

Maths through Play

Play is the natural way in which children learn. It is the process through which children explore, investigate, recreate and come to understand their world. Play is an activity in which everything that a child knows and can do is practised or used to make sense of what is new.

Role of the Adult

The quality of children's play is greatly influenced by the adults around them. Adults can provide materials and encouragement and open the door to new activities and learning. Play cannot be directed by adults. An adult can support, enhance or extend play, but the moment they interfere or dictate its progress then it ceases to be play.

Maths through Play

To many adults, the words Maths and Play have absolutely nothing to do with each other. For many of us, maths was a torture, something we had to do, and something we didn't understand and couldn't do. Play on the other hand was something we loved.

Young children are learning maths all the time through a wide variety of play experiences. From the time they are born, babies are surrounded by sense impressions. Shapes in particular are of immediate importance: babies react instinctively to the arrangement of shapes which make up the human face.

In the home, in parent and toddler groups, and pre-school settings, children have many opportunities to enjoy and learn Maths through Play.

"Play is an effective vehicle for fostering Mathematical concepts and developing positive attitudes to mathematics... Adults in the pre-school setting should seek to extend informally the mathematical experiences the children have already had in their home environment." (Curricular Guidance for Pre-school Education) (back page)

Maths in the Home

Maths is everywhere in the home. With the support of parents, children can grasp many mathematical concepts through their play.

Children will begin to:

- know and understand early maths language of measurement, shapes, spaces, positions, early numbers, order and patterns
- know the sequence of numbers
- begin to understand positional words, e.g. in, on, outside
- show an awareness of time
- be aware of shapes in their environment
- be aware of 1-to-1 correspondence
- acquire new vocabulary
- learn number rhymes and songs, e.g. one, two, buckle my shoe etc.
- be aware of conservation

When we say a child “knows her numbers” what we often mean is that she can recite the names of numbers in ascending order. This is quite useful to be able to do, but it means very little in itself. Children need to come to know what the number system really means. They can be helped to do this through play.

One of the first things they have to learn is about conservation – that 3 is always 3 no matter how it is arranged or presented, whether it is the number 3, the letters for three, 3 bricks, 3 buttons on a coat or 3 Billy Goats Gruff.

Before a child can understand numbers for things that can be seen – 3 miles, 3 years old – s/he needs real objects which can be seen and handled with a chance to check that the count is right each time.

Young children have many mathematical experiences in their home environment. For example:

- they learn about money as they go shopping with parents
- become aware of numbers as they count the stairs to bed
- start to understand the concept of time as they become familiar with the routine of their day – wash, dress, breakfast etc.

A child’s daily life offers many practical opportunities to learn about number, shape, space, sorting and matching. For instance:

- setting places at the table – a cup for me, a cup for you
- playing with water
- steering the pram
- helping to sort the washing, matching socks, big shirt / small shirt
- tidying up – putting similar items together
- matching lids to saucepans

Here are a few ways in which you can use play to learn mathematical concepts.

Sand and Water

- Using sand can develop mathematical concepts and language, e.g. heavy, light, empty, full, big, little
- Conservation – how much will it hold
- Make shapes and patterns
- Provide boxes and materials of different shapes and sizes to compare weight and quantity
- Look at the differences between wet and dry as a means of looking at weights

Language

- You can help to promote mathematical language such as – heavy, light, empty, full, long, short, big, small in relevant contexts
- Look at your home environment to develop language, especially positional words – small object in front of big object, behind, in, on

Dough

The use of dough can help to develop a mathematical understanding for pre-school children.

- Develops mathematical language – short, long, fat, thin
- Make shapes of different dimensions – flat shapes, 3-d shapes
- Create opportunities to compare things that float with things that do not

Imaginative Play

- Simple activities like letting your child set the table for dinner can help develop counting skills, e.g. getting out three pieces of cutlery.
- Involve your child with household activities. After washing, allow your child to sort clothes into different colours, or different types of clothes, e.g. t-shirts and socks. This will help to develop a child's knowledge of shapes and colours.

Books and Rhymes

Enjoy stories and rhymes with your child that has a mathematical element, e.g. "One-two, Buckle my Shoe",

This can also help to develop literacy skills by showing your child that the print reads from left to right.

Let your child count out items in the books – how many animals are on the page, how many items are blue.

Using rhymes can also help develop your Childs awareness of sequenceing

Physical Play

- Develop fine motor skills through physical activity, e.g. Sorting out a jigsaw, Threading beads
- Block play or playing with toy cars can help to develop sequencing by encouraging your child to sequence according to size, colour, use (e.g. bike, car, lorry)
- Playing with different sized blocks can help to develop an understanding of weight and dimensions.
- Tidying toys away allows children to sort into different sizes and colours.
- It can also develop mathematical language – first, second, third, how many are blue, which is largest / smallest.

Nature

By planting seeds you can help to develop your child's understanding of time and the life cycle of plants.

Watch as the plants grow and even measure your plant – develop language such as taller.

Teach your child about the different seasons and plant different items at different times of the year to compare colours, flowers, smells.

There are many opportunities for learning Maths through Play. For more ideas on Learning through Play, get a copy of "I Want To Play", a publication full of practical ideas to use at home with young children, available at Early Years, 6c Wildflower Way, Apollo Road, Belfast, BT12 6TA, Tel: 028 9066 2825.