MATHEMATICAL DEVELOPMENT POLICY

"How children learn about numbers and develop mathematical understanding during the pre-school years is vitally important and sets them on a path towards numeracy skills and confidence in later life" All Party Parliamentary Group 2015

Mathematical Development provides the foundation for children's mathematical learning. Children's mathematical development is supported with reference to Early Years Foundation Stage statutory and non-statutory materials and the areas of learning described within them, i.e. Number and Shape & Space.

CHILDREN	ADULTS
By following the Early Years Foundation Stage Curriculum, and the Characteristics of Effective Learning, children are supported and encouraged to develop their full potential in the following areas: **NUMBER** **This area of mathematical development includes (but is not restricted to) children's ability to** • understand numbers and the relationships between them • count • find patterns and make connections • sort and match and categorise • develop their understanding of number value and quantity • understand the relationship between numerals and quantity **SHAPE and SPACE** **This area of mathematical development includes (but is not restricted to) children's awareness of** • pattern • size • time and sequences of events • volume and capacity • weight • length • height • 2-D and 3-D shapes • money • position e.g. of one object relative to another **Children will explore these concepts at an age-appropriate level, make comparisons, examine differences and similarities and use both standard and non-standard measurements. They will use a range of language including both their own, informal language to describe these concepts as well as encountering specific vocab related to them.**	**We aim for our children to become confident and enthusiastic learners of mathematics.** **We are aware of the cross-curricular nature of early mathematical concepts and consider the role of the adult, in extending and enhancing mathematical development, to be a vital support for children's learning.** **We believe in building on the child's natural interest in and existing experiences of mathematical concepts.** **We recognise that children sometimes exclusively show us their fascination with mathematics through their play so we observe and tune in to these interests.** **We develop these interests both in breadth and depth through first hand, practical experiences.** **In order to do this we will:** • Provide stimulation and challenging mathematical experiences. • Provide first hand experiences to make activities meaningful and relevant • Provide structured learning opportunities – some focusing on mathematical development and some drawing out the mathematical learning in other activities – and also respond to spontaneous opportunities for mathematical learning. • Create an environment where maths is a natural part of the daily curriculum. For example, opportunities within the daily routine while preparing and sharing snack or tidying and organising resources. • Model mathematical thinking and also to model and encourage the use of talk to verbalise thoughts and to develop thinking • Give children time for reflection, discussion and embedding of mathematical thinking

In the course of their mathematical development children will

- **engage in playful, open-ended opportunities so they can develop enquiring minds**
- **explore a wide-range of practical, meaningful activities to develop mathematical thinking, problem solving and reasoning**
- **be encouraged to enjoy and have fun with all aspects of mathematics so they can develop their learning with a positive attitude towards it.**
- **formulate and solve problems**
- **encounter new ideas to support their growing knowledge and understanding**
- **be encouraged to develop a practical, problem-solving approach**
- **encounter mathematical concepts across the curriculum, for example, through role play, songs, creative activities, construction, physical exercise etc.**
- **hear and have opportunities to use mathematical language and terminology both in English and in their home language where applicable and possible**
- **come across mathematical concepts and language across all areas of the curriculum encompassing both the indoor and outdoor environments**
- **see examples of numbers, shapes and other mathematical representations in the environment around them**
- **access mathematical learning through the appropriate use of ICT**
- **be supported to develop representations, maybe through mark-making, maybe through the use of other resources, of their own mathematical understanding (for example, making a tally as they score goals or adding a marble to a pot for each child who is at Homerton that day etc.)**

- **Teach and use correct mathematical language and encourage use of mathematical language in the context of play**
- **Create a mathematically rich environment indoors and out, to include numbers, shapes and other mathematical terminology displayed as well as opportunities to interact with mathematical displays**
- **Model mathematical mark-making & support children in their representations of their own mathematical understanding and to record their findings**
- **Provide a maths "toolkit" (along with numerous other mathematical resources" to aid in the use of problem solving**
- **Include a wide range of relevant stories and rhymes to explore elements of mathematics**
- **Support EAL children with their understanding of specific mathematic vocabulary and celebrate mathematical vocabulary in children's home languages**
- **Provide information directly to parents regarding developing their children's maths skills at home & collaborate with them to do so, for example by sending home "maths on the back" sacks.**

Outdoors

Resources and Opportunities for learning in mathematical development outside can be bigger, messier and louder than inside. For example,

- measuring larger plants and structures with non-standard and standard measure and making comparisons, for instance "I just threw the bean bag further than last time"
- recognising and making patterns, in particular with natural materials
- large construction with wooden blocks, large cartons and other construction materials to explore the properties of 3D shapes
- counting, including in counting songs, games and parachute play and for a real purpose, for example, "how many seconds to run around the path?"

Numerals, signs, photographs and other systems for organising and storing resources encourage problem solving, for example "There should be 3 trucks but there's only 2 – 1 is missing." We ensure that children are exposed to numbers in print and form in the outside environment as well as inside.

Reviewed & modified by Mitali Peckham February 2018

Next Review: February 2021