MathsHUBS

Bespoke

NEWS

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Welcome to the latest issue of Bespoke, as one of the Maths Hubs celebrates its new name – Turing NW – in honour of the great mathematician and codebreaker Alan Turing. We also present an overview of all the CPD available via Maths Hubs in 2019/20, and hear from some Primary Mastery Specialists. Plus we preview a video that's part of the secondary mastery professional development materials project.

MATHS HUB RENAMED TO HONOUR ALAN TURING

Lady Nicola Turing, wife of Alan Turing's nephew Sir Dermot Turing, officially launched the newly named Turing NW Maths Hub at the hub's lead school on Tuesday 18 June.

Ashton on Mersey School in Sale hosted Lady Turing along with guests from the Department for Education, the school's parent body The Dean Trust, and other partners of the hub, as it celebrated its name change.

Turing NW is one of the 37 Maths Hubs forming a network across England. The hub serves schools across Greater Manchester and has already worked with hundreds of teachers to benefit thousands of pupils.

Known since 2014 as North West Two Maths Hub, the hub changed its name following a newly established link-up with The Turing Trust, an organisation run by Alan Turing's family to provide computers in developing nations. The trust's CEO, James Turing, Alan Turing's great-nephew, was immediately enthusiastic when the Maths Hub approached him about adopting the Turing name:

> *My family and I are continually delighted and humbled that Alan Turing's legacy provides such inspiration to so many. It is an honour that the Maths Hub has chosen to formally recognise Alan's achievements by naming the hub Turing NW, and we look forward to collaborating with them to improve educational opportunities.*

The new name pays tribute to the famous mathematician and code breaker, whose links with the North West were established when he became an academic in the University of Manchester's Department of Mathematics after the Second World War.

At the launch event, guests had an opportunity to see a lesson showcasing teaching for mastery. Year 5 pupils from Forest Gate Academy in Partington, Manchester impressed in their lesson on problem-solving. After the lesson showcase, Lady Turing addressed guests and formally renamed the hub, speaking about the legacy of Alan Turing and how he continues to inspire young people. She also shared details of the work of The Turing Trust in Malawi, where innovative solar-powered computers are being used to give people crucial access to technology.

The Maths Hub Lead, Sarah Coldbeck, hopes the adopting of the Turing name will inspire both teachers and pupils across the region they serve:

> *We are very proud to carry his name and will endeavour to encourage mathematicians of all ages in the hope that one day they might also be able to use maths to impact positively on the lives of others. We aim to honour his legacy and embody his passion for mathematics in all the work we do.*

For more information about Turing NW and the work they do, visit their website at mathshubsturingnw.co.uk.

National Centre for Excellence in the Teaching of Mathematics

MathsHUBS | PROJECTS 2019/20

WHAT MATHS CPD SUITS YOU AND YOUR SCHOOL THIS YEAR?

Every Maths Hub is again this year organising Work Groups within national projects. These span the school and college phases, and address a range of themes. All Work Groups are broadly similar in structure, with schools and teachers at hub level engaging in professional development activities around an agreed targeted outcome. Just as in earlier years, results and successes will be measured and evaluated, and will inform subsequent years' projects. Contact your local hub to find out which projects they are running.

HOW TO TAKE PART: If you'd like to participate in any of this work, then contact your local Maths Hub to find out where opportunities still exist: www.mathshubs.org.uk.

EARLY YEARS

Supporting effective transition from Reception to Year 1: Best practice in Early Years can build a secure foundation in maths for transition into a teaching for mastery approach in Year 1. Work Groups in this project will consider the curriculum – what children need to know and understand, approaches to planning and the inclusion of all children, and appropriate resources and contexts for effective learning.

PRIMARY

Teaching for Mastery – Maths Hubs are exploring several models of practice:

- Establishing Work Groups of teachers from schools who are: (i) becoming 'mastery ready', (ii) introducing teaching for mastery, or (iii) continuing and embedding work started in 2018/19
- Refining understanding of lesson design, in Work Groups which make use of textbooks and the mastery professional development materials produced by the NCETM and Maths Hubs
- Exploring intervention in a mastery context, where Work Groups use case studies and research to devise effective interventions
- Considering how teachers can plan for the teaching of maths in mixed age classes, where Work Groups will use current work, resources and case studies in this area.

STRADDLING THE TRANSITION

Year 5 to 8 Continuity: Primary and secondary teachers collaborate on this project, to ensure continuity of mathematical learning from Year 5 to Year 8. Work Groups will take an aspect of the mathematics curriculum or a pedagogical approach as the focus for their work and use that as a framework for exploring improved maths progression for pupils between Years 5 and 8.

SECONDARY

Teaching for Mastery: What does effective mastery of maths look like for secondary school students? Work Groups will probe this area, with participants becoming 'Mastery Advocates' within their schools and developing their pedagogy and knowledge through bespoke support from a Mastery Specialist.

Challenging Topics at GCSE: Tackling GCSE Maths presents challenges for students and teachers alike. Work Groups will explore a single GCSE topic, establishing what the issues and the common misconceptions are, how these might be addressed, and how teaching in KS3 might improve understanding for this topic in KS4.

Mathematical Thinking for GCSE: Work Groups offer teachers and their departments nationally coordinated support to address the reasoning and problem-solving challenges of the maths curriculum and its assessment at GCSE.

POST-16

Supporting Post-16 GCSE resit: These Work Groups will get to grips with a variety of methods designed to support teachers of students resitting their Maths GCSE.

The three Level 3 projects explained below are run by Maths Hubs in partnership with the Advanced Maths Support Programme (AMSP).

Supporting Core Maths: Teachers either new to Core Maths or looking to expand existing provision can join Work Groups exploring the philosophy and practicalities of this qualification.

Embedding Technology in Level 3 Mathematics: Effective embedding of technology in the teaching of Core Maths, A level Maths and/or Further Maths enhances teaching and students' conceptual understanding. These Work Groups provide teachers with practical advice to develop their own technology skills and their students' mathematical comprehension.

Developing Pedagogy in A Level Mathematics: The demands of A level Maths are explored, as participants develop knowledge of the content and requirements of the specification and understand the purpose of the overarching themes.

SPECIALIST KNOWLEDGE FOR TEACHING MATHEMATICS (SKTM)

There's more to subject knowledge than knowing how to do the maths yourself. Teachers and teaching assistants need to have a clear understanding of how children grasp and retain mathematical concepts. This year, Maths Hubs are running Work Groups in this area for EY practitioners, primary teachers, and TAs in primary schools.

ITT PROVIDERS

In each Maths Hub area, a network of ITT providers will be created, to develop working partnerships, spread good practice, and share work on mastery with trainee teachers.

LEADERSHIP IN MATHS EDUCATION

Every Work Group is led, at local level, by a teacher experienced in leading maths-specific CPD. Across the Maths Hubs Network, programmes exist to enhance this leadership capacity and to support those seeking to become local leaders of maths education (LLMEs). These programmes include:

- Developing Mastery Specialists in primary and secondary schools
- Running national workshops for maths SLEs to explore models to maximise school improvement activities, and learn from each other.
- Supporting teachers who have attained, or who are seeking to achieve, NCETM Accredited PD Lead status
- Maintaining local networks so local leaders of maths education can stay in touch.

MASTERY MATERIALS FOR SECONDARY TEACHERS

View and download the video at: ncetm.org.uk/rodsvideo

Coloured sticks used in secondary maths lessons? Surely that stuff has been left behind in primary school? Not so! There's a strong case for the continued use of physical resources that expose mathematical structures, at least up to the end of Key Stage 3. But there's also a case for materials to help secondary teachers appreciate the power of such resources, and that's the purpose of a new video produced by the Maths Hubs Network, alongside the NCETM's secondary team.

The video is part of a much bigger materials project, designed to help secondary teachers develop understanding of teaching for mastery. These materials, mostly as downloadable PDF's, have been written to prompt and support curriculum planning discussion between teachers working together, and are broken down into six mathematical themes:

- The structure of the number system
- Operating on a number
- Multiplicative reasoning
- Sequences and graphs
- Statistics and probability
- Geometry.

Each theme is further sub-divided into 'Core Concepts', statements attach to 'Knowledge, Skills and Understanding', and 'Key Ideas'.

For the full set of materials, go to ncetm.org.uk/secondarymasterypd.

BECOMING A PRIMARY MASTERY SPECIALIST

Mastery Specialists introduce teaching for mastery approaches in their own schools and beyond. But just what is the impact of becoming a Primary Mastery Specialist? We asked some Mastery Specialists what makes the teaching for mastery approach really work for them and their pupils.

"Seeing the changes in the children and the excitement that they have about their learning now is phenomenal. There is a really big maths buzz around the classroom and around the school."

Zoe Williamson, Yorkshire and the Humber Maths Hub

"Maths becomes more purposeful for you as a teacher, but most importantly it becomes purposeful for the children in the classroom. They can transfer their maths knowledge into real-life situations to make them better mathematicians."

Stuart Houghton, Archimedes NE Maths Hub

"I've been teaching for twenty years and I'm still learning things at every session – light-bulb moments."

Anna Bunce, Great North Maths Hub

"We changed the mindset of the staff and the children. Now maths is the strength of the school."

Tony Irvine, Great North Maths Hub

"The children's attitude to maths has changed. They are more engaged and they enjoy the different approach in the classroom. I feel more confident as a practitioner."

Pete Burrell, North North West Maths Hub

"I'm looking forward to everyone else in my school having the mastery bug that I've been bitten with."

Rachel Ratibb, Matrix Essex and Herts Maths Hub

The Maths Hubs Programme is funded by the DfE and coordinated by the National Centre for Excellence in the Teaching of Mathematics
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