

Some maths activities for home

To build real understanding, fluency and motivation for maths it is so important that children understand the value of good maths skills and have a chance to explore them playfully. The advice and games listed below do just that. It also takes support from the people they love: parents who give their time to play games, point out the importance of maths and keep a positive attitude will give their children the best chance of success. Saying, "Don't worry I found maths really difficult too" can actually be quite damaging to a child's confidence and reinforce the idea that might find maths hard too. Much better to say, "Let's try and work it out together and if we can't we'll just ask for some help".

Whatever you do, make sure your children enjoy it. This can be tricky: learning involves effort and determination and if it involves being taken away from other activities it can be the source of parent and child confrontation. So make sure that your expectations for homework time are clear and not used as a punishment.

If they struggle to understand, make mistakes, or get bored: keep calm, make it easier, change the subject, tell them a joke, play football, go to the park but please don't get cross or impatient - you could put them off maths for life.

Generally the advice is;

- Talk about and involve children in the situations in which you use maths in everyday life;
- Play games involving numbers and/or logic, such as card games, dominoes, darts, backgammon, draughts, chess etc.;
- Stimulate their thinking at times of boredom, (such as when travelling), with simple maths games/questions (see below);
- Check with the school for any specific help which would be useful. Also check the methods they are teaching for any specific content, such as written methods of calculating.

The following gives a very rough idea of appropriate activities within broad age bands.

For all ages

One very good idea which is appropriate for any level, so the whole car/bus/train/plane can be involved.

Ask the question:

'The answer is 10 (or any number), what's the question? '

Possible responses:

- 8 plus 2
- How many fingers and thumbs have I got?
- 5×2
- $25 - 15$
- 2.5 times 4
- the number before 11
- the square root of 100

This is a brilliant activity because: there's no failure; it stimulates thinking about and stretching knowledge of numbers and mathematical relationships.

Young children, e.g. 3 - 7

Everyday situations:

- Sorting things out and putting things away, e.g. shopping, toys, cutlery, clothes. Talk about which things go together and where things go, giving clear instructions for position such as 'in the cupboard, on the bottom shelf'.
- Matching pairs of socks, shoes, gloves.

- Ordering and sequencing when getting dressed, going to the shops, having a bath etc. Talk about what you do first, what you do next, ... and last of all..
- Comparing objects according to size, weight or capacity, e.g. the longest spoon, the lightest shopping bag, the cup which holds the most, the shortest person, the widest hand, the bottle which is half full.
- Matching and counting when setting the table, preparing food, sharing out food, etc.
- Counting, weighing, measuring capacity and timing when cooking
- Talking about time, referring to the clock at different times throughout the day, (preferably a clock with hands), setting times for certain events, e.g. 'We'll have lunch at 1 o'clock.', timing events, e.g. 'How long will it take to wash the dishes?'
- Handling small amounts of money when shopping, counting small totals.

Play activities/games:

- Talking about directions when walking around or playing with toy vehicles etc. (e.g. forwards, backwards, straight on, turn left/right.)
- Making models with building bricks, Lego, boxes etc. Talk about shape and position, count the number of similar shapes etc.
- Playing games involving matching, recognising numbers and shapes or counting such as snap, pairs (pelmonism), dominoes, board and dice games (e.g. snakes and ladders).
- Counting particular things on journeys, e.g. red cars, fields with cows in, churches etc.
- Sharing books. Sit together when you read to children so that they can follow the pictures. Go back over the story and talk about the order of events, the number, position and shape of things in the pictures etc.

Mental activities:

- Counting in 1s, then 2s or 10s, e.g. as you climb stairs, walk to the local shop etc.
- Simple addition/subtraction calculations, e.g. $5 + 2$, $10 - 7$ for Y1, developing to $15 + 2$, $25 + 2$, $25 + 12$, $20 - 7$, $30 - 7$, $30 - 17$ and beyond in Y2. 'What's $32 + 14$? How did you work it out?'
- The answer's 5, what's the question?

All of the above provide the foundation for mathematical understanding and development.

Older children 8-11

Everyday situations:

- Weighing, measuring capacity and timing when cooking. Converting a recipe for 4 people to one for 6 people.
- Being involved with measuring and calculating how much curtain fabric is needed, how much wood for shelves, how many wall or floor tiles are needed, how much carpet etc.
- Talking about time, e.g. How long is it until lunch time? The journey takes $2\frac{1}{2}$ hours, when will we arrive? We need to be there at 2.00 pm, when do we need to leave home? Many children will still need practice with reading clock times, particularly minutes past and minutes to the hour.
- Handling amounts of money when shopping, working out total costs, working out change, checking receipts. Working out prices of sale items, e.g. 20% off. Managing pocket money and saving for things.
- Working out distances and directions from maps.
- Discussing and comparing house prices from newspaper house sales pages.
- Working out how much petrol will be used on a journey, working out average speed for a journey, costing journeys or holidays etc.

Play activities/games:

- Card games such as sevens, cribbage, pontoon etc.
- Any games involving calculating scores, e.g. scrabble, quoits, darts, bowling.

- Beat the calculator. In pairs, one with a calculator, one without, each works out the answer to a calculation aiming for the one without the calculator to say the answer first.
- Games involving strategic thinking/logic, e.g. draughts, chess, mastermind.
- Specialised computer games designed for using and developing maths.
- Using the mad4maths website!

Mental activities:

- Practising and developing knowledge of addition and subtraction facts within 20 (7+8, 13-5 etc.) and multiplication and division facts to 10 x 10 (6x7, 35/5 etc.) Make it into a game if possible, e.g. have a set of cards numbered 1-10, pick a number such as 4, say 4 times the number on the card as each is turned over, keep all the cards you get right. Beat the calculator as above. On a journey, adult passenger times response, try to beat your own time.
- Ask 'progressive' calculations, e.g. $7 + 6$, $17 + 6$, $27 + 6$, $47 + 6$, $147 + 6$; 5×2 , 50×2 , 500×2 , 500×20 .
- Working out 2-digit additions and subtractions, multiplying and dividing 2-digit numbers by 1 digit numbers mentally. Talk about how to make it easier, e.g. for $28 + 15$, call it 30 add 13 and that's easy; for 16×4 , double 16, then double 32.
- Open- ended activities, e.g. The answer's 25, what's the question? How can you use combinations of 3 and 6 to make different numbers? (Use each number as many times as you like with addition, subtraction, multiplication or division.)