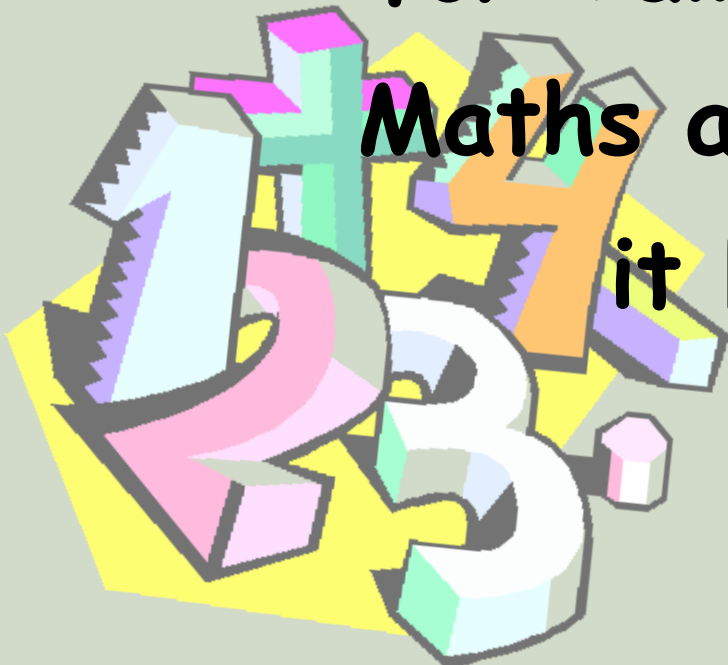


Mastering **MATHS**



A Book of Ideas
for Talking about
Maths and Making
it FUN!



How to use this Booklet

This booklet is designed to be used by adults to develop children's maths skills.

Maths isn't just about learning new things, it's about explaining why things are, why things are not, why they have happened, and what things mean. It is about making links between what they know and what they don't...yet! It's about finding Maths around us;

- Spotting symmetry, finding numbers, and using Mathematical words
- Recognising repeating patterns and explaining them
- 'playing' with numbers,

These following prompts will help to foster a love of Maths at home.

Don't use these simply as a list, but just as a starting point for developing maths as a daily subject to talk about at



Make sure to...

Make maths fun, relevant and part of daily life to strengthen your child's accuracy and interest in maths.

Make the mathematician feel important!



Feel excited and show your joy expressively about Maths - regardless of your experience of it earlier in your life!

Look and listen actively to what your child is saying!

Help them feel more involved and engage with the Mathematician.



Talk maths daily - 10 minutes is enough!

7

Young children love being outside

Being outside gives them a wider variety of activities to do:
(including bigger and more complex maths)

These activities accomplish maths *and* get the child to move !

- Jump in different directions
- Jump to the left, right, forward, backwards
- Sequencing - do 3 jumps forwards, 2 backwards

Recognise shapes

The shape of windows, shape of wheels, shapes in shops/town etc. Can you spot 2D shapes and 3D shapes? Do they go in a pattern? What would the next shape be?

Money

- Use everyday language; pounds, pence, change
- Encourage children to choose the coins needed to buy an item
- Try working out the difference between the change and the money you paid - we prefer the method of 'counting on' (eg, cost of item 79p; to find change from £2, count on 21p to get to £1 and a further £1 to get to £2, giving a total change of £1.21)



And Indoors...

Pegs are amazing math tools

Order pegs according to size, write numbers on them up to 20 - order them, group them according to colour, make a repeating pattern - blue/red/wood/blue/red/wood etc.

Children can peg socks on the line in pairs and practise counting in twos.

Sing nursery rhymes

That include maths language (not just numbers) eg, Hickory Dickory Dock, The mouse ran up the clock, Ten Little Monkeys Swinging in the Tree, Hey Diddle Diddle, The cow jumped over the moon and of course, '1 2 3 4 5 once I caught a fish alive'.

Use fridge magnets

Order them according to size, recognise different shapes, different colours.

Use fridge magnet numbers; 1 - 20

Order them, reverse order, group them, trace them, write them, use language such as 1 more and 1 less. Order using odd or even numbers only. Children can pick three and order them from smallest to greatest or greatest to smallest.



The Early Years as a Maths Learner

For the first years of primary school, the activities should be simplistic and interesting, to engage and involve children more:

- ♦ Recognise numbers up to 100
- ♦ Play games such as snakes and ladders, counting buttons.
- ♦ Choose dominoes, count spots on one side - compare/ find the difference to the other side, find the total etc.
- ♦ Count as you go upstairs/downstairs count to 100, count backwards, try starting from different numbers
- ♦ Recognise position... Go to the 4th stair...
- ♦ Play ordering games: order buttons/ pegs/ shoes from smallest to biggest, and vice versa
- ♦ From a pack of cards (take out the aces and picture cards) choose any ten numbered cards and put them in order

Play simple pattern-related games such as:

- ♦ With a collection of tiddlywinks, make patterns such as 2 red, 1 blue, 2 red, 1 blue...



Key Stage 1

By the age of 7, your child should know the 2, 5, & 10 times tables OFF BY HEART

You may stretch and challenge your child to learn the 3 and 4 times tables too, but they will benefit from lots of practice of the 2, 5 and 10s so they can recall and use facts without thinking (or counting on fingers).

Make Lego towers in groups of 2s, 5s and 10s and practise counting.

From a pack of cards (without the tens, Jacks, the Queens or the Kings) play a game of 'pairs', where you try to turn over two cards that add up to 10 and 20.

Play Ping Pong with number pairs for 10; you say a number and your child can say its partner, e.g. I say 6 and you say 4.

If they know this, make the link with number pairs for 20, I say 16 and you say 4.

Play with wooden blocks building towers and other structures. Is it possible to build two towers of the same height, whatever number of blocks you begin with?



(Key Stage 1) - Continued

Play a game of ordering everyday objects according to their weight, and then weigh them. Follow a simple recipe together.

When someone opens a door, discuss the angle the door has turned through, try opening it at different angles.

Draw your child's attention to the clock, and aid in their understanding of time passing. Discuss what you did yesterday or last week. What will you do later, tomorrow or next week? Do you complete activities often, once a week sometimes?

Practice telling the time to the hour, half past and the quarter.

Reading the time is something that children who practise at home always do better at in school.

Talk about what whole numbers mean when they appear in everyday situations, such as car number plates, road signs, on a clock face, a flat or house number etc.

Play a game of 'find the number' somewhere in the house or on the way to school:

- ♦ Find a bigger number...
- ♦ Find a smaller number...
- ♦ Find a 2 digit number...
- ♦ What is it made of, eg, 23 is $20 + 3$...

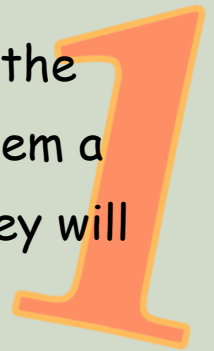
465 is $400 + 60 + 5$



Age 8 - 9

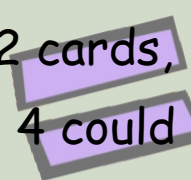
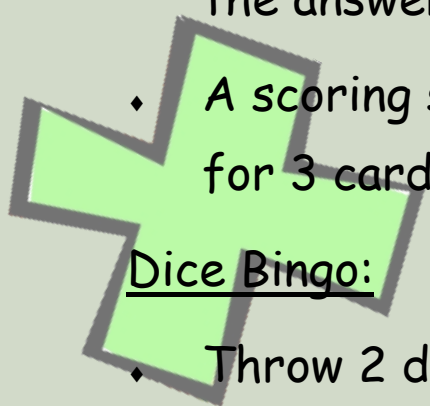
By the age of 9, your child should fluently know the times tables completely up to 12×12

Just chant and practise them using recall around the house. Every time you walk past your child, ask them a quick/out of the blue times table question and they will learn them in no time!



Make a calculation:

- From a pack of cards (without the tens, the Jacks, the Queens, and the kings) play a game where each player is dealt four cards and everyone has 1 minute to make up a calculation using the cards given, so that the answer is the value of the next card turned over
- A scoring system such as 1 point for 2 cards, 2 points for 3 cards, and 3 points for using all 4 could be used



Dice Bingo:

- Throw 2 dice and multiply the numbers
- Cross off the numbers on a 'bingo' card



(Age 8 - 9) - Continued

Talk about numbers that you see on packets or tins of food. This could allow you also to discuss healthy foods and the different varieties, linking maths with positive ideas.

Identify symmetrical objects, for example, look for symmetrical wheel trims on cars.



Find out how many millilitres different containers hold, such as a cup, perhaps estimating answers first then using a measuring jug to check the estimates.

Use a real clock to talk about the times certain events happen at home, for example, getting up in the morning, meal times, when the post arrives. Also, you could talk about times when certain television or radio programmes begin and end, and how long they last for

Help when cooking by measuring ingredients and using the timer to work out end times and start times.



(Age 9 – 11)

Discuss how you may work out the cost of a week's food for the family. Encourage your child to estimate the shopping bill by keeping a running total while you shop.

Try to find examples of numbers that contain fractions or decimals in a daily newspaper, a magazine or on food containers.

Make a list of calculations where the answer is the same. What is the hardest calculation that can be made?

Use pieces of card to make a three dimensional model of a room to a sensible scale.

Work out how much time, on average, different people spend doing different things at home, for example, eating, tidying up, house chores, playing, studying, sleeping etc.



(Age 9 – 11) - Continued

Measure ingredients when cooking

Take opportunities to discuss weights written on packets of food and what they mean in terms of grams and kilograms.

Look at maps of different scales of your local area, for example, a road atlas and a web map, and discuss how far it is from your home, city, town or village to other nearby places.

Make sure your child knows how maths fits together:

Do they see a fraction sign as a division sign?

Do they recognise the word 'of' as multiply ?

So - $1/2$ of 18 is the same as 0.5×18

We can use this fact to work out 50×18

(100 x bigger than 0.5×18)

If we know that we can work out 25×18 (work out 50×18 then half it!)



Being 'Secondary School Ready'

Look at the weather page in a local newspaper or website and find out what all the different sets of numbers/pieces of information mean.

Look for and discuss the use of percentages in articles in a newspaper or on the television, or discuss the percent (%) interest on a savings account.

 Talk about supermarket offers, for example;

"3 for the price of 2", "Buy 1 get 1 free", "two for £2", "Buy one get one half price"

Work out together which is the cheapest or best value.

Calculate percentage sale discounts, find out the price before the sale using percentage multipliers etc.

Adapt recipe amounts for different numbers of people.

Play the 'estimate the size of the shopping bill' game, that is, round every item to the nearest 50p and see how to estimated bill compares the real final cost.

Read timetables and maps when planning a journey.



DO and DON'T

- Let your child teach you about maths.
- At all times "Act as if"

EITHER

- Act as if you're an expert - talk confidently about maths and appear as though you understand

OR

- Act as if you've no idea what your child is on about, and allow them to fully explain their ideas

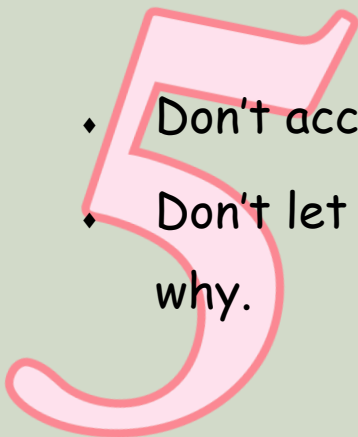
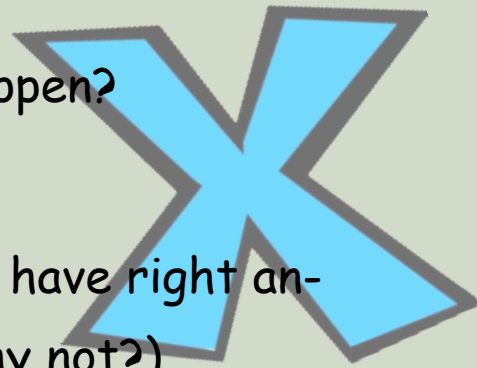
Ask them questions:

- Why does that happen? How does it happen?
- Does it happen all the time? Why?
- What would happen if... (a square didn't have right angles, would it still be a square? Why/why not?)

DON'T

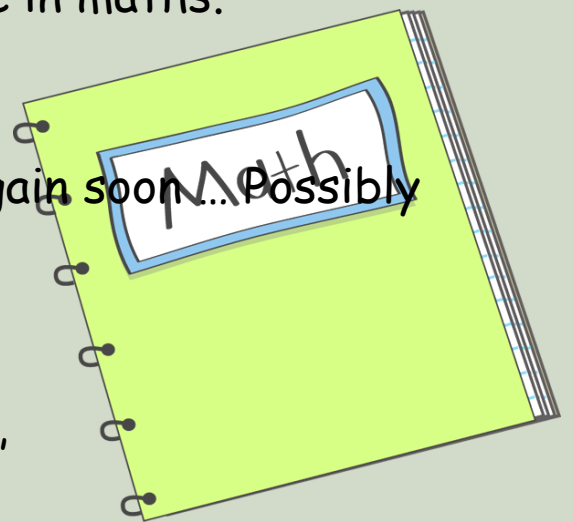
- Don't accept their first answer, dig deeper!
- Don't let them give you an answer without explaining why.

MATHS



At the end of their Maths experience...

- Compliment your child on their maths (especially if they had difficulties)
- Tell your child how much you enjoyed/learnt from them, to encourage them to continue another time and continue to grow in confidence in maths.
- Ask if you can talk about maths again soon... Possibly even at the end of each day
- Enjoy your time 'learning together'
- Occasionally, give them rewards, if improvements are noticeable/more confidence etc, if you deem this appropriate.
- Smile, and keep the atmosphere positive!



Mathematics at Stivichall – Our Vision



Learning at Stivichall is a passport for life. Our aim is to nurture and develop our children to be confident to use and apply their written and mental maths skills, inside and outside the classroom, thus developing their confidence in and enjoyment of the subject.

The help that you could give your child at home using the prompts and ideas in this book, could be invaluable in helping your child grow in confidence from an early age, enjoy the subject and open life opportunities for them in the future.

Thank you for your support.