



St. David's School
Woodcote Valley Road
Purley
Surrey
CR8 3AL

Telephone 020 8660 0723
Fax 020 8645 0426
E-mail office@stdavidsschool.co.uk

www.stdavidsschool.co.uk



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Maths at Home Information Booklet



INTRODUCTION

It is important that parents and their children talk about and use maths together, creating an environment where it is natural to share mathematical ideas, use mathematical vocabulary, and to be interested in mathematical topics. The more children are exposed to maths in everyday situations, the greater their confidence and skills become.



There are many ways in which parents can be involved in their children's mathematical learning. Maths is not just about getting the right answers. It is about thinking things through and finding ways of solving problems. It does not matter if your child gets a wrong answer as long as they are able to explain their method of reasoning.

A good way to help children learn is to give praise for what has been done well or attempted, without focusing too much on weaker points. Sometimes parents may decide that the children are attempting something that is too hard. Parents can still praise the children, then drop the subject until it is thought that they are ready to have another go.

The following pages give some suggestions for fun mathematical activities to do with children at home.

'Maths is not just about getting the right answers.'

EARLY YEARS

In the Early Years the focus in school is on developing mathematical understanding and providing the foundation for numeracy. Your child will acquire skills through practical activities, using and understanding language in the development of simple mathematical ideas.

The children are encouraged to use mathematical language such as circle, in front of, bigger than and more than, to describe shape, position, size and quantity. Through number rhymes, songs and counting games the children become familiar with and recognise numbers to 10, eventually solving addition and subtraction problems. There are many ways you can help young children with mathematics. Adults use lots of maths at home, in everyday activities such as cooking, shopping and DIY. You could involve your child in your everyday mathematical activities, you could devote a few minutes to setting up an activity that is rich in mathematical potential, or you could play a mathematical game with him or her.



Everyday activities that involve maths

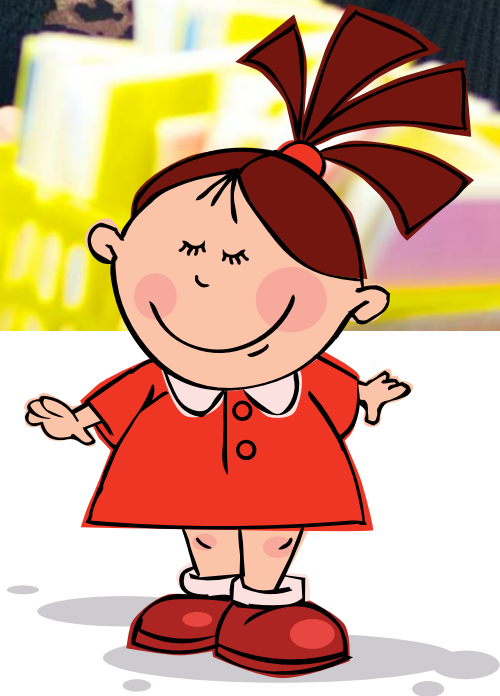
Cooking

- Ask your child to count the carrots, potatoes etc for you
- Help your child to set the timer on the cooker
- Let your child roll out and play with some pastry
- Ask what different shapes can be made, whether there is the same amount of dough when it's in a ball and when it's rolled out

- Talk about how heavy the sugar is
- Guess how many pasta shells there are in a spoonful, then check by counting
- Lay the table

Sewing

- Count the buttons together
- Sort buttons – shapes, number of holes
- Check together whether the skirt you are making is long enough
- Talk about how your thread is getting too short – compare longer/shorter



Shopping

- Let your child count out 6 apples, oranges etc.
- Ask your child to find a 20p, 10p, or 50p piece to pay the shopkeeper
- Help your child to look for a six-pack of yoghurt
- Play shops at home
- Look at car registration numbers

General activities

- Count the stairs as you go up

- Count backwards as you come down
- Count up/down from 10 for doing simple tasks as 'can you tidy up your clothes before I count up to 10'



Activities that you can set up

Paper-folding and cutting

Any paper will do – for instance, you can remove the staples from an old magazine and use that. Use phrases such as ‘can you fold this in half?’

A box of treasures

Find a special little box or tin:

- Can your child find lots of different tiny things to put in it?
- Does your child think they are all different?
- Can your child count up the total?

Dolls, bears, cuddly toys and toy people

There is a lot of mathematics in this sort of play

- Suggest a dolls’ tea party. Give each doll five raisins



- Ask your child how many are needed altogether
- Does your child think there is enough water in the jug to fill each of the cups

Help your child to make a bed for a favourite toy from a cardboard box. Ask your child these questions:

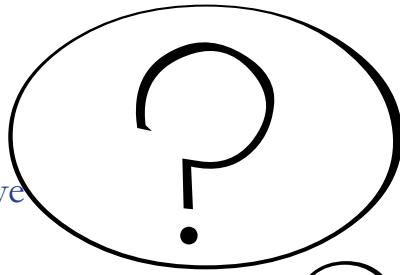
- Is it long enough and wide enough?
- Can the bed be covered with wrapping paper?



- How can you make sure?
- How can your child make sure you cut the fabric the right size for the blanket?

Help your child to:

- Make some clothes for teddy
- What shapes need to be cut out?
- Will they be big enough when they are sewn up?
- Make a set of number cards from 0 – 10
- Ask your child to put the cards in order
- When they are in order, tell your child to shut her eyes. Turn over one of the cards. Can he/she identify which number it is?
- Try the same thing but with the numbers jumbled up
- Jumble up the cards and hide one. Can your child find which number is missing?
- Ask your child to choose a number card, then go and collect that many objects. You could have a rule, such as all the objects must be red, or you must be able to wear them
- Place all the cards number side up. Get your child to put the right numbers of button on each card.



Games to play that involve maths

Board games and card games

There are many games on the market that appeal to young children and help them learn some important ideas about mathematics. They can teach children about:

- Direction – ‘person on the left has the next go’ or ‘pass the dice round clockwise’
- Following a sequence – ‘pick a card, then put one down’
- Counting – ‘how many spots are there on the dice?’
- The number sequence – ‘you are on 23 so you go to 24 next’
- Pairs – ‘those two are the same’
- Sets – ‘what card do you need to make your set?’

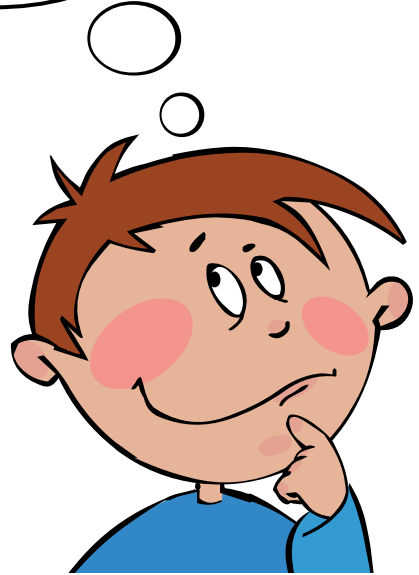
Look out for:

Scaredy Cat, Ladybird, Beetle, Incey Wincey Spider, Happy Families, Donkey, Snakes and Ladders, Ludo and many others.

Building

Construction sets and building blocks are also very important learning toys. Children can learn about all kinds of things, including

- How shapes fit together
- What will and won’t balance



- How nuts and bolts, and other fixings, work
- How the same shape comes in different sizes

Look out for:

Lego, Duplo, Brio, Meccano, Sticklebricks, and sacks or boxes of wooden bricks.

Pictures and patterns

Children can experiment with pattern making, or create pictures, and think about:

- Which shapes fit together and which do not?
- Different kinds of pattern that can be made





- To work out the capacity – ‘can you measure 250mls of milk?’
- To count backwards with the microwave oven
- Use the language heavier than/lighter than when you work with your child

Tidying up

Tidying up involves sorting (important in mathematics as well as other areas), and thinking about shapes and space. Ask questions like:

- ‘What kind of things are these? Where do they belong?’
- How can we fit them all in properly? What is the best way to stack them?’
- ‘How many boxes will we need to fit in 25

blocks if each box holds 5?’

- ‘Can you count in twos? For shoes, gloves, socks etc when tidying

Money and shopping

Using money and helping with the shopping are good ways for your child to get familiar with numbers and measures. Money is particularly useful for helping children develop quick ways of counting.

Ask your child:

- ‘How many pound coins have you saved for the holiday? How many more do you need to make £10?’
- ‘Have I got enough change to make £5? I need to pay the milkman’

- ‘Let’s write a shopping list. How many buns do we need? How much milk?’
- ‘Which brand of cereal is cheapest?’
- ‘Can you go and get a kilogram pack of granulated sugar?’
- ‘Can you choose three coins to make 10p, five coins to make 10p etc?’
- ‘If one packet of crisps costs 30p, how much will 4 cost?’

Number based activities

Working with your child:

- Practise number bonds
- Find two numbers that make 10 or any other number
- Find three numbers that make 10 or any other number
- Find three numbers, using subtraction that make 8, eg $20 - 10 - 2 = 8$
- Use the language one more, one less
- Count shoes/socks in pairs 2, 4, 6, 8
- Count fingers/toes in 5’s
- Make up a story and take turns, eg 4 dragons were out one day when one fell over. He ran home crying. How many were left?



Count forwards and backwards to 100

- Count in 2’s, 3’s, 10’s etc to a set number

Out and about

Help your child to:

- Add up the digits on car registration numbers (good on a long car journey)



- Say whether a car registration number is odd or even
- Choose two cars. Which registration number is the highest?
- Add up the two smallest numbers on a car registration number and see if they add up to more or less than the biggest number



Games and toys with mathematical potential

Many of the things 6 – 7 year olds do at home for fun are partly mathematical – for example, building models and playing board games. Below are some ideas about getting the most out of these activities.

Snakes and Ladders and other games

Many of these games involve either dealing with numbers or with shapes and space. The number may be at a quite simple level – for example, counting spots on a dice, or sharing out cards. Often you can add to the enjoyment of these games, and their mathematical value, by making up variations. For instance, you could use two dice instead of one, and try adding the numbers or go forwards for one dice, and back for the other, or toss both dice and choose one of the numbers to move for.

Look out for:

Ludo, Connect 4, Draughts, Chinese Checkers, 3D Noughts and Crosses, Pelmonism, Kims' Game, any game with a dice, Uno, Snap, Dominoes. Chess develops thinking skills.

Modelling

Provide children with a range of materials and they will find plenty of ways of using it. Whatever they do will give them experience of shape and space.

You could provide:

- Houses, boats, or aeroplanes from kits, or cut outs in book
- Off-cuts of wood or card for your child to create their own dolls' house, magic island, car ...
- Plain or fancy paper to do origami – you can get a book on this from any good book or toy shop
- Fimo to make jewellery, dolls' house furnishings, cars







- Waste products e.g. boxes, tubes etc for constructing things and discussing 3D shapes (how many corners, faces, etc)

Look out for:

Modelling clay, balsa wood, plasticine, Lego Technic, dolls' house kits, boats, cars and railway tracks.

Jigsaws

Jigsaws give children useful experience in fitting shapes together. They also encourage them to think about the order in which they do things ('Is it best to do the edges first?') This is an important skill in solving mathematical as well as everyday problems. Good toyshops stock jigsaws of increasing difficulty to suit children of all ages, and some shops sell blank jigsaws for you to draw or write on yourself.

If an old jigsaw is too easy for your child, try turning it over so that the picture is face down. Is it still too easy?

KEY STAGE 2

Apart from the ideas mentioned on earlier pages, older children should be encouraged to take charge of their own affairs. If they can begin to take responsibility for things like planning outings, and organising their own bedroom, they will need to use maths in all sorts of ways. This will provide opportunities to practise maths for real purposes – just as they will need to do in adult life.

Everyday activities that involve mathematics

Hobbies

There are all sorts of ways in which maths comes into hobbies

- Collecting things
- Organising collections
- Saving up to buy an item
- Sorting recent purchases
- Belonging to a fan club
- Researching facts and figures
- Saving money for purchases
- Keeping track of performances, eg league tables, record sales
- Watching videos and TV
- Planning viewing times

- Estimating the amount of time left on a tape
- Estimating the cost of hiring or buying a tape

Organising the bedroom

Involving your child in the process of redecorating or buying new furniture for the bedroom involves a lot of mathematical activities. With your child:

- Draw plans for the layout of the room
- Plan how to arrange posters etc on the wall
- Make a noticeboard – measuring, calculating sizes and costs
- Work out how clothes will be organised
- Sort and think about filing systems

Outside activities

When planning an outside activity or trip, let your child become involved in the arrangements. With your child:

- Use a list of data such as the phone directory to get telephone numbers, facts and figures
- Use a calendar to make note of dates and time
- Plan time needed for a trip. How long will the journey take?
- How long will you be there?
- When will you come home?

- How much money will be needed for the trip – travel costs, refreshments, admission charges etc?

Numeracy checklist

The children must know:

- Their tables 2 – 12 times fluently. It is important that they know them at speed and in random order
- The doubles and halves of whole numbers up to 100
- How to count backwards and forwards from any two or three digit number in tens or hundreds
- How to use mental strategies for solving problems

Problem solving

Many fun and engaging activities can be found on www.nrich.maths.org

