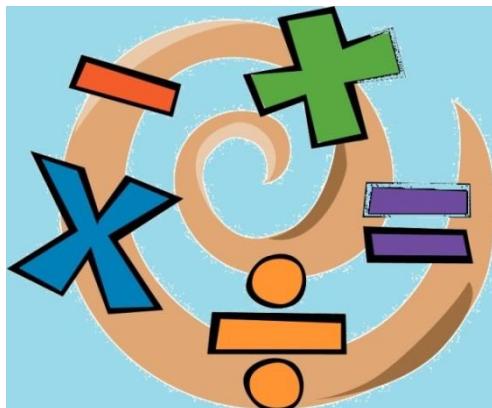


Mathematics Activities for Out of Class





- ✓ **Be positive about maths!** Never say things like 'I'm not good at maths' or 'I hated maths at school'... your child might start to think like that themselves.

- ✓ **Point out the maths in everyday life.** Include your child in activities involving maths such as: shopping, cooking and travelling.

- ✓ **Praise your child for every effort** - this shows them that by working hard they can always improve.

MATHS - OUT AND ABOUT

When you are out and about, think of all of the possibilities to include Maths through discussion and activities.

You could:

- Add up shopping items and make a shopping list whilst out shopping. Older children could work out how much change they should be given - which coins (5p, 10p, £5 etc) and what combinations?
- Weigh fruit and vegetables in the supermarket.
- Read labels on bottles, packets in order to discuss capacity, weight, shape and colour.
- Calculate discounts (20% reduction, 50 % sale price).
- Use the till receipt to check the total cost of shopping items.
- Calculate the cost of the family going to the cinema, swimming etc.
- Use sandwiches to show fractions ($\frac{1}{2}$, $\frac{1}{4}$.).
- Look at different patterns and describe them.
- Whilst driving in a car you could see how many coloured cars you can spot (*How many red cars?* etc).
- Use car number plates to add the digits and find out the smallest/ biggest total.
- Look at house numbers along the street (discuss big/ small numbers, even/ odd numbers).

- Count how many pages in a book and discuss the digits (which ones show units, tens, hundreds).
- Looking at a newspaper or watching the weather forecast, read the temperatures in different parts of the world (discuss positive and negative numbers).
- Work out the time that you spent out and about.
- Discuss the different times of the day.
- Look at a calendar and discuss days, weeks, and months.
- Read the time on both, analogue and digital clocks.
- Play games (they can throw the ball into the air and count the number of times they catch it without dropping it). *Who can jump the most number of times without having to stop for a break?*
- Look at road signs to discuss distances.
- Discuss how long it takes to make dinner etc, how long to eat it, how long to get ready for bed, what time they have to get up in the morning to be ready and at school on time?
- Look at a map and decide on quickest routes, can they find different landmarks on a map?
- Look at the local shops and make a table/graph showing the different types of shops that you have in your area.
- Sort out groceries, flowers, pegs etc by colour, size.
- Count up to 10, 20 and 100 - backwards and forwards.

MATHS IN THE KITCHEN

When preparing dinner at home, making cakes, or drinks, try to involve your children in the process of measuring.

Put a collection of measuring utensils on the table and encourage your child to line up the measuring cups and spoons from smallest to largest or vice versa. Also, you can extend this activity to practise ordinal numbers by asking your child to place an item in the first / second or third cup, using as many ordinal numbers as the number of cups used.

MEASURING/ESTIMATION MATHS GAMES

Show your child all the different types of measuring implements in the kitchen, from the smallest measuring spoon to the largest measuring cup. Explain the markings on the tools and how they are used to make sure the ratio of ingredients is correct when you cook.

Ask your child to estimate how the different measurements relate to each other. The best way to make this concrete is to give them water and flour to measure and transfer from tool to tool. Then, if you ask how many tablespoons are in a cup they can try it out to confirm their estimation.

Older children can explain the relationship between the measurements and discuss how this comes in handy when you want to make half of the recipe or wish to double one.

Sample questions: *How many 1/4 cups are there in a 1/2 cup? If a recipe calls for 1 cup on an ingredient, but you only want to make half the recipe, how much of that ingredient should you use?*

MATHS IN FOOD

- Weigh a pumpkin on bathroom scales. Work out how many pumpkins weigh the same as you.
- Measure ingredients for a recipe using standard units (ml, cl, litres) and non-standard units (spoons, cups).
- Sort out a collection of groceries weighing 1kg.
- Make a chart that converts imperial measures of weight to metric measures.
- Estimate and then find out how many potatoes you can fit into a saucepan of water before it overflows.
- Set up a market stall with real or plastic vegetables.
- Taste different fruits or vegetables. Do a survey of people's favourite and least favourite. Draw a chart of your findings.
- Investigate the melting point of chocolate; research the maths involved in finding out what it is. Learn to read thermometer scales then start the experiment.
- Research the food we eat and where it comes from. Create a chart of your findings.
- Set up role play areas; a restaurant, a pizzeria, a supermarket or an internet food delivery service.
- Design a nutritious and balanced menu for a main meal. Then, design an unhealthy, unbalanced meal. What is the difference in nutrition, in cost, in preparation, in preference between the two meals?

- Look at their favourite breakfast cereal. How is it packaged? What volume of cereal is contained in the packet? Can they design and make a packet that holds the same amount but takes up less space.
- Survey the number of pips in apples or oranges. Include the results in a chart and find the mode, median and mean.
- Make banana smoothies for 2 people. What ingredients will you need for 4 people, 5, 10, 30?
- Weigh and sort different dried fruits, nuts and cereals to design a breakfast muesli dish. Find the proportions of each ingredient.
- Grow some cress or beans.
- Make bread.
- Make butter from shaking cream in a screw top jar with a little salt.
- Prepare 3 squash drinks with different amounts of squash/water. Do a tasting survey. What type does each person like best and why?
- Write a shopping list for a party: 1 birthday cake, 2 packets of crisps, 3 tubs of ice cream, 4 loaves of bread etc. Give children a price list so they can calculate the final cost.

MATHS AT STORY TIME

There are many stories which focus on key mathematical skills and vocabulary. Children enjoy stories as they provide a fun and relaxed atmosphere for learning.

The list below contains popular books, which you should be able to find at a local library that will help your child with different areas of maths.

Egg Drop by Mini Grey - Brilliant for discussing 2D shapes, symmetrical shapes, estimating, counting and looking at repeated patterns.

Goldilocks and the Three Bears by Heather Amery and Stephen Cartwright - Excellent for practising measuring and weighing, positional language, comparison and number work.

Handa's Surprise by Eileen Brown - Great for talking about ordinal numbers (first, second, third etc) and also introduces subtraction to your child.

Katy Morag and the Birthdays by Mairi Hedderwick - A useful book as a starting point for learning the months of the year and talking about calendars.

Mr Wolf's Pancakes by Jan Fearnley - A good book to begin talking about addition, subtraction and division. Children could practise weighing out ingredients to make something in the kitchen and also using money to buy items in a shop.

One Is a Snail, Ten Is a Crab by April Pulley Sayre - This book concentrates on counting feet and will help children to count to 100.

Peace at Last by Jill Murphy - This book could be used to explore time. Encourage children to use the language: day morning, afternoon, evening, night, midnight, now, soon, early, late, clock etc. You could talk about different ways of telling the time and how you know when it is day or night.

The Borrowers by Mary Norton – Draw pictures of the characters and try measuring and making a miniature home for them to live in.

The Great Pet Sale by Mick Inkpen -This book offers lots of opportunities to work with money.

The Tower to the Sun by Colin Thompson – Good for talking about shapes, colours, patterns, numbers and problem solving.

The Very Hungry Caterpillar by Eric Carle – Whilst reading this book you and your child can practise counting and working out one more or one less. You could talk to your child about odd and even numbers and also the days of the week.

What's The Time, Mr Wolf? by Colin Hawkins - A brilliant story to begin focussing on using a clock and reading the time.

365 Penguins by Jean-Luc Fromental and Joelle Jolivet - A popular book which helps children to count to 365, do some calendar work and talk about shapes and patterns.

Maths for Mums and Dads by Rob Easterway and Mike Askew - One for you! This book is very useful for those of you who would like to know a little more about the maths that children do in school. Also, this book contains lots of ideas for how you can share maths together at home.

MATHS IN THE GARDEN

There are lots of opportunities to talk about maths and involve your children in fun activities when you are out in the garden:

- Look for shapes in the garden and describe them - What can you tell me about this shape? How do you know this shape is not a square? I'm thinking of a shape. It has 3 corners. Can you see the shape I might be thinking of?
- Measuring in the garden. Estimate and measure how tall plants are using non-standard units (feet or hands) or standard units (centimetres and metres). Plant some seeds measure and record their growth over a period of time.
- Create a tally of the different types of plants you can find in the garden.
- Have a Scavenger Hunt in the garden - Can you find 10 leaves? 5 snails?
- Angle Treasure Hunt, can you find examples of obtuse, acute, reflex, right angles... in the garden?
- Bird watching- make a tally chart of the birds you see in the garden each day.
- Look for patterns in nature, such as Fibonacci numbers and symmetry in flowers, leaves and insects.
- Record the temperature in the garden by keeping a temperature diary and analysing how the temperature changes at different times of the day and different times of the year.
- How many leaves does a clover have? Search for a 4-leaf clover. How many lucky clovers can you expect to find in a day?
- Write numerals using chalk, paintbrush and water, in the sand. Make numbers out of twigs, leaves and petals.

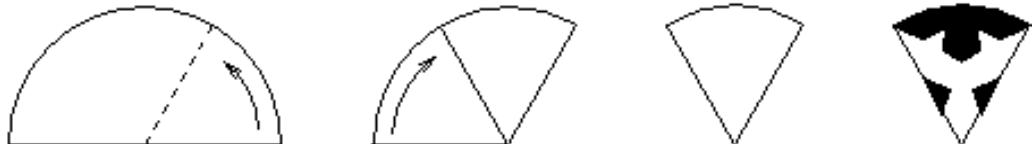
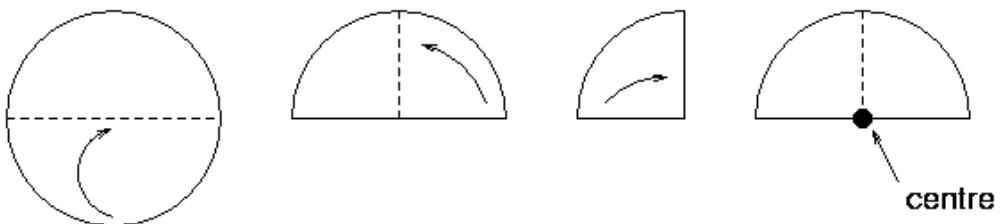
- Investigate patterns - create a pattern using leaves, flowers and stones. Can your child continue the pattern? Can they describe the pattern?
- When talking to your child about the garden try to use words that describe position and direction, e.g. above, below, next to. Give directions to your child about how to move around the garden, using words such as left, right, forwards and backwards.

MAKING AND DOING MATHS

Here are some examples of what you could try together at home.

- ❖ Use magnetic numbers to make calculations on the fridge door.
- ❖ Challenge your child to make a box using Lego which holds 20 pencils.
- ❖ Fold towels to show $\frac{1}{2}$ and $\frac{1}{4}$.
- ❖ Make clothes for toys to scale.
- ❖ Wrap parcels – What amount of paper, string do we need?
- ❖ Cut some vegetables open and draw what they can see. Using paint, make some vegetable prints and describe the shapes they can see.
- ❖ Try some Origami. Make gift boxes using paper to hold some biscuits you have baked together.
- ❖ Sing nursery rhymes and songs.

- ❖ Clap in different sequences.
- ❖ Make a Scrap Book of numbers.
- ❖ Use salt dough or plasticine to make numbers.
- ❖ Play with a number line or number square
- ❖ Make some collages using different shapes - you could make a collage using 2D shapes such as triangles, rectangles and squares or make a collage of circles, ovals and curves on round paper.
- ❖ Make a paper snowflake by drawing around a circle and folding it in half and then half again. Open it back out to half a circle. Now fold the half circle into three parts. Cut away pieces from the folded sides and from the curved edge as well. Open it out - and there's a snowflake! Maybe you could add some glitter to make it sparkle.



RESOURCES

It would be useful to have some mathematical resources to help you child at home:

- board games (*Bingo, Chess, Connect 4, Dominoes, Hop Scotch, Ludo, Monopoly, Pizza Fraction Fun, Rubik Cube, Rummy, Snakes and Ladders, Sum Swamp*)
- dice
- number line
- number square
- pack of cards
- rulers

KEY MATHEMATICAL VOCABULARY

Addition: altogether, increase, make, more than, plus, sum, total.

Subtraction: decrease, difference between, less/ fewer than, minus, reduce, take away.

Multiplication: groups of, lots of, times, multiplied by, product of, repeated addition.

Division: divided by, divided equally, divisible by, equal groups/lots of, share by, share equally, split equally into.

Equal Sign: balance, equals, same as.

MATHS WEBSITES

The following websites contain a variety of online games that your child can play at home, to practise and consolidate the skills taught in school.

<http://www.bbc.co.uk/bitesize/ks1/mathss/>

<http://www.bbc.co.uk/education>

<http://www.bbc.co.uk/schools/laac/menu.shtml>

<http://www.bbc.co.uk/schools/ks2bitesize/mathss/>

<http://www.bbc.co.uk/schools/numbertime/>

<http://www.bbc.co.uk/schools/starship/mathss/index.shtml>

<http://www.crickweb.co.uk/ks1numeracy.html>

<http://www.coolmath4kids.com/>

<http://www.ictgames.com/resources.html>

<http://www.mathszone.co.uk/>

<http://nrich.maths.org/frontpage>

<http://www.primarygames.com/>

<http://www.sheppardsoftware.com/math.htm>

<http://www.softschools.com/math/>

<http://www.topmarks.co.uk/>

<http://www.transum.org/software/>

<http://www.woodlands-junior.kent.sch.uk/mathss/>