

Supporting all families to enjoy maths at home

Panellists:

Lucy Preston – Programme Director, Learning with Parents

Dr Ems Lord – Director, NRICH

Liz Woodham – Primary Coordinator, NRICH

[Learning with Parents](#) is a charity working to ensure that every child is supported to achieve their potential at home. The Learning with Parents programme is run in UK primary schools, motivating and empowering families to have enjoyable learning experiences together. Learning with Parents works to ensure all families are effectively supported, especially those facing the greatest barriers.

Through the programme, teachers set topics and hands-on activities for families to complete at home. Many of the maths topics include NRICH tasks, and with child-led videos, notifications and nudges for parents, teacher tracking and support, we are able to ensure that all families are able to enjoy exploring their learning at home.

[NRICH](#) is an innovative collaboration between the Faculties of Mathematics and Education at the University of Cambridge which focuses on problem solving and on creating opportunities for students to learn mathematics through exploration and discussion. NRICH provides thousands of free online mathematics resources for ages 3 to 18.

Supporting all families

In this session we will explore how can we ensure that maths tasks are...

- Accessible
- Collaborative
- More than numbers
- Celebrated

Maths in primaries today

The EPI and Renaissance Learning recently published a [study](#) on what they term 'lost learning'. The study showed that in March this year, children in primary had lost 3.5 months of learning in maths, and 2.2 months in English. The study also showed that by the end of 2020, the pandemic led to a loss of between a third and two thirds of progress in closing the disadvantage gap.

However, there is also a lot to be hopeful about. Parents have never been so engaged in their children's learning as in the past year, and there was significant progress to recover the 'lost learning' from 2020 in the Autumn Term despite all the disruption. We know parents play such a key role in a child's learning. **How can we build on this engagement to ensure families continue to engage in learning going forward?**

The importance of parents

A study by the Institute of Fiscal Studies found that whereas only 14% of the attainment gap at the end of primary school is due to schools, 49% is explained by parents – their family background, education, attitudes, and behaviours.

At Learning with Parents, by designing a home learning programme that supports the most disadvantaged families to engage in their children's learning, we can help to close this gap. Putting disadvantaged families first enables all families to engage in their children's learning.

Activity - [Break it up](#)

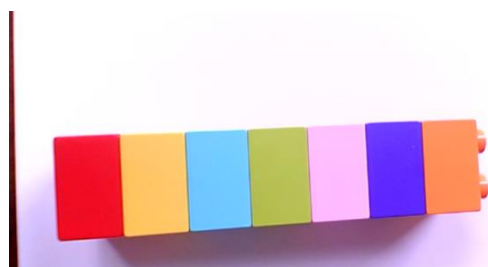
Participants were asked to share in the chat what they noticed about the seven-block tower, and what they wondered.

Participants **noticed**...

- There are seven blocks
- The blocks are all different colours
- The blocks are all the same shape

And **wondered**...

- If there are any more colours in the box
- If the pattern will repeat
- If the colours are the colours of the rainbow



Participants were asked how many different ways the tower could be broken up into two smaller towers. Participants offered a wide variety of suggestions. This task lends itself to lots of different 'what if' questions. A parent and child working together on this activity, whatever their experience with maths, would be able to split the tower into two and think about different ways to do this. This activity is an accessible starting point for a parent and child to work collaboratively to solve a maths problem.

A guide to building accessible tasks – read more about this in our blog for Mathematics Mastery [here](#)

1. Are your physical resources accessible for all families?
2. What types of objects will families be comfortable using? For example, using food in activities is not appropriate in all homes.
3. How can families make the most of the learning experiences in everyday life?

NRICH – Maths at Home

NRICH has a dedicated section on their site for activities to be played at home. The activities discussed are all featured in this [section](#) (as well as through the Learning with Parents programme).

Activity - [Totality for Two](#)

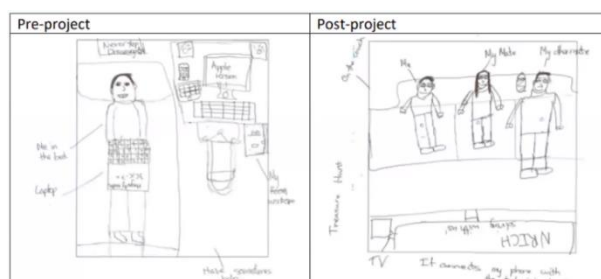
This activity has a silent video that families can watch to try to work out the rules. This prompts collaborative problem solving between the child and parent, who are on a level playing field. It is important that parent does not need to act as a teacher or expert. Instead, collaboration is at the heart of the activity.

Guidance for Parents and Collaboration – Learning with Parents

A lot of parents' anxieties around maths and supporting with homework can be alleviated with an understanding that parents do not need to be the experts or teachers. Activities which put collaboration at the centre are more fun and engaging and help to get more parents involved. You can read more about our advice on homework to support all parents in our blog 'Is your homework policy supporting all parents?' [here](#)

Solving Together, parental engagement project - [NRICH](#)

With funding from Nesta, NRICH ran a case study investigating the impact of setting games for families for homework. For 6 weeks, children were given one NRICH game to do at home. At the beginning of the study, less than 1% reported doing maths *together* with their parents at home. By the end of this study, this increased to 20%. When the children were asked to draw themselves doing homework both pre-project and post-project, we can see a massive transformation in the way children perceived homework, from a solitary activity to a collaborative one.



Getting parental engagement right can be a huge boost for the child's learning.

Activity - [Stop the Clock](#)

This is an interactive game played against the computer. The aim is to reach midnight before the computer does. The settings menu can be used to adapt the game for different levels and then explore different outcomes.

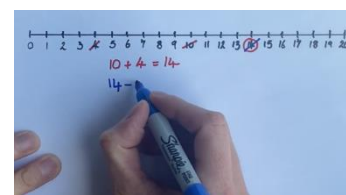
This is a useful activity to encourage discussion of strategy as families can play repeatedly, trying out different moves. Equally, by playing against the computer, families get an insight into good moves and can begin to think about the best strategy. It also helps to show families that maths can be about so much more than numbers alone.

Approaching Midnight



Activity - [Strike it Out](#)

Families only need paper and pen for this activity. Through this game children are completing lots of calculations, but the strategy element ensures there are rich conversations around these.



Activity - [One Big Triangle](#)

This is a game to practise number bonds to 10. Using the printout resources, the aim is to arrange the small triangles to make one larger triangle. The small triangles should fit together where touching sides add up to 10.



Celebrating home learning

Celebrating families' engagement in learning is so important but we need to think carefully about what to celebrate. By recognising and celebrating families' *engagement* in the learning, rather than right and wrong answers, can help ensure the activities are inclusive and reduce anxiety. Both NRICH tasks and Learning with Parents' own tasks avoid right and wrong answers and encourage families to be creative and explore their learning.

By making the learning journey the goal of the engagement we can avoid alienating some parents, and it encourages families to extend and stretch the activities. At Learning with Parents our reward scheme is tied to engagement so we can continue to motivate families to keep coming back to the activities throughout the year.

Final comments

Supporting parents to feel confident exploring learning with their child at home can be fun and accessible. As teachers, it is important to carefully consider the types of activities to ensure that all families can make the most of the maths together.

At Learning with Parents, we work with UK primary schools and the focus is on ensuring *all families* are effectively supported, especially those facing the greatest barriers.

Through our maths programme we use our own and as well as NRICH activities. These are embedded within a programme of support and on an accessible platform to ensure that through notifications and nudges for parents, and clear child-led videos to support, that even those facing the greatest barriers can enjoy learning at home.



The programme started from the understanding that many programmes fail to support the families who need it most. With support from the DfE, Nesta and the University of Chicago amongst others, the programme uses the latest behavioural insights research to ensure schools are supported to reach their most disadvantaged families.

If you want to find out more, you can email hello@learningwithparents.com