

7 WAYS PARENTS CAN HELP THEIR KIDS WITH MATHS. FROM ONE MEDDLING, MATHS-MAD MOTHER TO ANOTHER

By Danijela Draskovic

I'm a mother of a cheeky, curious and gorgeous 1-year old boy. Naturally, his first toy was a wooden abacus much to his mummy's delight. At the moment, he picks up his abacus, rattles it around, and throws it onto the floor with a shriek of delight when it makes the crashing sound. I have to practice my patience with my desire to show him the beauty in mathematics, as perhaps he's just a little bit too young.

However, I have been thinking about it for a while now. A lot of the time parents assume that their children will learn mathematics almost exclusively from school. I completely disagree and, in fact, wholeheartedly believe that both school and home learning are equally as important and should complement each other as best as possible.

Now you don't need to be 'good at maths' yourself to foster mathematical thinking in your children. In fact, you don't even need to have any of the answers. Parents need to just recognise opportunities for mathematical exploration and need to practice asking good questions. It is up to the child to discover the answers.

So here are my tips for parents. Parents should try to involve their children in as many life decisions and day-to-day 'adult' tasks as possible. Notice, throughout helping them with their mathematical reasoning, parents will be simultaneously helping their children with life skills. Surprise surprise! Maths really is all around us.

1). Give your young children some pocket money and encourage them to manage it

You may even lend them some support in creating a budget. Do they have a goal to purchase a certain item? Let them save for it! How much should they put aside each week so they can buy their item in 3 months' time? How much general spending money do they need? The discussions around their budget could be very powerful and could reveal some interesting areas for exploration. If the child is a bit older, you may discuss with them budgeting for a household. Perhaps let them create a weekly or monthly budget for running the entire house based on what they think the expenditures are. Then reconvene and have a discussion once they have finished. You may be surprised as how much they underestimate, and they may need to readjust the figures. A teenager may also be ready to consider borrowing or investing. This is a wonderful opportunity to discuss interest rates and make comparisons between different types of loans or savings accounts.

2). Cook with your children

Cooking, as well as being an enjoyable and creative activity, also involves a variety of maths skills. Ask your child to amend the quantities of that pancake recipe that serves 6. How much flour would they now need for 3 servings? Or 2 servings? How about a tricky 7 servings? Through cooking we are forced to consider ratio and proportion, fractions, volume, time, addition, division and many more. Added bonus: your children will also appreciate meals more if they have been actively involved in creating

them! Budgeting can also overlap wonderfully with cooking and parents are encouraged to take their children grocery shopping as well.

3). Grocery shopping

The shops are filled with opportunities to ask your children important mathematical questions such as comparing the value of buying items in smaller amounts to items in bulk. For example, which product offers best value for money: 250mL of yogurt for \$1.95 or 1L of yogurt for \$7.50? How much will an entire meal of Pad Thai cost to prepare? What will be the cost per portion? Is it financially more efficient to buy ingredients and cook this meal at home, or is it more economical to have that same meal from a restaurant?

4). Meaningfully involve children in planning for a holiday

Vacations offer rich opportunities to explore mathematical concepts such as distance, time, changing time zones, currency exchange rates, budgeting (again), purchasing travel insurance (comparing different policies), comparing costs of rent-a-car companies etc. Roadtrips are great for estimating the time it will take to get from A to B. Do your kids understand the unit of km/h? With only a couple of questions you will know the answer to that. 'If we drive at an average of 80km/h, how many kilometres will we travel in 3 hours?' 'How long will it take us to travel 120km?'. Speed, distance and time are important concepts in maths/science and need to be understood in meaningful contexts, not just taught out of a textbook.

5). Building? Renovating? Landscaping? Creating a veggie-patch?

Whatever hands-on project you may be working on, involve your kids. Get them to draw a floorplan of their ideal family house (give them some restrictions otherwise you may end up with an indoor go-karting hall attached to a 100-seater cinema room right by the indoor wave pool). Discuss scale and proportion, units of measurement, materials, area, perimeter, shape. Allow them to help you make the herb-garden and work out the volume of soil needed to fill it. They can then go to Bunnings to buy that amount of soil. As a parent you can watch to see their delight if they have gotten the quantity right, or if not, watch them revisit the problem and check where they went wrong. Remember, it's not necessarily important to get it right. They will learn more from their mistakes.

6). Incorporate maths-based games, problem-solving activities and puzzles into family time

Make them fun, challenging, accessible at many levels so that everyone in the family can enjoy it. Think 'low floor, high ceiling' which means that it should be easily accessible even with low-level math skills (low floor) and that it can be extended or adapted for those who are mathematically capable (high ceiling). When giving kids riddles or problems to solve, avoid giving away the answer too soon. You are robbing them of discovering it for themselves. Instead of feeling the thrill and accomplished that they have worked on a problem and found a solution, they will feel the let-down of not having had enough patience and determination to reach the solution themselves.

7). Open the lines of communication

Allow your child to come to you when they do not understand something and empower them to ask for help. Make sure your child understands that nobody is born knowing everything and that marks and grades do not define them. Do not tell your child off for a low grade, instead have a discussion as to why that grade is as it is and how to improve it. Teach them to value the process of learning, and not only that final result on their report cards. If your child embraces learning and develops a love and passion for it, you have set that child up for life. Even when they leave your protective nest and go forth

to TAFE or University or the workforce, you will know that they are motivated internally and value education not just the end product.

Finally, I would like to stress that although I believe all people can enjoy mathematics to some degree, not all of us are designed to be mathematicians. Just like not all of us are built to be NBA players, or have the long, dainty fingers to become pianists. Therefore, it's important not to pressure a child to be something that they are not made for. Nurturing mathematical thinking is important for all people. But whether they use that mathematical thinking to become engineers, or use it to become better business owners, or more efficient chefs, or simply more competent members of society, either way, they are better off.