



Conference Session Outlines

Opening Plenary

Les Staves. The roots of maths for children with very special needs

The presentation will discuss why it is important to have a curriculum that will encourage relevant math's to grow for all children, including those who are at the earliest levels of learning. It will review the nature of relevant content and approaches to teaching and learning.

Its starting points may relate to children who have not yet reached numeracy, or are well behind age related expectations. But I hope it will provoke consideration if its messages are relevant at later levels.

Closing Plenary

Kinga Morsanyi. Dyscalculia: What it is and what to do about it

Dyscalculia (specific learning difficulty in mathematics) is a condition that affects about 6% of the school-age population. Although dyscalculia is equally prevalent as dyslexia, and it can seriously affect people's life chances, it is neglected by both educational professionals and policy-makers. Currently, in the UK (and in many other countries), a diagnosis of dyscalculia is almost non-existent, and educational support and official recognition is lacking.

In this talk, I will present information about current conceptualisations of dyscalculia, how it can be identified, and how it can be discriminated from other conditions. I will also introduce a new screening tool to identify pupils with mathematics difficulties in the classroom, and make some recommendations for best practice.

Short bio:

Dr Kinga Morsanyi is a Senior Lecturer in Mathematical Cognition at Loughborough University. She has broad research interests, which lie at the intersection of research into mathematical

cognition, and reasoning and decision making. Currently, one of her main research interests is in dyscalculia. Dr Morsanyi is researching the cognitive profile of individuals with dyscalculia, the demographic risk- and protective factors, typical symptoms (including problems in everyday settings), and co-morbidity with other developmental conditions. She is also leading the development of an app (Numeralis), which will comprise a standardized screening instrument for dyscalculia and tasks to assess the broader cognitive profile of learners. Dr Morsanyi is associate editor or editorial board member of several academic journals, member of the UK Young Academy, and advisory board member of the Dyscalculia Network.

Alison Roulstone. Practical strategies and interventions to support learners with difficulties in mathematics. i-CAN Maths Workshop Session

i-CAN Maths is a maths magnetic counting frame that uses a Hungarian number frame (double five domino pattern). i-CAN Maths can help learners build good number sense using the maths mastery approach. Designed to be used one-to-one, in small groups and with the whole class i-CAN Maths is fully flexible and each session can be tailored to meet learners' specific needs. i-CAN Maths encourages learners to visualize number, builds subitizing skills, develops mathematical reasoning skills and mathematical fluency.

Tracey Roberts. No One Left Behind

Finding the right course for learners is often tricky, even trickier for pupils who are often disengaged or demotivated with education. The session will explore an alternative course for KS4 pupils to enable a positive and successful experience within maths. The qualification in particular will support learners with identified skills gaps in Maths and can be used to support progression or even run alongside GCSE.

Come and see what we have learnt from delivering the course at both Level 1 and 2 along with the changes in pupils' perception to maths following their success, and how we make this work within our curriculum.

Pete Jarrett. The transdiagnostic model of neurodiversity and the maths learner

How can the conceptualisation of neurodiversity across multiple dimensions that breaks away traditional models of diagnostic siloes help us to understand barriers to mathematics in the classroom? There is a lot of debate about whether categories such as dyscalculia, dyslexia or ADHD adequately describe what we see as teachers.

This presentation will take recent academic discussion as a start point for understanding the complexity of cognitive processes, for example, the role language development plays in the

development of mathematical understanding, and how we can begin to understand the impact environmental and behavioural variables can magnify difficulties.

Janet Goring. Using the EEF's Five- a- day principle to increase access for learners with special needs in the Mathematics classroom.

This session will use the EEF'S: "Five-a-day" approach to discuss how we can support all learners to make progress and feel more confident, with a focus on pupils with special needs. Each of the five strands will be explored through case studies of teachers successfully implementing strategies in their settings. Participants will also be encouraged to discuss and share their own experiences and develop a one-page plan to take away and implement.

The Equals Curriculum discussion - Thinking Aloud about Curricula

Kat Adams (Rocklands School), **Angela Miller** (Forest Oak School) and **Les Staves**

This is a practical session that will allow participants to share their curriculum stories and solutions. If you are seeking to, or are currently developing, your special school maths curriculum then this is the session for you. Angela and Kat will lead the session and share what they have done respectively over the past 12 months in their schools. Please join them and come ready to share what you do and to support each other.

The Equals Assessment discussion - Thinking Aloud about Assessment

Matt Welborn + Neil Barker

Matt and Neil will lead this session that will focus upon Assessment of maths within different schools to explore what other practitioners are doing for assessment, what is working well, and what areas can we focus on to develop. If you are asking: 'How do we assess, what do we assess our pupils against and what methods of assessment do we use to both record and track progress?' then this is the session for you.

Matt and Neil will share how they assess in their own settings, some of the benefits and areas to develop before opening the room up to discussion to explore how other schools use assessment. We hope you will leave with ideas to develop assessment of SEND learners, and share what best practices we all use.

Natasha Dolling. How LEO Academy Trust is using technology to improve inclusion for children with SEND.

At LEO Academy Trust, we are excited to be at the forefront of using technology to improve inclusion. We believe that technology can be a powerful tool for ensuring that all children have the opportunity to succeed. Technology is being used to help children with SEND access learning, work independently, and overcome barriers to learning.

I am excited to explore the future of technology in education. I believe that technology has the potential to revolutionise education and make it more inclusive for all children. I am excited to see how LEO Academy Trust and other schools continue to use technology to improve inclusion.

Louise Langford. Representations of number- Securing a visual structure to transfer knowledge

This will be a practical session based on my article in the Equals Magazine summer 23 and is appropriate to delegates teaching all ages and stages, as well as those involved in professional development work.

We will look at a variety of dot patterns to study developing a secure representation of numbers, based on effective practice for teaching those with Mathematical Learning Difficulties and Dyscalculia. We will explore 'cluster' recognition, building on subitising and the idea of efficiently composing and decomposing number, discuss the importance of linking this to linear representations to connect understanding of the amount, its magnitude and number order, then focus on known representations of ten and how these expose different mathematical structures to broaden and deepen thinking, as well as enable learners to communicate their mathematical thinking more readily.

Lara Lalemi, Creative Tuition Ltd. Beyond the Western Canon: Enriching Secondary School Mathematics Education with Diverse Mathematical Knowledge

In recent years, there has been a growing recognition of the importance of incorporating diverse perspectives and knowledge into educational curricula, especially in mathematics. This talk highlights how traditional mathematics education often overlooks the rich and diverse contributions of global cultures and knowledges, leading to missed learning opportunities for school students to engage with the subject fully. The talk discusses the impact of colonialism on mathematics education

and advocates for using an anti-colonial framework to critically examine and enrich the curriculum. By integrating captivating examples from ancient civilizations and indigenous cultures, teachers can encourage school students to gain a deeper appreciation for the universality and interconnectedness of mathematics across societies and with themselves in daily life. Through the incorporation of diverse mathematical examples, teachers can show students alternative ways problem-solving methods and different perspectives, fostering critical thinking and creativity. Moreover, exposure to the accomplishments of mathematicians from non-Western cultures can empower students from diverse backgrounds, allowing them to see themselves as active participants in the field of mathematics.

Magdalene Lake. [The vicious cycle of poor reasoning: Putting the horse back before the cart to address inequalities and improve maths attainment for everyone.](#)

Reasoning is fundamental to good maths attainment for everyone, and yet, we often think that pupils must have certain mathematical skills before trying any reasoning, which leads to fewer opportunities for those with lower attainment to develop their thinking, and a vicious cycle ensues. In this session, we will look at who is at risk of this vicious cycle, why reasoning will improve number sense and calculation, and how to improve reasoning when number skills are low.

Rob Jennings – The Dyscalculia Network

The Dyscalculia Network have just signed a deal for a new maths assessment with Jessica Kingsley publishing. It is due out next year and is entitled ... 'The Maths and Dyscalculia Assessment' and is an assessment tool aimed at formulating a focused teaching intervention plan. Come along to this session and find out more!

Dominic Petronzi. [Understanding Maths Anxiety](#)

Kaye Wetherall or Nick Asker. [Maths and the ASD learner](#)