETM Early Years Typical Progression Chart – Pattern • Learning Trajectories - Patterning
12	**Spatial Awareness** - Responds to and uses language of position and direction - Predicts, moves and rotates objects to fit the space or create the shape they would like *(riding vehicles around routes, construction, jigsaws, tangrams, numicon pictures)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – Spatial Visualization • Learning Trajectories – Spatial Orientation
13	**Shape** - Choose items based on their shape which are appropriate for purpose - Use informal language and common shape names - Show similarities and differences between objects *(choose for purpose such as wedge for ramp, discuss appropriate and inappropriate choices, informal language such as slanty, common 2d and 3d shape names, discuss nearly shapes)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – 2D shapes • Learning Trajectories – Composing 2D shapes • Learning Trajectories – Disembedding Shapes • Learning Trajectories – 3D shapes • Learning Trajectories – Composing 3D shapes
14	One week spare to allow for the curriculum to move around to make way for assessment week. Where possible, use remaining lessons in the assessment week to consolidate and revisit aspects as appropriate – Maths should still happen that week once assessments are complete.	

SPRING TERM – 12 WEEKS

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WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
1	**Number – Counting** The 5 Counting Principles - Reciting number words forwards and backwards - Count from numbers other than 1 - Count a smaller number from a larger group - Link/match the numeral with its cardinal number value - Recognise that each counting number is one more than the one before *(counting in a line – movement, counting in a line – touch, arranging in a line for counting, counting in other arrangements, counting pictorially)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories - Counting
2	**Number – Counting** The 5 Counting Principles - Recognise that each counting number is one more than the one before - Understand the one more than / one less than relationship between consecutive numbers *(staircase patterns, number lines)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories - Counting
3	**Number – Comparison** - use counting to identify which is more/less *(real objects and pictures of real objects)* - compare two numerals through counting by counting or matching one-to-one - order quantities and numerals *(compare numbers that are far apart, near to and next to each other)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Comparison • Learning Trajectories - Counting • Learning Trajectories – Comparing Number • Learning Trajectories – Adding / Subtracting
4 5	**Number – Composition** - Separate a small amount of objects in different ways - Separate a small amount of objects in different ways and recognise that those groups can be recombined to make the same total - Separate the same amount into different pairs of numbers - Know the whole is bigger than a part	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Composition • Learning Trajectories - Subitizing • Learning Trajectories – Composing Numbers • Learning Trajectories – Adding / Subtracting
6 7	**Measure – Length, weight & capacity** - Recognise attributes of measure *(e.g. length – long/tall, weight – heavy/light)* - Compare measure *(e.g. longer / heavier)* - Align starting points for measure - Estimate and predict measure - Order and compare measure - Make appropriate choice of measuring tool *(e.g. spoon or cup to fill a bucket?)* - Use units to measure and compare *(e.g. identical bricks, cm cubes, metre sticks)* *(non-standard consistently sized units, standard units, length, volume, capacity and weight)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Measures • Learning Trajectories - Length • Learning Trajectories – Volume
8 9	**Pattern** More complex patterns - Copy, continue, create, fix and describe - Represent patterns with symbols *(e.g. red dinosaur represented by red dot)* *(AB, ABC, ABB, ABBC, AABB patterns. Patterns can be made with objects, outdoor materials, movements and sounds. Also within contexts such as turn taking, timetables, numbers and stories)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Pattern • Learning Trajectories - Patterning

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WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
10	**Spatial Awareness** - Use spatial language, including following and giving directions, and describing what they see from different viewpoints - Investigate turning and flipping objects in order to make shapes fit and create models (describe position and give directions in play and everyday routines)	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – Spatial Visualization • Learning Trajectories – Spatial Orientation
11	**Shape** - Compose and decompose shapes - recognise a shape can have other shapes within it, just as numbers can - combine shapes to make new shapes - predict what shapes they will make when folding paper	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – 2D shapes • Learning Trajectories – Composing 2D shapes • Learning Trajectories – Disembedding Shapes • Learning Trajectories – 3D shapes • Learning Trajectories – Composing 3D shapes
12	One week spare to allow for the curriculum to move around to make way for assessment week. Where possible, use remaining lessons in the assessment week to consolidate and revisit aspects as appropriate – Maths should still happen that week once assessments are complete.	

SUMMER TERM – 13 WEEKS

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WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
1	**Number – Counting** - Estimate how many there might be before counting - Counting accurately using 5 principles of counting	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Cardinality and Counting • Learning Trajectories – Counting • Learning Trajectories – Comparing Number
2	**Number – Comparison** - Comparing quantities of the same sized objects - Comparing quantities of different sized objects - Identify 'first, second etc' objects in a sequence - Ordinal numbers	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Comparison • Learning Trajectories – Comparing Number
3	**Number – Composition** - Separate the same amount into different pairs of numbers - Know the whole is bigger than a part - Separate the same amount into more than two parts	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Composition • Learning Trajectories - Subitizing • Learning Trajectories – Composing Numbers • Learning Trajectories – Adding / Subtracting • Learning Trajectories – Composing Numbers
4	**Number – Composition** Number Bonds - Know which pairs make a given number - Automatically recall number bonds	
5	**Number – Composition** Number Bonds - Know which pairs make a given number - Automatically recall number bonds - Understand that double means twice as many - Recognise doubles and non-doubles	
6	**Number – Composition** Sharing and Grouping - Recognise and make equal groups - Recognise 'left overs' from sharing and grouping	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Composition • Learning Trajectories - Subitizing • Learning Trajectories – Multiplying / Dividing
7	**Number – Composition** Odd and Even Numbers - Recognise some quantities will share equally into 2 groups and some will not - Notice the odd and even structure on numbers, shapes and in ten frames - Explore and represent odd and even numbers	• Development Matters • Birth to 5 Matters • Learning Trajectories – Multiplying / Dividing
8	**Measure - Time** - Recall a sequence of events in everyday life and stories - Order and sequence events - Begin to measure time with timers and calendars - Make children aware of the clock	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Measures

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WEEK	EARLY MATHEMATICAL DEVELOPMENT FOCUS	FURTHER REFERENCE DOCUMENTS
9	**Shape** - Construct and create things that represent objects in their environment - Be aware and justify choice of shapes for purpose *(e.g. cylinders for wheels because they roll)*	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – 2D shapes • Learning Trajectories – Composing 2D shapes • Learning Trajectories – Disembedding Shapes • Learning Trajectories – 3D shapes • Learning Trajectories – Composing 3D shapes
10	**Shape** - Recognise regular shapes, such as triangles and rectangles, represented differently *(e.g. size, colour, orientation, materials)* - Recognise regular shapes within other shapes	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Shape and Space • Learning Trajectories – 2D shapes • Learning Trajectories – Composing 2D shapes • Learning Trajectories – Disembedding Shapes • Learning Trajectories – 3D shapes • Learning Trajectories – Composing 3D shapes
11 12	**Pattern** - Replicate a pattern using a different median *(e.g. shape pattern replicated using leaves, sticks and stones)* - Make a pattern which repeats around a circle - Make a pattern around a border with a fixed number of squares - Spot patterns in the world around us, beginning to identify the pattern 'rule'	• Development Matters • Birth to 5 Matters • NCETM Early Years Typical Progression Chart – Pattern • Learning Trajectories - Patterning
13	One week spare to allow for the curriculum to move around to make way for assessment week. Where possible, use remaining lessons in the assessment week to consolidate and revisit aspects as appropriate – Maths should still happen that week once assessments are complete.	