



Overview

We need to use maths everyday, for example when telling the time, playing games, cooking, building, snack time, lunch time.

Concrete – children have the opportunity to use concrete objects to help them understand and explain what they are doing.

Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

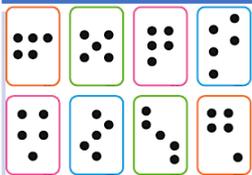
Number



Cardinality and counting

Numbers are what we use for counting and measuring. Numbers are made up of these digits: 0 1 2 3 4 5 6 7 8 9

The cardinal value of a number refers to the quantity of things it represents. When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to. Counting is one way of establishing how many things are in a group, because the last number you say tells you how many there are. Children enjoy learning the sequence of counting numbers long before they understand the cardinal values of the numbers.



Subitise

Children can recognise amounts up to 5 without the need to count. They will first recognise these from familiar patterns, like a dice face or numicon, then in more unfamiliar patterns. Children can talk about 'what they notice' as a way of demonstrating how they recognised the total of the unfamiliar pattern.



Number bonds (composition)

Knowing numbers are made up of two or more other smaller numbers involves 'part-whole' understanding. Learning to 'see' a whole number and its parts at the same time is a key development in children's number understanding. Partitioning numbers into other numbers and putting them back together again underpins understanding of addition and subtraction as inverse operations

Numerical pattern

Comparison

Comparing numbers involves knowing which numbers are worth more or less than each other. This depends both on understanding cardinal values of numbers and also knowing that the later counting numbers are worth more (because the next number is always one more). This understanding underpins the mental number line which children will develop later, which represents the relative value of numbers

Pattern

Patterns can be made with objects like coloured cubes, small toys, buttons and keys, and with outdoor materials like pine cones, leaves or large blocks, as well as with movements and sounds, linking with music, dance, phonics and rhymes. Children will be able to create repeating patterns whilst spotting and talking about mistakes in pattern. Children can also spot and create patterns in a range of other contexts, such as printed patterns, timetables, numbers and stories.

Shape, space and measure

Shape and space

The areas of shape and space are about developing visualising skills and understanding relationships, such as the effects of movement and combining shapes together, rather than just knowing vocabulary. Spatial skills are important for understanding other areas of maths and children need structured experiences to ensure they develop these.



Measure

Mathematically, measuring is based on the idea of using numbers of units in order to compare attributes, such as length or capacity. Children experiment with these and use appropriate comparative language.

