

EEF blog: Using Storybooks to Promote High-quality Talk in Maths

Kirstin Mulholland, maths content specialist, explains how storybooks can play an important role in Maths

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Evidence highlights the potential role that high-quality talk can play in supporting and extending pupils' learning.

Blog • 1 minute • 24 November, 2022

Recommendation 2 of the EEF's '[Improving Mathematics in the Early Years and Key Stage 1](https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217)'

(https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217) guidance report offers several practical ideas to integrate purposeful mathematics activities into the school

day. This highlights that using storybooks can be particularly effective in providing rich opportunities for mathematical talk.

However, in and of itself, just reading these books to children is not enough to develop and extend pupils' mathematical thinking. Instead, Clements and Sarama (2018) emphasise that children must be supported to actively engage with the mathematical concepts represented in these books, as well as to consider how these relate to their own ideas, experiences and contexts.

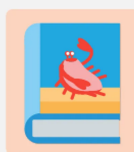
Drawn from the EEF's '[Improving Mathematics in the Early Years and Key Stage 1](https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217)' (https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217) guidance report, this new resource provides suggestions to support practitioners to plan how they will use storybook resources to maximise the potential for high-quality talk. For example, once practitioners have established shared attention such as by making 'I wonder' and 'I notice' comments about the book, this resource offers suggestions for questions which can prompt children's reflections about mathematical concepts.

There are a number of mathematics story and picture books available across a range of ages that can be powerful in engaging children with mathematical concepts. *Development and Research in Early Math Education* (DREME), an early mathematics research network based at Stanford University, provides evidence-informed guidance for practitioners and parents on choosing books with appropriate mathematical content. It produces 'Storybook Guides' to support effective use of the books, including ways to maximise the mathematical talk.



Extract from resource for the storybook 'Inside, Outside, Upside Down' by Stan and Jan Berenstain (1998). Suitable for ages 2–4.

A bear gets in a box that gets turned upside down, taken outside, and put on a truck. Children learn about spatial words.



Extract from resource for the storybook 'One is a Snail, Ten is a Crab' by April and Jeff Sayre and Randy Cecil (2003). Suitable for ages 5–8.

Each page invites children to count the number of feet that people and different animals have.

Mathematical talk during reading:

- Talk about what is happening in the picture, emphasising words that describe spatial relationships—Do you see Brother Bear getting in the box? Where is the box going? How do you know?
- Consider opposites—What is the opposite of going on the truck? What is the opposite of getting inside the box?
- Make predictions—What might happen next in the story? If the box is upside down and we turn it around, will it still be upside down?

From *Development and Research in Early Math Education*.


Mathematical talk during reading:

- Explore counting the number of feet in different animals—How many feet does an insect have? Can you show me with your fingers?
- Practise adding one more—What happens when we add one foot? How many feet do we have altogether? How do you know?
- Explore counting by groups of 10—If we have two crabs, how many feet do they have altogether? How do you know?

We hope that these examples support colleagues' understanding of how to maximise the potential offered by storybooks to extend children's mathematical thinking. Further information and guidance, including five key recommendations for teaching maths for children in this age range, can be found in the EEF's '[Improving Mathematics in the Early Years and Key Stage 1](https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217)' guidance report (https://d2tic4wvo1iusb.cloudfront.net/eef-guidance-reports/early-maths/EEF_Maths_EY_KS1_Guidance_Report.pdf?v=1635355217).


References


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