Maths in Early Years

A guide to this subject in our school

Merrydale Infant School

1 - Introduction

Mathematics in the Early Years has its own area of learning and includes Number and Numerical Patterns. As part of the EYFS reforms (September 2021) Shape, Space and Measures was removed as an Early Learning Goal. Despite this, shape, space, measures and pattern continue to be fundamental skills which impact on many other areas of learning and which form the broader mathematical curriculum. It therefore remains important to ensure that children within EYFS are given opportunities to develop these skills and knowledge within shape, space, measures and pattern ready to access the curriculum in Year One.

English Early Learning Goals

Number

- Have a deep understanding of numbers to ten, including the composition of each number
- Subitise (recognise quantities without counting) up to five
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to five (including subtraction facts) and some number bonds to ten including doubling facts

Numerical patterns

- Verbally count beyond twenty, recognising the pattern of the counting system
- Compare quantities up to ten in different contexts, recognising when one quantity is greater than, less than or the same as another quantity
- Explore and represent patterns within numbers up to ten, including odds and evens, doubles facts and how quantities can be distributed equally

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 ten, the relationships between them and the patterns between those numbers. By providing frequent and varied opportunities to apply this understanding—such as using manipulatives like 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 spacial reasoning skills across all areas of mathematics, including shape, space and measure. It is important that children develop positives attitudes and interest 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.

2 - Child Initiated Learning

We know that there are key indicators and examples of effective practice that can be seen when monitoring Maths in the Early Years, in relation to child initiated learning in an enabling environment. We know what we want to see children doing.

Block play and construction

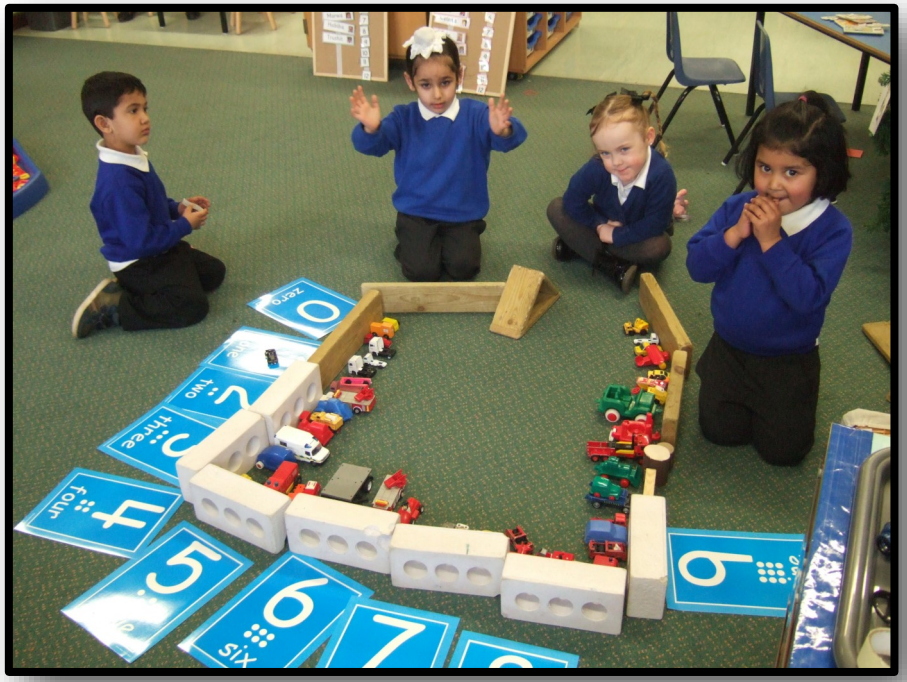
- Comparing the size and shapes of blocks and sorting
- Use 1:1 correspondence
- Counting
- Using standard measures
- Using unit blocks to measure
- Making different patterns with size and shape
- Showing spacial awareness
- Using knowledge of part-part-while relationships
- Recording data

Dough

- Using language related to shape
- Talking about numbers and using in context
- Weighing ingredients to make their own dough
- Comparing shapes and sizes and making patterns
- Subitising
- Using 1:1 correspondence
- Comparing length and weight

Imaginative and role play

- Using language associated with time in context
- Using real items as part of play, such as scales, clocks, egg timers, number pads
- Using 1:1 correspondence, for example when setting a table
- Recognising numerals in context
- Using language associated with capacity
- Using play money
- Ordering resources



Outdoor Play

- Exploring capacity using larger containers
- Investigating measures
- Collecting, sorting and counting natural objects outside
- Exploring non-standard measures
- Using large, outdoor equipment to explore shape and which make stable structures
- Making sound patterns using outdoor resources and instruments
- Using balances and scales in the mud kitchen
- Exploring spacial awareness in den making
- Exploring weight, including through pulley systems
- Exploring distance and ordinal numbers in races

Water

- Sorting, counting and comparing objects
- Exploring capacity
- Pouring water and filling different containers
- Acting out familiar songs and rhymes
- Using non-standard and standard measures

Sand

- Using different sized containers to compare capacity
- Using non-standard measures
- Exploring 2D and 3D shape
- Making patterns
- Counting objects

Art and Design and making

- Making patterns through printing and weaving
- Ordering junk materials by shape and using appropriate shapes for different purposes
- Making 3D structures, showing an awareness and understanding of shape
- Using non-standard and standard measures

Small World

- Using maths story books alongside supporting resources
- Using a range of character sets and sorting by size, markings, numbers in a set
- Using numbers and numerals in context

Adults scaffolding learning during child initiated play

Adults will be

* Observing children and responding to their fascinations
* Responding to the physical skills presented
* Observing children and modelling mathematical language by commenting on and questioning children about how they select and arrange objects
* Encourage children to describe their choices and explain their reasoning
* Using prompts and questions to support children in making direct comparisons
* Suggesting and scaffolding activities that involve children looking carefully at the shape of numerals
* Exploring different ways of partitioning by encouraging children to try alternative ways of organising small objects
* Observing how children respond to numerals in the environment and asking questions that encourage children to recognise and discuss contexts in which numerals are useful
* Modelling the language and recording of 1:1 correspondence
* Drawing children's attention to instances when you record pictures, tallies or numbers to keep track of count.
* Use prompts and questions to encourage children to mark make in appropriate situations
* Encouraging children to describe patterns or numbers they have created
* Using prompts and questions that encourage children to organise, count and compare objects and containers
* Modelling the language of addition and subtraction and encouraging children to find totals
* Scaffolding and modelling activities to promote the use of reasoning to support estimation

3. Adult led Learning

We know that there are key indicators of effective practise when monitoring Maths in the Early Years, in relation to adult led learning.

* Adults setting an intention for learning that is well matched to the developmental stages of the children, building on what the children already know and can do and show interest in
* Adults guiding learning through playful, experiential activities which are presented in imaginative ways, are hands on and require participation from the children
* Activities and experiences that are and require active participation from the children
* Activities that are delivered to individual children, small groups of children depending on the activity and the age of the children.
* Adults using resources and materials that the children are familiar with and have access to in child initiated play, introducing new resources, modelling and then providing in the environment for children to explore independently later
* Sensitive interaction through open questioning, modelling, thinking aloud and genuine interest and curiosity
* Introducing and encouraging the use of accurate mathematical vocabulary