

Maths in books, toys and games

Babies and young children can learn a lot about maths when they are sharing books or playing with toys and games. And it's not just numbers and counting – they can find out about lots of other maths ideas too, like shapes, patterns, space, size, sorting and matching.



Books, toys and games will help your child to discover and explore maths ideas, as well as learn about maths language.

The language of maths

Every day we use maths language without even realising it – when talking about numbers and counting, or about size, length, weight, amounts, or when comparing things. We also use maths words to describe the position, order, movement or direction of something, e.g. *next to*, *under*, *backwards*, *middle*, *down*, *through* etc.

These words are often part of the natural conversations that happen when sharing books, toys and games with your child:

- *“Let’s read the next page to see whether little dog can pull that heavy bag through the hole in the fence...”*
- *“Oh no! The dice rolled on the floor under the chair. It’s a ‘six’ so you can move forward six places.”*
- *“Shall we put the sheep behind the barn, or in the empty field next to the cows?”*



Hearing these words at the same time as they experience them – e.g. seeing the dice go *under* the chair – will help your child to understand the meaning of the maths language that is being used.

Conversations about books, toys and games are full of maths language



Maths in books and stories

A sense of order:

Sharing books with babies and young children develops their awareness that stories have a structure and sense of order to them, e.g. that they have a beginning, a middle and an end. You might have noticed that your child knows what is coming next if it's one of their favourites – and may even join in with the words or phrases.

Being able to put things into a sequence and think about what comes next is an important part of counting, and will also help your child to understand more complex maths and science ideas later on.

Try making up a story about your child's day – what happened in the morning... the afternoon... at bedtime?

Numbers and counting:

There are many counting books for young children to point at a picture as they count out loud. There are also many storybooks which encourage children to talk about numbers and counting:

- **Ten in the bed** is about the animals which fall out of a little boy's bed one by one...
- **Five little ducks** is a story based on a traditional song



- **The very hungry caterpillar** tells us about a caterpillar that eats one apple on the first day, two pears on the second day... and so on for seven days

Maths language in stories:

Very often there are lots of opportunities to explore maths ideas that crop up as part of a story – perhaps relating to size, or whether something is full or empty. Talking about the words and looking at the pictures can help children to build an understanding of what the words actually mean.



Maths in toys

Some toys are especially designed to help children develop maths ideas, but ALL toys will do this because maths is so much part of everything we do.

Shapes and sizes:

Handling interesting objects, perhaps in a treasure basket, can help babies begin to learn about shape, size, weight, texture and quantity. As they grow and develop, so does their understanding, as they play with different toys or objects:

- exploring shapes when posting them through holes in a shape sorter e.g. an empty box with holes cut in the sides
- connecting together Lego bricks to make different shapes and sizes
- jigsaws with a small number of pieces



Maths in games

Young children learn a lot about maths through simple games and activities such as board games like snakes and ladders, computer games, card games or dominoes.



Number names and counting:

Playing number games is a good way for young children to learn number names in order – both forwards and backwards – and to promote their understanding of counting. They also encourage them to use words like *forwards* and *backwards*, *more* and *less*.



Children can learn a lot about the different ways that numbers can be represented:

- dots on a dice or dominoes,
- symbols on a simple board game (1, 2, 3)
- number words on cards (*one*, *two*, *three*)

Sorting, matching and more:

Simple card games such as Happy Families or 'Spot the difference' games can encourage children to look for things that are similar and different. For older children, games like 'Four in a line' can encourage children to look for patterns and develop their problem solving skills.

**Maths is full of fun and games - and
games are full of fun with maths!**

