



## 5 Tips for supporting children with mathematics homework

The tips below are for parents or those assisting children with mathematics homework. Regardless of whether you see homework as vital or unnecessary for primary aged children, it is still often sent home for children in some form during their primary schooling years. There are some important things to consider when supporting your child's mental and emotional wellbeing regarding mathematics that may improve their skills, and attitude towards mathematics. Here are just a few ideas to assist you along the way.

### 1. "I was never good at maths"

This phrase has to go! This saying, or "I hated maths at school", is often repeated to children from their parents or older siblings at some point. I think generally people say it to try to comfort children to know that it's ok if things are hard and that you don't have to be good at everything. This statement however can have dire effects on children and their beliefs of themselves as mathematics learners. Carol Dweck in her book *Mindset* introduces her readers to the power of the word 'yet'. "I don't know how to do that, yet", "I don't understand mathematics, yet". The use of the word yet creates a growth mindset where children can see that through practice and effort to understand [mathematics] concepts what you know, and then in turn what you believe you are good at, can change. So, try to use yet when talking with your child, they might not understand how to do that... yet, but we can work together to find out.

- *Mindset: The new psychology of success*, Carol Dweck, Ph. D.
- *Mathematical Mindsets*, Jo Boaler

### 2. Be passionate, it's contagious!

Building on from point one, be enthusiastic about mathematics, become a mathematical explorer. See the homework as a problem to solve, something exciting where you might not get it right away, but the challenge is set. Peter Sullivan is a mathematics researcher and also writes wonderful teaching resource books for teachers, one being *Challenging Mathematical Tasks*. In this book he mentions the need for children to persevere and be persistent in solving mathematics task, as overcoming obstacles or struggles can be hugely rewarding for children and helps them learn. It's ok to say "this looks tough" or "I'm not sure,



but let's work it out together". Even if you need to 'fake' some of this enthusiasm to start with, it's contagious and your child will want to solve the problems too.

- *Challenging Mathematical Tasks: Unlocking the potential of all students*, Peter Sullivan

### **3. Always ask questions “How did you know that?”**

Working and thinking mathematically involves knowing how and why the mathematics works, not just the steps to 'doing it'. Be a good questioner of your child. Even if the homework only requires answers, always ask a question like:

- “How did you know that?”
- “Why does that work?”
- “How did you get your answer?”

*These questions encourage children to explain their thinking which is extremely important in understanding the mathematical concept itself. For example, when children are solving  $6 \times 7 = ?$  our curriculum expects students to be able not just to provide an answer of 42, but to be able to explain multiple ways to find that answer. Maybe the child knew  $6 \times 6$  is 36 then added another 6 on, or worked out  $5 \times 7$  as 35 then added on 7, or used a 'halve and double' technique working out  $3 \times 7$  as 21 and doubling the answer. Being able to explain how they worked out the answer, means children can then use the knowledge when the questions change or are in a different format. It is also good to ask questions like these when you can see your child has an incorrect solution. Often talking through how they worked it out allows them to have the 'ah-ha' moment themselves and self-correct. Just like re-reading a sentence in a book when the word doesn't sound right or make sense.*

### **4. It's ok to 'phone a friend'**

Mathematics essentially in schools hasn't changed, but the way we teach many concepts has in the sense that we want children to have multiple ways to solve problems, so they have a full 'toolbox of strategies' when it comes to solving more challenging problems. Some of these ways of solving problems may be new to you. There are a number of places you can go for help. One is talking to the teacher, they may be able to provide advice or an explanation of the type of strategy they are looking for. The NSW mathematics syllabus is freely available online, so you can read through the type of concepts taught and some of the strategies being encouraged. You can always use Google search, if, for example, you



wanted to know what was meant by “use a number line”. Be mindful though that mathematics is taught slightly differently in different countries, so if the website is American, it may not match Australian mathematics. The NSW Department’s School A to Z website is also helpful.

- *The NESA Mathematics K-10 Syllabus* <https://syllabus.nesa.nsw.edu.au/mathematics/>
- *The NSW Department of Education School A to Z* <http://www.schoolatoz.nsw.edu.au/homework-and-study/maths/maths-a-to-z>

## **5. Use resources you have on hand - literally!**

It’s ok for children to use their fingers in mathematics. This is an idea that in the past may have been frowned upon and your own personal school experiences may reflect this. However, the use of fingers to work out solutions to questions is not only ok, it’s encouraged. Young children may use their fingers to count by ones to add numbers together where older children may use fingers to keep track of counting by fives when solving  $5 \times 5$  saying “five, ten, fifteen, twenty, twenty-five” and raising their fingers as they count. These steps are all developmentally appropriate for children in primary school. Also encourage your child to try to solve the question in their head (mentally) first, then use fingers or other resources (e.g. paddle-pop sticks) or drawings to help them work it out. Any drawings or written numbers children write provides the teacher with useful information about how your child is working out the answers so don’t rub it out! There is a great article on the use of fingers in mathematics that can be found at <https://www.theatlantic.com/education/archive/2016/04/why-kids-should-use-their-fingers-in-math-class/478053>