



## Having a Maths-rich household

### For children ages 5-9

There's maths in all the everyday activities you already do together as a family, however sometimes children need help in seeing that it is there. Having a maths-rich household involves families being happy to explore maths together, have fun and enjoy using it. There are plenty of opportunities in family life to play with numbers, and help your child feel positive about maths. Always point out that you are doing maths - this helps children understand that maths isn't scary or an activity isolated from real life.

The suggestions listed in the following pages are merely some pointers as to how you might bring the vocabulary of maths into family life. They are not exhaustive and you can adapt each suggestion to meet the context you find yourself in. Essentially the principle is, if maths occurs in family life, share it, have fun with it and explore it.

Please read this alongside the year group maths expectations sent out before Christmas, as there are a few things more damaging to a child's maths confidence than pitching maths too far beyond their ability level. This should also support the school's Home Learning framework.

In the weeks to come we will also be sending out our new school calculations policy, which will provide you with clear guidance on the range of methods used, explain how we build from concrete experience, through visual models to abstract techniques. Some of these you may wish to employ within your exploration of maths at home.

This guide is split into 5 sections, each relating to one area of family life, again this is not an exhaustive list and there will be maths to be found in many other real life contexts.

# Around the house

## Tips & ideas

- **Talk about time.** For example, get them to work out what time you need to leave the house to get to school on time.
- **Cooking.** Measure ingredients and set the timer together. Get them to work out how much more food will you need if extra people are coming for dinner.
- **Talk about the shape and size of objects.** Look online for interesting facts, like tallest and shortest people, or biggest and smallest buildings etc.
- **When you are sharing food** like pizza or cake, ask your child to help you share it equally between the number of people eating.
- **Solve maths problems at home.** For example, ask them how many apples to buy at the shop and why, or how long will it take you to get to Gran's house if you go to the library on the way.
- **Collect information** and create a tally chart, for example to find out the family's favourite animal or fruit etc.
- **Make patterns** with objects, colouring pencils, paint or Play-Doh, and build structures with Lego or boxes. Patterns of counting could also be discussed if your child is learning to read music.

## What skills are we practising?

- Measuring
- Addition
- Subtraction
- Multiplication
- Division
- Fractions
- Estimation
- Handling data
- Comparison
- Pattern
- Order
- Problem solving and reasoning
- Shape

# Maths and money

As your child starts to understand a bit more about money, you can start using it for more maths conversations and activities. Don't forget to talk to your child about where money comes from.

## Tips & ideas

- **Estimate.** At the shops ask your child to estimate how much 3 or 4 items will cost together.
- **Give them small amounts of pocket money.** For example, give them 50p a week and ask them what they think they can buy with it or, if they want to save for something bigger, how long will it take to reach their goal.
- **Talk about the items you buy.** Ask them which are more expensive, which are cheaper, which are heavier, and which are lighter etc.
- **Explore quantities** by asking them to think about how many different ways they can make £1. For example how many 10p coins do you need to make £1.
- **When you buy something,** get your child to hand you the correct money and check the change with them afterwards.

## What skills are we practising?

- Identifying shapes
- Adding
- Subtracting
- Multiplying
- Dividing
- Numbers between whole numbers
- Place value
- Counting
- Estimating
- Comparing
- Checking
- Problem solving and reasoning

# Games

Have fun with maths! Games help children develop a positive attitude towards maths.

Whenever your child uses maths in play, explain that they're using maths. This will help them realise how much we all use maths every day.

## Tips & ideas

- **Play with cards.** Take 2 cards and add the numbers together, the player with the highest number wins. Try it with subtraction, multiplication, and division too.
- **Play 'Think of a number'.** Think of a number between 0-100 and get them have to guess what it is They can ask questions like 'is it less than 20?'
- **Play with blocks like Lego or Jenga.** Talk about the size, colour, shape, weight and texture of them, and create patterns and structures. Ask them to guess how many blocks they could pile up without them falling down and then build them up to see if they were correct.
- **Play with containers.** For example how many sweets are in the jar? Ask your child to guess and then count to see how close they were.
- **Pick an object** and give your child clues to find it by using directional language, such as up, down, over, under, between, through, beside, behind, in front of, and on top of. Make the game more challenging by giving more complicated directions e.g. 'It's on top of the table and to the left of the magazine'.
- **Play board games** like Connect 4, Jenga, Snakes and Ladders, PLYT or Dominos.
- **Ask your child to design their own board game and dice.** Play the game together and talk about the mathematical thinking, reasoning, or problem solving the game used.

## What skills are we practising?

- Counting
- Number relationships
- Adding and subtracting
- Multiplication and division
- Estimating
- Shape and measure
- Sequences and patterns
- Problem solving and reasoning

# Out and about

Practise using maths with your child outside your home!

Exploring your local community and playing sports provides loads of opportunities to start thinking about numbers and keeping active.

## Tips & ideas

- **Go on a shape hunt.** How many circles, squares, rectangles or triangles can your child find? Are they 2D or 3D? Try getting them to look for patterns and symmetry.
- **Play outside games that use counting.** Hopscotch, hide and seek, What's the Time Mr Wolf, skipping or hula hooping are a great place to start. Practise times tables by counting in multiples e.g. 4, 8, 12, 16, or 7, 14, 21, 28.
- **Dance.** Ask your child to create dance routines along to their favourite songs.
- **Sport.** Sports are the perfect chance to think about speed, scores, time and angles. Get competitive; try out different angles to score from, ask them how many star jumps can they do in a minute.
- **Ask them to give you directions** to local landmarks or important places. Get to work out how long each stage of the journey takes.
- **Use sticks for shape challenges.** Ask them how many triangles can they make with 9 sticks etc.
- **Explore the local area.** Ask them to guess how many buildings do they think are on the street, how far is it to the nearest river or how many dogs and cats live in your town. Ask for the reasons behind their answers.

## What skills are we practising?

- Pattern
- Shape
- Counting
- Adding and subtracting
- Time
- Speed
- Angles
- Measurement
- Sequences and patterns
- Multiplication and division
- Estimation
- Problem solving and reasoning

# Books and TV

Books, TV and radio are a great way to keep children excited about numbers. Ask them about the maths in any story they read or TV programme they watch.

## Books

For younger children (6-7):

1. The Shopping Basket by John Burningham.
2. 365 Penguins by Jean-Luc Fromental.
3. We're Going on a Bear Hunt by Michael Rosen.
4. The Girl Who Never Made Mistakes by Gary Rubinstein - great for teaching kids that it's OK to make mistakes and that you can learn from them.

For older children (8-9):

1. The Dangerous Book for Boys by Conn and Hal Iggulden.
2. The Daring Book for Girls by Andrew J Buchanan and Miriam Peskowitz - Great activities that use maths like finding north, writing codes, making kites etc.
3. Matilda by Roald Dahl.
4. Danny the Champion of the World by Roald Dahl - how many pheasants did they catch?

## Radio

[BBC Megamaths](#) is a radio show about a team of detectives on a maths mission to solve mental maths problems.

## TV and film

Whatever they're watching, there's opportunities to talk about maths. Ask them questions, such as how fast are the cars going in Top Gear, what scores are being given on Strictly Come Dancing or how many years ago did the people in historical programs live?