

## **Maths at Beit Shvidler in the Early Years**

Mathematical understanding begins when children are very young. They should be encouraged to experiment with numbers and not be afraid to make mistakes. Throughout the EYFS, opportunities are found for meaningful maths learning that make mathematical concepts meaningful and practical for children.

The EYFS framework states clearly that:

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.

Maths in the Early Years can be split into three main areas of learning:

### **1. Number**

Children need support to explore, experiment and discover. Repeating maths activities will develop their understanding of mathematical concepts. Children will begin to understand regular daily routines, like snack time and going-home time, and how to use numbers to describe things.

Children will be encouraged to use numbers 'in context', using numbers in practice, not just in theory. This deepens their understanding. Children can then apply their knowledge and experiment. They can test their new understanding of maths by using numbers in context through the day in real-life situations.

Children will develop their own working theories by using numbers in everyday contexts. They will learn to communicate these to others and over time remember mathematical concepts.

Maths is used for counting and quantities, but children need to develop the other ways numbers are used. For example, for measurements, putting things in order and understanding values.

## 2. Patterns and Connections

Patterns are central to maths and children have an instinctive idea of them. Children's ability to notice patterns forms the basis of early mathematical thinking, and children are taught to be aware of patterns and start spotting patterns themselves. They are guided to notice how patterns change, and whether they can see any irregularities. Children are given objects from which to create patterns, and they are also exposed to pattern recognition activities, along with talk opportunities around them. These activities support the foundations for recall of counting sequences and understanding number operations. Learning from patterns and connections help children to make their own predictions and form logical connections. It is an important foundation for later mathematical thinking and reasoning.

## 3. Spatial Reasoning

Spatial reasoning is the understanding of how objects can move in a 3 dimensional world. Babies and young children use this understanding to recognise body parts and the location of objects and people around them. They learn and understand spatial concepts through play such as shape sorters. Understanding the physical properties of objects allows children to picture shapes in their minds and think about how they could be manipulated. This is an important building block of mathematical thinking. It lies behind problem solving and later maths skills, including geometry. Children are curious and engage naturally in mathematical play.

Children are practising spatial understanding as they use toys like open-ended building blocks or crawl around in dens. They are taught spatial words to describe what they are seeing. Spatial reasoning is developed through physical development and has strong links to communication and language from birth.

Children use these skills to understand the physical world around them. Understanding spatial relationships allows children to move and navigate in their world. Activities like climbing and squeezing themselves into different types of space develops this further.

Children will start to recognise and remember how objects have characteristics such as shape, size, volume and weight. Then they can start thinking about the way objects interact and how they can move them and play with them in the 3-dimensional world.

Problem solving is at the heart of mathematics and children should be encouraged use their creativity and to explore, play and push boundaries. You should be looking for mathematical opportunities during daily activities.

By the end of Reception, the expectation is that children will have reached these Early Learning Goals:

### **Number**

Children at the expected level of development will:

- 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**

Children at the expected level of development will:

- 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.

There is still a high importance attached to understanding of shape, space and measure, even though this is not assessed through the Early Learning Goals.

### **Teaching Approaches:**

Maths is taught through songs, games, stories, practical activities as well as whole class teaching and we use a variety of practical, hands on resources. White Rose and Power Maths are used to inform planning, teaching and learning. Children are assessed informally throughout the year.