



Maths at home really matters!

Developing an understanding of mathematical concepts when we are young is essential, and children's early mathematical understanding is strongly associated with their later school achievement.

But many parents state the biggest barrier to helping their children with maths is their own confidence in the subject, and parents' own fears and worries about maths. Please don't let this be a barrier – we want to support you to help your child to develop strong maths skills. We will teach them what they need to know, but your children need to you to help them retain their knowledge.

Younger children, or older pupils with special needs

It is important for these children not to see maths as a separate or standalone activity but rather as something which is part of everyday activities, games, stories, and conversations.

Here are some ways that you can celebrate maths as part of your child's day:

- Board games, particularly ones with numbered spaces can be useful for the development of early number skills. Most families will have 'Snakes and Ladders' or something similar; if not, this is a great opportunity to make your own!
- Incorporate maths into everyday routines and activities: tidying up and meal times in particular provide opportunities for conversations about counting, comparing, time, and sharing.
- Snack times and meals are a great opportunity to learn maths, such as counting, estimating and comparing. For example, with young children, you could count and match items in a 'Teddy Bears' Picnic.' You can compare numbers of objects using 'more' or 'less' and discuss the capacity of different cups or jugs. A parent or toy can make deliberate errors in counting and sharing, with the child encouraged to identify these mistakes.
- Use mathematical vocabulary where possible as part of conversations and play: for example, when making comparisons (which is bigger? which teddy is first in line? who has more? are they shared fairly?). Opportunities can also be taken for 'shape-spotting' and sorting around the home.
- Find the maths in story books. Notice, and talk about where maths concepts appear in story books.
- Use real life objects to support learning. For example, building bricks could be used to model simple addition and multiplication, or toys used to make comparisons of size or quantity. Measuring items, scales, construction materials, puzzles, sorting and pattern materials are also great sources for discussion and building a solid understanding of maths.

Older children

Older children's work at home is likely to be more closely linked to the maths recently studied in the classroom. When working with older children at home, parents are often faced with an additional challenge – that of mathematical subject material that they themselves may not have used for many years, or methods with which they are not familiar.

For this reason, much of the evidence about supporting older children with maths is about structure, encouragement, and routines.

- Create a daily routine for mathematical practice with your child and reinforce this with praise and rewards. This can increase the amount of time spent 'on task' and improve the effectiveness of how that time is spent. You might want to consider linking this routine to the rhythm of a normal school day, but be realistic in what you can manage as a family.
- Encourage your child to set goals, plan, and manage their time, effort, and emotions. This type of support can help children to regulate their own learning and will often be more valuable than direct help with mathematical tasks. As children become older, more independence can be expected, but support will still be needed.

- Having a place to study maths is helpful. This could be a desk in a bedroom or a place at the kitchen table. Ensure your child has the materials they need. Whatever they may tell you, a notebook and pen will always be needed for working out (even when tasks are online).

Away from providing structure, there are some tips for engaging in mathematical content with older children at home:

- Having an instant recall of number facts is vital. Pupils need to just know the answer to facts such as $16+3$, $20-9$, 8×9 , $36\div 6$. If they have this knowledge in their short term memory, they can then use that to work out more complex maths. If you can help your child to learn these facts, this would be so helpful. Your teacher should tell you if your child has a gap to work on, but if you notice any gaps, please help your child to learn these facts. We suggest that you use 'Spaced Repetition' for this. Spaced repetition is a memorization technique that involves reviewing the same information at increasing intervals until that information is embedded into long-term memory. If you've ever tried to learn a new language using apps like Duolingo or Rosetta Stone, you've used spaced repetition. Here's a simple way to apply this technique. Your child writes 10 calculations (including the answers) on 10 flashcards. Then they review the flashcards daily. Each few days you read out the cards and ask pupils to give you the answer. As they get confident with remembering the cards, you can add more cards. When a fact seems to be remembered really well, it is important that it is still part of your tests, although you can remove it from the pile that the pupils look through daily.

If you need to create a lot of flashcards, you can also use apps, like Quizlet, to do the heavy lifting for you.

- It can be difficult to learn new mathematical content away from the classroom, but evidence suggests that we should provide opportunities for children to retrieve the knowledge that they have previously learnt. Parents should encourage practice of previously studied content. This can be via an online learning platform 'Doodle Maths'.

(Information in part taken from <https://educationendowmentfoundation.org.uk/news/blog-supporting-the-learning-of-mathematics-at-home> and <https://zapier.com/blog/better-memory/#spaced-repetition>)