

A parent's guide to...

# MATHEMATICS FOR THE EARLY YEARS

What you can do to help!



## MATHS IN OUR EVERYDAY LIVES

In this leaflet we are going to explore how children aged 0-7 are surrounded by mathematics.

**Numbers** are all around us- from road signs, shop windows, clocks, bus numbers, television remote controls, keyboards, phones, street numbers, calendars, books- the list is endless!



Maths doesn't just start and end with numbers, children are also exposed to **patterns** in different places, such as wallpaper, wrapping paper and on clothing.

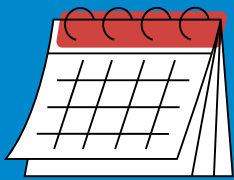
**Matching and sorting** is also a skill used in mathematics, and simple tasks such as laying the table, sorting clothes into colours when washing, arranging shoes and socks in to pairs and sorting and matching items in according to colour, size and shape, all involve maths!



**Shape and space** can be seen all around us. Activities such as jigsaw puzzles help to create spatial awareness.

Children will need to know **mathematical language** such as bigger or smaller, lighter or heavier, longer or shorter and empty or full- this is all a part of **measuring**.

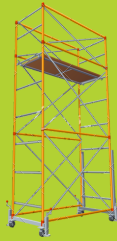
Children need to know how to work things out. For example, 'if my bag isn't big enough, is there another way of getting my shopping home?'. **Problem solving** activities will help children to develop these skills.



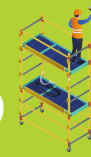
**Time** is a mathematical concept children are introduced to from a young age, and it is important children learn to understand the concept of time. How many of us use the phrase 'just a minute'- but what does this actually mean to our children?

Children will hear about days, months, weeks, minutes and hours- but this needs to be put in to context. Simple techniques such as using a sand timer for 'one minute' or by having calendars and visual representations of time within the home, all help to develop children's understanding of time.

**Estimating** is another mathematical concept children will become familiar with. We all estimate different things, such as how long something will take, whether something will fit and how much money is needed for a particular item- but by including children and asking them questions will also encourage their mathematical thinking too!



## HOW TO SCAFFOLD CHILDREN'S LEARNING



Some adults have a lasting negative idea of mathematics, perhaps stemming from their own childhoods. We do not want children to associate negativity with their own learning of mathematics, so it is important we 'scaffold' their learning. This will help them to build their confidence, make maths meaningful to them and encourage them to develop and extend their ideas.

We can **build children's confidence** by:

- Listening to children when they are talking to us about maths. Engage and respond to them with interest
- Talk through ideas with them and support their learning- provide reassurance and feedback about their ideas.
- Find out if your child has any specific interests which may help them with their learning. For example- they may enjoy baking. Baking a cake not only involves science but an awful lot of maths, as children are introduced to numbers, weight, volume, capacity and time.

We can make maths meaningful by:

- Putting mathematics into context as much as possible so children can see when they would use the mathematical skill they are developing
- At ages 0-7 we should always ensure we give children tasks that make sense to them.

We can **encourage children to talk about mathematics and develop and extend their ideas** by:

- Help to broaden and develop their mathematical vocabulary. Use phrases such as 'bigger or smaller', describe positioning of items such as 'on top of' or 'next to' etc. We can also use vocabulary to describe shape such as 'corners', 'sides', 'edges', 'round' etc.
- Listen to and support children's enthusiasm so it is not lost
- Develop curiosity- question your child about their interests
- Increase their confidence. Increase mathematical practice as mathematical skills require practice and repetition- respond to their practice with praise.
- Give children opportunities to extend their learning- perhaps a new number puzzle, a new biscuit recipe to bake together, or making a number poster together.

# SUSTAINED SHARED THINKING

Sustained shared thinking gives children the opportunity to carry out **problem-solving** activities and use their mathematical skills in different ways. For example, you could set up a tray of assorted different animals or toys, ask the child to cover their eyes or place a blanket over the tray and take one of the animals or toys away. Ask the child what is missing. This is a great way for them to start problem-solving by themselves!



# STRATEGIES TO SUPPORT MATHEMATICAL DEVELOPMENT



## Learning through play

Children should be given plenty of opportunities to learn through play and explore new equipment and resources before being asked to use them in a particular way.

Here at Kamelia Kids, our rooms are set up with different activities each day, so there is always something new and exciting for our children to play with!

## Learning through focused activities with an adult

Adults should talk things through with children to ensure they are clear on any concepts which have been introduced. For example, when learning about the concept of '**matching and sorting**', adults could ask open questions such as 'do you know why we are sorting our socks in to pairs?' and introduce games such as 'snap' or 'dominoes' to familiarise them with this concept.

## Open ended tasks to encourage exploration

Children should be encouraged to use mathematical skills which do not have an obvious outcome, such as putting out different items and egg boxes so children can sort these using their own criteria.

## Multi-sensory strategies

Adults should provide children with multi-sensory activities, such as cutting up play-dough into different lengths and shapes. This will help to develop mathematical skills as well as fine motor skills.

# ACTIVITIES TO DO AT HOME

## Numbers



- Practice counting songs and rhymes, for example, 'five little speckled frogs', 'five little monkeys' or '1,2,3,4,5 once I caught a fish alive'
- Board games that use numbers or a rolling dice such as 'snakes and ladders'
- Playing games outside that focus on numbers or time, such as 'What's the time, Mr Wolf?'
- Have displays around the home showing numbers, such as number posters, clocks or counting books.
- Practice counting activities- even something simple such as counting fingers and toes can really help a child's counting!
- Once a child can count to 10, practice counting up to 20, and then backwards from 10!
- Make bath time fun- introduce some bath toys such as rubber ducks, and practice counting them and singing along to 'five little ducks'. You can also buy special bath books to help develop a child's counting skills!



# MORE ACTIVITIES TO DO AT



HOME



## Pattern

- Look for patterns and repetitions in wallpaper and wrapping paper
- Older children can make patterns using beads and peg boards or painting/ printing
- Notice patterns in nature- such as the patterns formed in leaves, flowers, shells and stones or on an animals fur.
- Speak about the patterns of rhyming words found in nursery rhymes

## Matching and sorting

- This can be a great excuse to get your child to help hang out the washing and organise garments in to size, shape, colour, pairs, etc!
- Organise your child's toys into clearly labelled baskets so that children can pick their own resources- this also helps to introduce them to literacy as they begin to associate words with objects.

## Shape and space

- Look for different shapes in the environment, discuss how something may be 'round' or 'square'.
- Make shape pictures using colored paper

## Measuring

- Practice baking and cooking activities together. Equipment such as measuring jugs, weighing scales, different sized spoons, mixing bowls and cake or biscuit tins all help children to think about weight and volume.
- Use a measuring tape to measure plants and flowers that may be growing outside
- Use a height chart to measure your child, update this each month so they can look at how they are growing!
- Stories such as 'Goldilocks and the Three Bears' help children to think about size, weight and volume.

## Time

- Practice using a count-down timer such as a sand timer or egg timer at tidy-up time, or if your child needs to take turns with their toys
- Ask your child how many times they can hop or jump in one minute
- Read books that focus on time, such as 'Tell the time with Postman Pat'.

## Estimating

- Practice estimating and guessing games with children, such as 'how many yogurt pots will it take to fill up this container?'

## Technology

- Use computer programs or apps that encourage mathematical skills
- Use calculators to promote number recognition

# ADDITIONAL RESOURCES

## The Scottish Book Trust-

<https://www.scottishbooktrust.com/songs-and-rhymes>

This website features an online library of the UK's most loved nursery rhymes and features a filter, so you can search for 'counting' songs.

## The Songs We Sing-

<https://thesongswesing.wordpress.com/>

This website has a free directory of children's songs

## Words for Life

<https://wordsforlife.org.uk/>

This website has a selection of activities you can do at home based on your child's age

## Early Childhood Maths

<https://earlymaths.org/>

This website is designed for early years professionals and is guidance to support adults who work with children from birth to age seven

## Lets Talk About Math- Poster

<http://www.kidsforthefuture.com/wp-content/uploads/2013/12/Early-Math-Tip-Sheet.Spatial.pdf>

This is a PDF of a poster focusing on spatial awareness from children aged 0-5 years

