

Bringing maths into bedtime stories can help children learn – and make the subject less scary for parents too

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As parents, we know how important it is to read to our children. Many families include this as a regular part of the bedtime routine. While we feel confident this is contributing to our child's literacy development, [new research](#) shows that this nightly routine could also be used to help improve maths skills.

How reading can help your child learn maths

The study by [researchers in the US](#) gave 587 students in year 1 (between 6 and 7 years old) tablets featuring an app with short passages to read with their parents. Parents would read these passages with their child and then answer questions based on the text. Families used the app on average 4 times a week between the Autumn and Spring of 2013-14. One group read stories which contained a mathematical focus, which allowed children and their parents to discuss maths in a natural way and complete simple problems together. Each passage came with five questions ranging in difficulty from preschool to fifth-grade level and covered topics including counting and arithmetic, fractions, geometry and probability. There was also an additional bank of questions for families who wished to explore the passage further. Families could complete as many questions as they were comfortable with after reading the story.

A second, comparison group read the same passage with the specific maths content removed and answered questions which focused on recalling facts, inferring information and spelling. **The results were overwhelming.** The students were tested before and at the end of the study and those who read the maths stories, adapted from the Bedtime Math [app](#), showed significant improvement in their overall mathematics learning during the year.

When comparing the children in each group who used the app most frequently, the study saw a three month advancement in maths achievement for those who read the maths-focused stories.

Helping parents boost their confidence in maths

Research shows that parents tend to place more importance on language learning than on mathematical development when their children are young. A reason for this could be that parents don't feel as comfortable with teaching maths, compared to literacy. But research shows that when parents are stressed about maths, their children learn less mathematics over the school year and can also develop the same negative feelings towards the subject.

Children who feel anxious about maths are also less likely to engage in the classroom and will avoid mathematical tasks. This avoidance leads to missed learning opportunities and a greater sense of potential failure.

Once the cycle has begun, it can be hard to redirect this momentum. While the research focused on stories designed for an electronic device, the findings highlight some key points for parents. Sharing stories with a mathematical focus, and the discussions which are then created, can contribute to an increase in achievement at school. For parents who are struggling with their own mathematical anxieties, this comes as welcome news. The study goes on to suggest that this sharing of stories and discussing maths with our children, can help parents become less anxious in this space.

The federal Government recently committed \$6.4m to support the development of maths resources for students. This forms a part of the government's agenda to improve the teaching of science, technology, engineering and maths subjects in our schools.

So how can parents use books to help improve their child's maths skills? Here are some suggestions:

Reading tips for parents

Read books with mathematical concepts to your children.

In some books the content is obvious - we are all familiar with Eric Carle's *The Very Hungry Caterpillar*.

Try reading these as well:

- *365 Penguins* by Jean-Luc Fromental
- *Leaping lizards* by Stuart Murphy
- *Math for all seasons: Mind-stretching Maths Riddles* by Greg Tang
- *My Grandmother's Clock* by Geraldine McCaughrean

Consider asking your local librarian for some other ideas. Look for books with amusing pictures and colourful illustrations - we know how this attracts children to read. Talk about the book with your child, as you would with any other story.

The mathematical elements will naturally come into the conversation and should be encouraged – this will help children to see maths as part of everyday life. By simply including books which include mathematical concepts in night-time routines, parents can feel more confident that they are contributing to the mathematical development of their child outside the classroom at the same time as creating a less stressful environment for discussing mathematics.