Maths Hubs Programme Annual Report

2023/24

MATHS HUBS

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

ncetm.org.uk | @NCETM

Coordinators of the Maths Hubs Programme

Useful links

Want to know more about the work of the Maths Hubs?

About Maths Hubs
explains what a Maths Hub is, the areas covered by each hub, and the history of the programme

Four types of professional development
explains the different formats of Maths Hubs CPD: Work Groups, programmes, communities and Targeted Support

What Maths Hubs are doing
has details of over 30 fully-funded professional development opportunities available through Maths Hubs and the NCETM

Looking for professional development resources?

Curriculum Prioritisation
materials provide a term-by-term framework to support planning and teaching primary maths

Checkpoints
are hundreds of diagnostic activities to help assess KS3 students' prior learning

The NCETM Maths Podcast
offers discussions about maths teaching in all phases and is available on all major podcast platforms

Curious about teaching for mastery?

Mastery Explained
gathers evidence, exemplification and research about the approach

Mastery Materials
features a wealth of resources to help teachers develop mastery in their schools and classrooms

Mastery Magnified
brings together case studies and interviews from schools that have embraced mastery

Keen to explore further?

NCETM
is the home of the National Centre for Excellence in the Teaching of Mathematics

AMSP
is the Advanced Mathematics Support Programme, supporting teachers of post-16 maths

NCETM on LinkedIn
is a great way to stay up-to-date with what's new from the NCETM for maths teachers

The data within this report has been analytically assured, but there may be some methodological differences in how programme engagement is defined compared to other Maths Hub and DfE publications.

Welcome

58%

Schools in England engaged with their Maths Hub in 2023/24

Welcome to the Maths Hubs Programme Annual Report 2023/24, reflecting on success across the network in 2023/24.

The Maths Hubs Programme started in 2014. Over the last decade it has had a positive impact on millions of pupils, and thousands of schools and teachers. To have been involved since its inception has been a privilege.

Looking back on 2023/24, we see a programme that constantly reflects, evolves and develops. With over 30 Network Collaborative Projects run in hundreds of Work Groups across 40 Maths Hubs, the network meets the needs of teachers and pupils, developing high-quality maths teaching and learning in all phases.

In this year's report, we showcase examples of the work of the programme up and down the country, celebrating those who lead the work, and the participants who take their learning back to their schools and classrooms.

During the year, thousands of teachers and teaching assistants from almost 60% of all state-funded schools engaged with their Maths Hub. They worked collaboratively with their peers, locally and nationally, to improve their subject knowledge and pedagogy.

Highlights include:

- Mastering Number at KS2 built successfully on the foundation established by Mastering Number at Reception and KS1. Participants are reporting that their KS2 pupils are enjoying maths more, and developing a deep understanding of multiplication.
- Specialist Knowledge for the Teaching of Mathematics (SKTM) programmes continued to support teachers from Early Years to post-16; the new programme for secondary teaching assistants has proved popular and successful.
- Post-16 GCSE/FSQ Mastery Specialists completed their first year and began to develop mastery approaches in GCSE resit and Functional Skills Qualifications (FSQ) classrooms nationwide.
- Targeted Support in Mathematics helped schools in the most challenging circumstances to benefit from the Maths Hubs Programme, offering bespoke support for school leaders and teachers to embed long-term, sustainable changes in maths.

Partnerships continue to underpin Maths Hubs' work. With support from the NCETM, Maths Hubs have provided effective system leadership in maths education which engenders lasting improvements. We remain grateful to the Department for Education for their continued investment, which makes the programme possible.

Thank you to all those who engage in, and support, the Maths Hubs Programme

We look forward to the next ten years.

Kathryn Greenhalgh
Maths Hubs Lead and Chair of the Maths Hubs Council

Charlie Stripp
National Director, NCETM

Maths Hub Leadership

The Maths Hubs Programme began in 2014, with 32 hubs serving all England's state-funded schools. Since then, the number of hubs has grown to 40, and Lead Schools – institutions that lead each of the Maths Hub partnerships of system leaders – now include trusts, colleges, primary schools and secondary schools.

The leadership structures of Maths Hubs have grown and changed too. Each hub has a Maths Hub Lead plus a Senior Leadership Link – a member of the Lead School's senior leadership team. Now, Hub Leads may also have a Deputy Hub Lead, and Assistant Hub Leads oversee phase-specific activity for primary, secondary and post-16.

At the heart of delivering hub CPD at a local level, local leaders of mathematics education (LLMEs) are practising teachers who, as experts in maths subject knowledge, pedagogy and professional development, lead Work Groups and other hub activity. Since the start of the Maths Hubs Programme, the number of active LLMEs in any year has grown to over 1,500, and they form their own communities in each hub to collaborate and develop their knowledge and expertise.

Operational Management teams provide invaluable support for hubs, and the role of Project Manager is something that has seen significant evolution over the past ten years. Project Managers are responsible for a range of operational activity, including logistics, events, finance, communications and marketing.

Overseeing all hub activity, Strategic Boards – similar to governing bodies – are made up of individuals from the hub area who can offer strategic and local knowledge about maths education. Strategic Boards are an example of how the Maths Hubs Programme has developed in the last ten years. Previously known as 'steering groups', their role in supporting and challenging hubs has been refined and honed through systematic review and collaboration.

1,500+

Active LLMEs in 2023/24

960

Active Mastery Specialists, all of whom are LLMEs

Maths Hubs Programme Annual Report 2023/24

01 Ten years of the Maths Hubs Programme

The NCETM was set up in 2006 to improve the teaching and learning of maths in England, and in 2014 the first Maths Hubs were established with the aim of achieving that goal. The idea was to create a school-led system, harnessing the expertise already present in England's schools and colleges, to improve maths education, both for teachers and their pupils. In the last decade, the Maths Hubs model, underpinned by the principles of teaching for mastery and with an evidence and research-informed approach, has enabled teachers themselves to drive improvements in maths teaching and learning.

> *Working with Maths Hubs reignited my teaching career. I was working in a secondary school as a head of department and was at an important crossroads in my career. With Maths Hubs, I found a community of other passionate, enthusiastic and dedicated maths educators that put teaching and learning at the top of their agenda. Maths Hubs have now created a community for maths teachers to engage with and develop both themselves and others.*
>
> **Aidan Gollaglee, Maths Hub Lead, London South East+ Maths Hub**

> *The Maths Hubs Network has been a fundamental part of my own professional development. Being a part of this community of system leaders has helped me understand what a really effective national approach to teacher development looks like.*
>
> **Andy Ash, Maths Hub Lead, Cheshire and Wirral Maths Hub**

> *I was lucky enough to be part of the first secondary England-China Exchange in 2015, and have worked with the hub ever since. Becoming involved in the Maths Hub has dramatically enhanced my teaching career. I have made a huge network of contacts and friends, and my teaching practice has changed (and continues to change) immeasurably. I know it will have impacted positively on the hundreds of students I have taught, as well as the many colleagues I have worked with.*
>
> **Deb Friis, Assistant Maths Hub Lead, Sussex Maths Hub**

Maths Hubs Leadership

Ten years in numbers:

40

Maths Hubs

Was 32 (25% ▲)

13,900+

Schools have engaged with teaching for mastery*

Was 140 (9,829% ▲)

33

Network Collaborative Projects

Was 17 (94% ▲)

**Since the academic year 2015/16, when the first schools started to work with their local Maths Hubs.*

Primary

This year 7,576 schools were involved in Teaching for Mastery Work Groups, spanning the spectrum of developmental stages, from 'Mastery Readiness' to the 'Sustaining' phase.

Usually, one or two lead participants from each school come together to form Work Groups, which are led locally by experienced Mastery Specialists. Here, participants meet regularly during the year to collaborate with peers from other local schools, to share ideas and develop their own practice. Between sessions, teachers work alongside their colleagues and their school's leadership team to improve maths teaching and learning in their school. Often, they receive additional support through visits from their Mastery Specialist. The expectation is for all schools to maintain their involvement with the Maths Hub to ensure ongoing improvement.

Following on from the success of the Mastering Number Programme at Reception and KS1, Mastering Number at KS2 was introduced; a new project aimed at securing firm foundations in multiplicative relationships in Years 4 and 5. This programme was offered to schools that are in a Sustaining Work Group and have already been involved in Mastering Number at Reception and KS1. 1,111 schools have completed their first year, and will continue to embed pupils' learning this year and beyond.

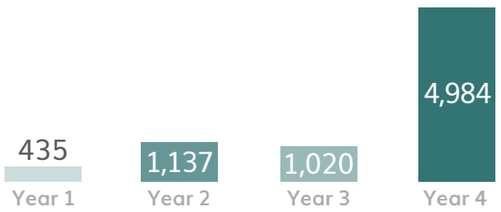
1,349

Schools involved in Mastering Number at Reception and KS1

1,111

Schools involved in Mastering Number at KS2

Primary Specialist Knowledge for Teaching Mathematics (SKTM) programmes attracted 4,582 participants this year. There are four different programmes on offer: Early Years, Primary Teachers, Primary Teaching Assistants and Primary Early Career Teachers. Each is tailored towards improving specific subject and pedagogical knowledge for teaching maths.



Number of primary schools engaged in the different stages of the Teaching for Mastery Programme

01 Teaching for mastery in a mixed-age setting Q&A

Emily Crankshaw
Assistant Headteacher and maths lead at St Peter's CE Primary School, Harrogate

One of the main principles of teaching for mastery is keeping the class together, with all children learning the same concept in the lesson. For many primary teachers this raises the question: 'How can this work for my mixed-age class?'

Emily Crankshaw, a teacher of a mixed Year 5 and 6 class and maths lead at St Peter's CE Primary School in Harrogate, explains how her school has successfully implemented a mastery approach.

Tell us about your school and the start of your mastery journey
St Peter's is a medium-sized primary school based in the town centre. We have relatively high mobility due to our location and catchment area, and have 29 languages spoken across the school. There are currently 263 pupils on role with nine classes in total, two of which are single-age classes, and the rest are mixed-age.

We started working with the Maths Hub in 2016 when I began my role as maths lead. Since then, I have trained as a Mastery Specialist, and we are now in the Sustaining phase.

What have been the challenges in implementing mastery in mixed-age classes?
Initially, the challenge was in designing a curriculum with a two-year rolling programme and supporting staff to make the change from teaching their two year groups separately. Developing teacher confidence and understanding of how to plan effective lessons with the NCETM materials was crucial, as well as ensuring everyone had a secure understanding of the teaching for mastery pedagogy. Finding time for professional development isn't easy, but we make it a priority.

How have you overcome these challenges?
The key thing was to actively engage staff in the process. Workload has been greatly reduced, as teachers only need to plan and resource one lesson, and this is done collaboratively in phase teams. During the trial year, we offered regular opportunities for teachers to feed back so we could further improve the sequence of the curriculum.

We now have a dedicated hour for maths every day and use our support staff more effectively to support pupils, where previously they would have been supervising a group during split inputs.

Seeking support along the way has been invaluable. We've had training from within our MAT on adaptive teaching strategies, and have worked with the Maths Hub to find CPD to suit our needs. Children's fluency in additive and multiplicative facts was a big focus for us, so the Mastering Number Programmes have been incredible, as has the mixed-age teaching Research and Innovation Work Group (RIWG).

What has been the impact of using the mastery approach?
It has improved teacher subject and pedagogical knowledge and confidence with using the materials – everyone has a secure understanding of mastery and embraces this way of teaching. Each classroom is consistent, from the vocabulary to the representations and structures we use.

No longer splitting inputs means we have time to go deeper within each concept, which has improved pupil understanding. It's been a huge success, and just shows that mastery can work in any school context.

However, the journey is never complete! Next year we want to develop procedural variation within our daily intelligent practice, and ensure all new teachers are trained and supported in this way of teaching.

02 Raising expectations with teaching for mastery Q&A

Louise George
Headteacher at Walford Nursery & Primary School, Ross-on-Wye, Herefordshire

Walford Nursery & Primary School in Ross-on-Wye, Herefordshire, has been working with SHaW Maths Hub since 2016, when two of their teachers engaged with the Teaching for Mastery Programme and returned to school with a new-found enthusiasm. Over the last eight years, their engagement with the hub has grown, leading to enormous impact on the staff and pupils.

Headteacher, Louise George, shares their journey and how mastery has overhauled their maths curriculum.

How has your engagement with the hub evolved over the years?
After the initial involvement with the Teaching for Mastery Programme, our deputy head trained as a Mastery Specialist and I became a Headteacher Advocate. All our teachers and support staff have participated in Work Groups, such as the SKTM programmes and Years 5-8 Continuity.

All this amazing CPD has put us in a great position, and continues to have an impact on the teaching of maths in school. Most recently, we have taken on Mastering Number at Reception, KS1 and KS2, and we are still active members in the Sustaining phase of teaching for mastery.

How has mastery changed maths at your school?
Previously, we were putting a ceiling on children's success through focusing on differentiation and ability groups. Mastery has opened us up to whole-class teaching and now every child is able to access the same learning. Teachers are ensuring that all children are actively participating in lessons; they are reasoning, justifying and developing their mathematical language. The improvement of mathematical talk has been key. Stem sentences, which are a central feature of the Curriculum Prioritisation and Mastering Number materials, have given children the vocabulary they need to express and deepen their understanding.

Year on year, we've noticed a significant improvement in our end of KS2 data but, more importantly, we're confident that every child is well-equipped for their transition to secondary school. Every single child, including those children who have unique learning difficulties, is engaged with maths. We feel they are armed with the knowledge and understanding that they need to succeed.

What would you say to other headteachers considering engaging with teaching for mastery?
Why wouldn't you? It's free and nothing compares to the quality of maths CPD that we have received since joining the Maths Hubs Programme. The sessions are packed with subject knowledge and pedagogy, the children benefit enormously, and it is full of opportunities for every staff member in your school, teaching and non-teaching.

03 Mastering Number at KS2

Claire Mulhern
Headteacher at St Peter & St Paul CE Academy, Syston, Leicestershire

Knowledge of multiplication and division and its applications forms the single most important aspect of the KS2 curriculum, and is the gateway to success at secondary school. Mastering Number at KS2 is designed to enhance pupils' fluency and understanding of these operations in Years 4 and 5. The programme provides structured professional development for teachers, to help them support pupils in developing automaticity and flexibility with numbers through regular, short practice sessions.

Claire Mulhern is a Headteacher Advocate for East Midlands South Maths Hub and co-headteacher at St Peter & St Paul CE Academy in Syston. The school is a large, suburban primary in Leicestershire, with above-average levels of deprivation and a growing proportion of children with English as an Additional Language (EAL).

The school's journey with the Maths Hub began many years ago, and they are now in the Sustaining phase of teaching for mastery. Inspired by the significant benefits they have experienced from using Mastering Number at Reception and KS1, Claire and her team were eager to replicate this success at KS2. The impact of the programme this year has been profoundly positive.

Tracking progress has also shown remarkable results. At the beginning of the academic year, Year 4 pupils' recall of multiplication facts was below the national average. By June, thanks to the dedication of Claire's team in delivering Mastering Number at KS2, Year 4 pupils excelled in the Multiplication Tables Check (MTC).

Mastering Number is now a permanent fixture in the school's maths curriculum across Reception, KS1 and KS2, and Claire aims to ensure all new staff are well supported to teach the programme effectively in the next academic year.

> *Our teachers love teaching these sessions and our children look forward to them. The focus on oracy and gesture make these lessons accessible to everyone, including children with SEND and EAL. I often hear the stem sentences from the sessions being used to reinforce concepts within our main maths lessons, and the gestures have had a remarkable impact on children's visualisation and conceptual understanding.*

> *I was so keen to participate, and I wasn't disappointed. Such a great programme allowing for enthusiasm, participation, making connections and use of language.*
>
> **Mastering Number at KS2 participant**

> *This programme is exceptional – it has changed practice within my setting and impacted positively on the outcomes for pupils at our school. As a professional it has deepened my knowledge of teaching for multiplicative relationships.*
>
> **Mastering Number at KS2 participant**

04 Early Years SKTM Q&A

Natalie Lee
Maths lead, Early Years and KS1 lead, and Reception teacher at Our Lady Catholic Primary School, Hitchin, Hertfordshire

This year, Natalie took part in the Pattern, Shape, Space and Measures pathway on the Specialist Knowledge for Teaching Mathematics (SKTM) Programme for Early Years Teachers with her local hub, Matrix Maths Hub.

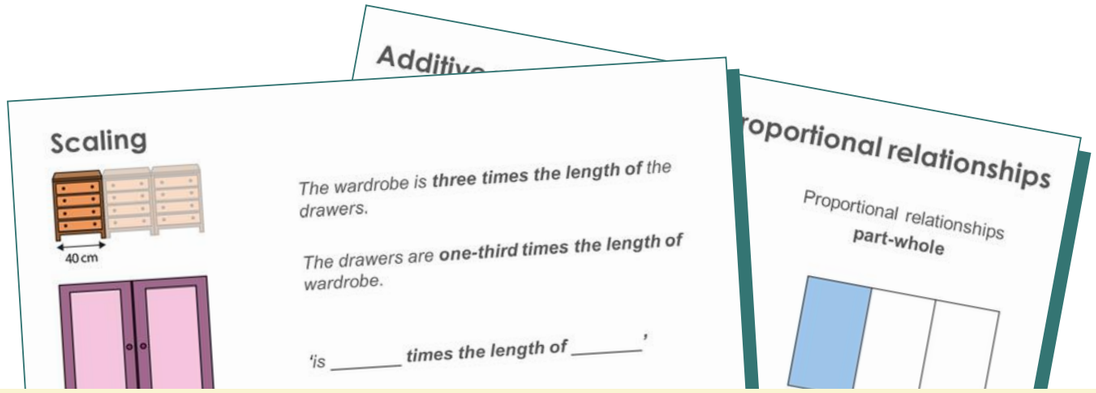
What made you want to take part in the SKTM Programme?
My school was in the Embedding stage of teaching for mastery as well as participating in the Mastering Number Programme. To make sure strong practices were happening in all the teaching of early maths in my school, I wanted to develop my own subject and pedagogical knowledge for pattern, shape, space and measures.

How did your participation in the programme benefit your class?
Having taught in Early Years for over 20 years, I was amazed at how my knowledge of teaching pattern to children has changed as a result of this programme. I felt this year that both myself and the children in my class were on a learning adventure. Deepening my own knowledge of the topic and how children learn has enabled me to deepen their understanding.

All the children in my class have made progress and it is incredible to see pupils that have no English on entry making Good Level of Development (GLD) at the end of Reception. I have 4- and 5-year-olds talking about maths in continuous provision and using stem sentences. I could go on and on about the impact it has had! As maths lead, I am also making sure the approaches I have learned are being implemented effectively in KS1, and supporting colleagues who teach in Year 4 and Year 5.

What would you say to someone considering taking part in an SKTM Programme?
I am a true advocate for the NCETM and Maths Hubs, and would recommend the SKTM Programme to anyone keen to support their pupils' maths learning. Fundamentally, the programme makes children's understanding of maths easier to comprehend, so you can support their learning to enhance their ongoing maths journey. What you learn about pattern, shape, space and measures enables you to provide your class with the foundation of maths learning skills for them to build upon.

We had a visit from our Local authority to take a deep dive into both maths and Early Years, and I was proud to show them just how well the children are doing and how much they enjoy and learn well in maths. I'd recommend the programme to anyone!



05 NEW: Primary SKTM Core Materials

One of the Strategic Goals the NCETM and Maths Hubs work towards for primary schools is to ensure all teachers of mathematics have the specialist knowledge and skills required to teach mathematics effectively. The Specialist Knowledge for Teaching Mathematics (SKTM) Programme for Primary Teachers therefore has to stay up-to-date with what this means in the classroom, and ensure that the national core materials used to deliver the programme explain and illustrate what effective teaching looks like.

This year, the national core materials for this programme have been updated, so that all schools engaged in teaching for mastery can embed it with fidelity, and teachers can feel confident that they are planning lessons which adhere to mastery principles. All the updated national core materials used to support participants' professional development draw on recent research and evidence.

Theory is linked to practice through video clips, and is accompanied by a range of tasks and activities. The Five Big Ideas in Teaching for Mastery are drawn out, and coherent steps are built into the different concepts developed. Participants in the programme develop a deep understanding of how children learn maths, and therefore how best to teach it.

Representations explored in the updated national core materials expose the structure of the concepts, and participants can get to grips with how these concepts and representations develop over time throughout the primary curriculum.

Modelled lessons and video lesson excerpts help teachers draw out different elements of teaching, and reflection templates have been included to support participants to make connections in their learning, and transfer this into their practice.

What do participants think about the new PD materials, and their experience of the programme this year?

> *Using different representations to show the structure of the mathematics has had an impact on children's understanding.*

> *Children are more engaged in the lessons through an increased use of concrete resources.*

> *More of my class, even pupils with SEND, seem better engaged with the lesson through the use of pictorials and representations – they can 'see' the maths better.*

> *Now I understand the principles of teaching for mastery and how they can be used to teach a rich maths curriculum which supports all learners. This is something I will be working on with other staff in the future.*

> *I have started asking the children in my class to 'visualise' a number line after we have spent time exploring it practically, to support the building up of that internal image.*

> *The programme has shown me practical ways to develop children's spatial language, through fun practical activities.*

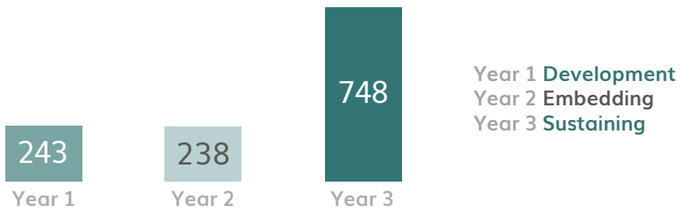
Secondary

Secondary schools' engagement with Maths Hubs continued to grow in 2023/24, with 2,037 schools actively participating.

Of these, 243 schools were at the Development stage of teaching for mastery, while 986 were embedding or sustaining a mastery approach. Schools in the these phases remain in Work Groups so they can continue to build on departmental improvements and further enhance their teaching of maths.

Secondary schools were also able to take part in Work Groups supporting the main Teaching for Mastery Programme to enable maths departments to address a particular need. These Work Groups focus on topics such as building continuity from Year 5 to Year 8, with schools working together in local clusters.

Two more recent opportunities to support maths leadership – the Secondary MAT Maths Leaders and the Secondary Maths Subject Leaders projects – remained popular with participants in 2023/24, reflecting an increased recognition of maths leadership as a vital component in supporting outcomes for students.



Number of secondary schools involved in the Teaching for Mastery Programme

Maths Hubs Programme Annual Report 2023/24

Secondary

01 NEW: Themes at Sustaining for 2023/24

Schools involved in Sustaining Work Groups can choose from a range of themes, ensuring their focus on mastery is bespoke to the needs of their department. In 2023/24, two new themes explored the relationship between maths and science, and the role of mathematical thinking to support deeper conceptual understanding.

Developing mathematical coherence for learners across maths and science
Recommendations in the 2023 Ofsted science report, 'Finding the Optimum', advised schools to 'coordinate closely between maths and science departments' to ensure students receive consistent messages about mathematical concepts and procedures.

This theme aims to support the integration of maths and science teaching to address discrepancies in how these subjects are taught, with lead teachers from both departments working together in equal partnership to explore the similarities and differences between maths and science and how these are experienced by students. With maths comprising 20% of combined science and 50% of triple science content, the theme has proved popular and feedback from students has shown that, following their teachers' participation, they are better able to 'see how the maths in science worked'.

Developing mathematical thinking
In its 2023 maths subject review, 'Coordinating mathematical success', Ofsted emphasised the importance of mathematical reasoning and the value of a 'coherent sequencing of mathematical content' to build students' reasoning skills over time. A key aspect of this theme is the strategic emphasis on reasoning and problem-solving GCSE assessment objectives; components of the exam that have historically posed challenges for students, especially prior lower attainers, who may experience fewer opportunities to engage in problem-solving activities.

With a particular focus on enhancing oracy and developing strategies to encourage mathematical talk, participants in these Work Groups aim to ensure that mathematical reasoning becomes an integral part of the learning experience of all students.

02 Taking the maths department from struggle to success

SCHOOL

The Chantry School, Worcester

HEADTEACHER

Andrew Dickenson

SIZE

An 11-18 school with 810 students

DISADVANTAGE

16% students eligible for free school meals

MATHS HUB

GLOW

In 2017, The Chantry School began noticing a decline in its maths results, and a subject review revealed significant inconsistencies within the maths department. The review highlighted a lack of coherence in teaching approaches and student experiences, as well as an outdated scheme of work. Another critical issue identified was the premature placement of students into the foundation tier GCSE route, limiting the potential achievement of many.

Recognising the urgency of the situation, the school appointed a new head of department, Lucy Judge, who brought with her a fresh perspective. Lucy reached out to GLOW Maths Hub, and a small group of teachers embarked upon the Teaching for Mastery Programme in 2020. This led to a comprehensive overhaul of the maths curriculum for Years 7 to 9, emphasising depth of understanding rather than the pace of coverage. Crucially, the department decided to delay the split between foundation and higher tiers, which led to higher expectations and gave students time to demonstrate their full potential.

Lucy's commitment to staff CPD became a cornerstone of this transformation. Administrative tasks were streamlined to free up time for staff to engage in collaborative learning and development. This shift not only improved teaching practices but also fostered a strong sense of community and shared purpose within the department.

The impact of these changes has been profound. Student confidence in maths has soared, with a noticeable improvement in their enjoyment and engagement with the subject. The department has seen a renewed passion for teaching maths, with a consistent and coherent approach. The school's efforts were validated during an Ofsted deep dive in 2023, which praised the school's approach to maths education.

While some impacts are anecdotal, the positive trends are undeniable. The school's progress score has improved to +.4 and more students are now pursuing the higher maths route, reflecting the power of a cohesive teaching for mastery approach and setting the stage for sustained improvement.

> ***Being part of a national conversation and having the opportunity for our teachers to work with other teachers, in an evidence-rich environment, has allowed a huge amount of development to happen in our curriculum – and it's having a sustainable impact on outcomes for our young people.***
>
> **Andrew Dickenson, headteacher at The Chantry School, Worcester**

03 Teaching for mastery as a tool for sustained change

SCHOOL

Penwortham Priory Academy, Preston

HEADTEACHER

Matt Eastham

SIZE

An 11-16 school with 762 students

DISADVANTAGE

26% students eligible for free school meals

MATHS HUB

Abacus NW

Peter Kenrick has been the head of maths at Penwortham Priory Academy for ten years. Upon his arrival at the school, Peter encountered a range of challenges, including an outdated scheme of work and poor results. Initial adjustments to the department failed to yield results, prompting the department to completely rethink its approach. The turning point came when Peter attended a session at Penwortham Girls' High School, where he was introduced to the Teaching for Mastery Programme. He immediately recognised its potential, and enrolled his then second-in-department, Ciaran Henshaw, on the Secondary Mastery Specialist Programme with the local Maths Hub, Abacus NW, marking the start of a transformative journey.

Ciaran spent his first year mastering key concepts, such as the use of bar models and algebra tiles, and working with colleagues to embed these across the department. By his third year, Ciaran was collaborating with other local maths departments to develop their understanding and practice. Over time, the school's partnership with the Maths Hub grew, with Peter and his team accessing a range of CPD opportunities which have had a significant impact on teaching practices.

Implementing these changes has not been without challenges. Staffing, particularly the need for permanent, specialist staff, has been a major hurdle. Another significant challenge was the development of a new curriculum and changes made to how students were grouped. However, a new focus on departmental collaboration has brought the team closer together, ultimately improving results.

For departments considering similar changes, Peter recommends exploiting the strengths of the existing team:

> ***Non-specialists and teaching assistants can make significant contributions if they can engage in CPD that improves their understanding and teaching practices. Maths Hubs offer invaluable support for those staff. Mastery is about quality teaching, collaboration and taking a student-centred approach. The support and resources from Maths Hubs can facilitate this journey, making it manageable and beneficial for both staff and students.***
>
> **Peter Kenrick, head of maths at Penwortham Priory Academy, Preston**

Secondary SKTM Q&A

In 2023/24, Francesca Pintaudi participated in the Specialist Knowledge for Teaching Mathematics (SKTM) Programme for Secondary Non-specialist Teachers with London Central and West Maths Hub, and Theresa Baker was the Cohort Lead for the programme. Francesca was teaching some maths, having initially studied for a PGCE in modern foreign languages (MFL), and Theresa previously had leadership roles in the maths department at her school in London before becoming an LLME across a range of Maths Hubs including Sussex and London Thames.

As a result of participating in the programme, Francesca decided to change her teaching path, and secured a post as a full-time maths teacher from September 2024.

Francesca Pintaudi
SKTM participant, London Central and West Maths Hub

What is your background in teaching?
I was born and raised in Italy. My mother, a primary school maths teacher, introduced me to the world of education from a young age. Inspired by her, I began tutoring while studying at university and worked as a primary school supply teacher in Italy. Upon moving to the UK, I worked in different sectors before completing a secondary PGCE in MFL, and I am now an ECT.

How did you end up teaching maths instead of your main subject?
I've always been passionate about maths and told my school that I'd be keen to teach it as well as my MFL lessons. Teaching outside my main subject enables me to more easily anticipate and identify common misconceptions for students. As I've helped my students understand and progress, my passion for the subject has grown – and so has theirs.

What did you find particularly useful and enjoyable about the SKTM Programme?
The programme is designed to offer a range of activities that help participants to teach maths using a mastery approach. It illustrates the practical applications of maths in everyday life, and simplified abstract concepts. Our Cohort Lead's positivity, competence, and enthusiasm were crucial in reassuring us as non-specialist teachers. She addressed 'maths anxiety', and we discussed the best ways to support our students who might be experiencing it.

407

Participants in Secondary Non-specialists SKTM Programme

What made you decide to switch fully to maths teaching?
When I plan and teach maths lessons, time flies and I never get bored – nor do my students. My greatest aspiration is to make maths an accessible language for every student.

What are your plans to continue your professional development journey as a maths teacher?
I define myself as 'an enthusiastic never-ending learner', and I am eager to deepen my expertise. Determination and dedication have been key in achieving my goals, and the NCETM and Maths Hubs have offered me an incredible opportunity to expand my knowledge, to challenge myself again, and above all to make me view maths in a very positive way.

Theresa Baker
Cohort Lead, London Thames and London Central and West Maths Hubs

How did you get involved with your local Maths Hub and become an LLME?
I was second in maths and head of sixth form maths at The BRIT School in Croydon. To develop my leadership skills, I took part in the NCETM Professional Development Lead Programme. I managed to involve my whole department in the CPD programme I developed, and I really enjoyed the interaction with other maths professionals.

I was then asked to be a Cohort Co-lead for the SKTM Non-specialist Teachers Programme with London Thames Maths Hub, and ultimately ended up leading it on my own. Soon after, I was asked if I would also lead a cohort for Sussex Maths Hub, and later London Central and West. I'm now in my third year of leading the SKTM Programme.

What do you enjoy about leading the programme?
I particularly like it when participants learn to love teaching maths, when they may have only started because they were asked to fill in, or because they did not have enough teaching hours available in their main subject. The programme promotes collaboration, and has led to participants feeling much more enthusiasm for teaching maths. They have a safe space to ask questions that they may feel unable to ask back in their departments, if they fear their maths colleagues may think that they can't do the job.

How do you make the programme bespoke for your participants?
The NCETM provides me with a set of evidence-based materials to use to deliver the programme, and I stick to these in the order they are provided as that makes sense both for me and the participants. We also have time to meet up online if required. This might be for specific things like preparation for interviews, lesson planning around the programme materials, or simply going over some of the extra activities on a one-to-one basis.

What does the future hold for your work as an LLME?
Plenty more! I'll continue to run the SKTM Programme for Secondary Non-specialist Teachers with the hubs I currently work with, and I'm co-leading Mathematical Thinking Work Groups next year for London Central and West Maths Hub. I've also signed up to lead A Level Pedagogy Work Groups again, as well as those for the Cross-Phase – Supporting Students to Achieve a L2 Qualification in Maths project, and a cohort for the SKTM Programme for Secondary Teaching Assistants.

285

Participants in the SKTM Programme for Secondary Teaching Assistants

Post-16 Institutions

141 schools, colleges and other post-16 institutions collaborated with their local Maths Hubs in 2023/24, to enhance the teaching of A level, Core Maths, GCSE resit and Functional Skills Qualifications (FSQs).

Maths Hubs offered an expanding range of support for teachers in schools and colleges to improve their practice and help students to achieve beyond Year 11. Work Groups were available to enable teachers to collaborate in a range of areas including GCSE resit, A level pedagogy and Core Maths.

Maths Hubs and the Advanced Mathematics Support Programme (AMSP) continued their collaboration to provide support to teachers of Core Maths, with a Developing Core Maths Pedagogy Work Group and a New to Core Maths SKTM Programme to support the development of specialist knowledge and confidence for those in the first two years of teaching Core Maths.

01 NEW: Post-16 GCSE/FSQ Mastery Specialist Programme

Following an initial 'Trailblazers' pilot programme in May 2023, the first full cohort of 40 Post-16 Mastery Specialists began their journeys in the autumn of 2023. The Post-16 GCSE/FSQ Mastery Specialist Programme has been designed to build on the success of the Primary and Secondary Mastery Specialist Programmes and is focused on engaging GCSE resit and Functional Skills students, aged 16-19, in compulsory maths settings.

52

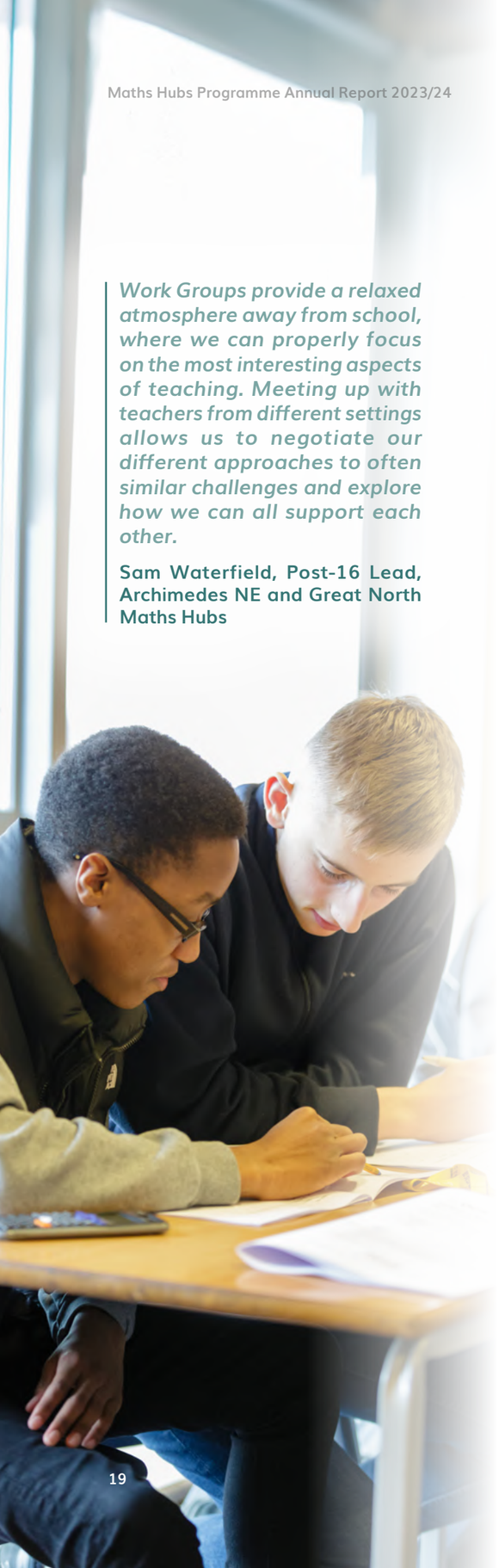
Post-16 Mastery Specialists beginning training in 2023/24

Applications for the programme have far outnumbered the places available, with Maths Hubs recruiting Post-16 Mastery Specialists alongside their primary and secondary counterparts. New cohorts will join the multi-year programme every year, each joining a growing collaborative network of specialists who work with maths colleagues in their establishments.

In each cohort, participants have had a sense of being part of something special that will make a difference to the outcomes and life-chances of students:

Throughout this programme, I have delved into the Five Big Ideas in Teaching for Mastery, integrating them into my lessons. The results have been amazing! Some strategies have led to significant improvements in student engagement and comprehension. Others still need fine-tuning, but that is all part of the exciting process of continuous learning and growth. The impact on all post-16 maths students will be substantial, and I am eager to see the future successes unfold.

Filip Szatkowski
Head of maths at Berkshire College of Agriculture and Langley College (working with BBO Maths Hub)



Work Groups provide a relaxed atmosphere away from school, where we can properly focus on the most interesting aspects of teaching. Meeting up with teachers from different settings allows us to negotiate our different approaches to often similar challenges and explore how we can all support each other.

Sam Waterfield, Post-16 Lead, Archimedes NE and Great North Maths Hubs

02 Developing A Level Pedagogy Work Group

Sam Waterfield
Post-16 Lead, Archimedes NE and Great North Maths Hubs

Sam Waterfield is a full-time teacher of maths and physics at Durham Sixth Form Centre, which has over 1,800 students from over sixty secondary schools. He is also the Post-16 Lead for both Archimedes NE and Great North Maths Hubs, coordinating professional development opportunities across the North East, as well as leading Work Groups himself.

Work Group Theme: Mechanics
In 2023/24, Sam ran a Developing A Level Pedagogy Work Group which explored opportunities to embed practical skills throughout the teaching of A level Mechanics. With a modal score of zero for 4 out of 5 questions in Edexcel A level Mechanics for all students nationally in June 2022, Sam was keen to work with teachers in his Work Group to explore how the teaching of mechanics could be improved.

A practical approach
Across three sessions, teachers in the Work Group had the opportunity to look at research, such as cognitive load theory and the spatial contiguity principle, and consider how these principles could be applied to improve and refine lesson design. Work Group participants were also provided with their own practical equipment, with a series of specially-designed practical tasks centred around dynamics and kinematics to try with students in their own settings. Participants were then able to come together to discuss and explore these tasks further, benefiting from their peers' ideas and expertise.

03 Core Maths at Luton Sixth Form College

Graeme Austin
Head of maths, Luton Sixth Form College

Graeme Austin, head of maths at Luton Sixth Form College, was a keen advocate of the Core Maths qualification long before assuming his current role. With 25 years of experience in the City, Graeme recognised the qualification's practical value in both life and work.

Adopting a dialogic approach
Graeme's first port of call was to find out more about how to approach teaching Core Maths, and with an existing relationship between the college's maths department and Enigma Maths Hub, connecting with the hub seemed a sensible place to start. This put Graeme in touch with other local teachers of Core Maths who recommended a focus on classroom dialogue and debate. Graeme arranged for staff in his department to observe classes in discursive subjects like psychology and sociology, which proved invaluable in supporting teachers to adapt their approaches.

It's the antithesis for many people of what a maths lesson should look like, but it's what all discursive subjects and their teachers are doing. Our teachers have embraced it.

Developing pedagogy and curriculum
Graeme found a wealth of support available to those wanting to introduce the Core Maths qualification. Extensive resources and teaching ideas were available from the Advanced Mathematics Support Programme (AMSP) to support the creation of a curriculum, whilst Graeme and colleagues have been able to engage with Enigma's Developing Core Maths Pedagogy Work Group. This provided opportunities for Graeme's staff to develop their understanding of the subject and the teaching approaches that would support the open-ended problem-solving skills Core Maths students need to develop. An additional benefit of the Work Group model was the opportunity to collaborate with peers from other post-16 institutions and to trial and test new approaches.

Lessons learned
By integrating schemes of work from other maths-rich subjects, Graeme tailored the Core Maths curriculum to cover key topics in advance. This preparation boosted student confidence and performance, particularly in areas like statistics for psychology students and hypothesis testing for biology students.

Graeme also extended the course to two years to reduce workload, he scheduled homework sessions during college time to alleviate the burden on students and teachers, and mandated the course for students in other maths-rich A levels to ensure better preparation and higher success rates.

Scaling up and future plans
Core Maths has been a resounding success at Luton Sixth Form College, growing from an initial pilot of 12 students to 450 students in Years 12 and 13, in just two years. Graeme expects continued growth as the qualification's value becomes more widely recognised and his department is expanding to meet the rising demand, with more students studying maths at post-16 in the college than ever before.

Targeted Support in Mathematics

Whilst the Teaching for Mastery Programme continues to grow, with over 50% of all England's schools already involved, some schools need additional support in order to begin participating in the programme.

Thanks to additional funding, Targeted Support in Mathematics (TSM) has been introduced across the Maths Hubs Network in the past year. It is designed to ensure that any school needing additional support can receive the bespoke input required to begin their mastery journey, and to have the systems in place to sustain it in the long-term.

Eligible schools – those with identified barriers to participation in the full Teaching for Mastery Programme – may be referred to their local Maths Hub for Enhanced or Intensive support. This is in addition to the usual support a Maths Hub can offer a school wanting to introduce teaching for mastery.

Enhanced support is for schools participating in the standard Teaching for Mastery Programmes. The support is tailored to address specific barriers to implementation that school leaders identify.

Intensive support involves sustained, bespoke collaboration with leaders to develop a school's capacity and climate for implementation. In the long-term, this aims to build the foundations for accessing the standard Teaching for Mastery Programmes.

Schools taking part in 2023/24 have benefited from the intensive, sustained support of a Maths Hub Intensive Support Partner (ISP). The ISP works in partnership with leaders to build capacity within the school which fosters a supportive culture and good foundations for implementing improvements in the teaching and learning of maths. This is achieved through the ISP and the school working in partnership to explore, plan, deliver and sustain the implementation of a bespoke improvement plan. Fully-funded support provides participant schools with release time to develop and deliver the improvement work designed to fit their context.

In 2023/24, nearly 900 schools received Targeted Support, and are now on their way to embedding teaching for mastery in maths.

01 From struggling to thriving: a year of intensive maths support

Louise Burnett
Intensive Support Partner (ISP),
Origin Maths Hub

Louise Burnett is an Intensive Support Partner (ISP) with Origin Maths Hub. This year, one of the schools she has worked with is St Andrew's Catholic Primary School in Solihull.

The Intensive Support Partner
An ISP must be a credible, experienced expert in professional and school development, and have knowledge of local schools. Louise has worked with Origin since the hub's inception, and before that with Central Maths Hub. She has led SKTM programmes and Mastery Readiness, and is one of Origin's Primary Assistant Maths Hub Leads.

This year, Louise has also participated in the NCETM School Development Lead Programme, enhancing her own understanding of the school improvement development cycle.

Why this school?
St Andrew's was eligible for Intensive support because of recent changes to leadership; the headteacher was new in post this year, and the maths lead was new to subject leadership. The majority of staff are ECTs or in their first few years of teaching. With support from the Maths Hub and the school's Catholic Multi Academy Company, changes to systems and planning for maths are now stabilising.

St Andrew's had been involved in Mastery Readiness in 2021, but impact was limited by staffing changes. The school identified that it was not ready to progress, so was identified for TSM. The intention from the outset was to support the school to be able to participate in a Development Work Group.

Building relationships
The relationship between an ISP and a school is crucial for the success of TSM. From previous local work, Louise already knew the executive head, head of school, and maths lead. Because she built positive personal and professional relationships at the outset, both the head and maths lead were open to any advice or support, and always willing to find dedicated time and space to meet to ensure TSM was prioritised in school.

Making changes
With a carefully planned programme, Louise aimed to develop the confidence and expertise of the maths lead, who quickly became more self-assured. Evaluation and monitoring activities were modelled and initially co-delivered. Over time, Louise shifted from 'coach' and the maths lead took the reins, sharing evaluations and suggesting next steps.

The school decided to change the source of its maths planning to a different scheme, and this was the vehicle for much of the TSM work. Planned tasks to upskill the maths lead – learning walks, book scrutinies, and face-to-face CPD sessions – all worked towards implementing the new scheme effectively.

Next steps
With new knowledge, the maths lead can now support staff in embedding the new maths scheme. Through TSM, other foci have emerged; in particular, the use of representations and models, which is a focus for the next academic year.

The school now feels ready to return to teaching for mastery, and has enrolled on a Development Work Group in 2024/25. Transition discussions have taken place, to not only ensure the school understands its next steps, but also so the Mastery Specialist who will work with the school understands the journey it has been on.

> *My school has benefitted massively from the enhanced support offered. Staff felt it was a small tweak but has made a huge difference to teaching and learning in our school.*
>
> **Targeted Support for Mathematics participant**

Local Leaders of Mathematics Education (LLME)

Local leaders of mathematics education, or LLMEs, lead all Maths Hubs work at a local level.

They are teachers and education professionals from all phases, and most are current classroom practitioners who divide their time between their school and their Maths Hub. LLMEs may be Work Group Leads, Cohort Leads or Community Leads depending on the type of professional development they are leading.

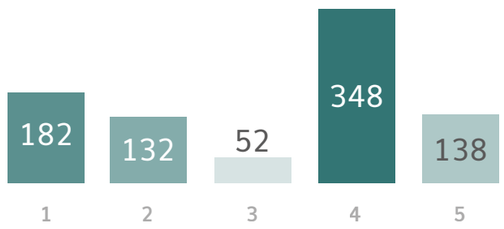
852

LLMEs starting development programmes in 2023/24

To sustain the number of LLMEs required to lead the dozens of Network Collaborative Projects (NCPs), and therefore thousands of Work Groups, run nationally every year, new LLMEs are recruited annually. LLMEs are supported in their work by their local Maths Hub Leadership and Management team, and through participation in one or more of the NCETM's LLME development programmes: Mastery Specialist Programmes for teachers in primary, secondary and FE, the School Development Lead Programme, and the Professional Development Lead Programme. In 2023/24, there were over 1,500 active LLMEs leading Maths Hubs activity, and more will join in the coming years.

As well as leading Work Groups and programmes, LLMEs are brought together in communities of professional development, particularly at a hub level. Collaborative practice and evidence-based research underpin their own professional learning, and they meet regularly to consider how to develop their expertise in leading maths subject knowledge and pedagogy, maths professional development, and maths school development.

In 2023/24, the initial cohort of Post-16 GCSE and FSQ Mastery Specialists completed the first year of their programme, and hundreds of new Primary Mastery Specialists and Secondary Mastery Specialists began leading their own Work Groups.



LLMEs starting development programmes in 2023/24

1 Primary Mastery Specialists
2 Secondary Mastery Specialists
3 FE Mastery Specialists
4 PD Leads
5 SD Leads

01 An LLME's timeline – the journey to Assistant Maths Hub Lead

1999 Qualified as a primary teacher

2009 Achieved a master's degree in education

2011 Changed teaching phases to take on a role as a secondary teacher at The Romsey School, Hampshire

2016 Participated in a Mathematical Thinking for GCSE Work Group with Solent Maths Hub

2017 Became Work Group Lead for Mathematical Thinking, and ran it for the next three years

2018 Completed the NCETM Professional Development Lead Programme

Started training as a Mastery Specialist

2019 Became Assistant Maths Hub Lead for Solent Maths Hub

2022 Started as a maths teacher at St Mark's C of E School in Southampton, and is now involved in writing a full mastery curriculum for all pupils from Reception to Year 11

Lisa Duell
Assistant Maths Hub Lead (AMHL), Solent Maths Hub

Lisa Duell is an Assistant Maths Hub Lead (AMHL) at Solent Maths Hub. She qualified as a teacher in 1999, but considered leaving the profession before she began to lead activity with her local Maths Hub, and felt inspired by the chance to lead the maths professional development of colleagues in her own school and beyond.

'I first became involved with Solent Maths Hub in 2016. Being part of the Mathematical Thinking project allowed me to collaborate with teachers from other schools and to think about maths pedagogy in a different way. I became inspired and was really passionate about everything I was learning. At the end of the project, the Work Group Lead mentioned that she was not able to run the group next year and asked if I might be interested in taking it on. This was the start of my LLME journey.

I had been teaching for around 12 years and was feeling uninspired; I wasn't the best teacher I could be. I was at the point of considering leaving the profession. Fortunately, that was when things changed. The training I received as part of the NCETM's Professional Development Lead Programme was fabulous, and I started to see changes in my pupils' outcomes.

Running the Mathematical Thinking project gave me a real sense of worth. I felt I was making changes in maths education beyond my own school, and finally felt that my experience was being used and shared. I wanted to do more with Solent, so I signed up to become a Mastery Specialist. During my training, a position opened for an AMHL. I was fortunate enough to work in a school that valued my work with the hub, and supported my application. I now spend one day a week supporting the hub's secondary LLMEs and Mastery Specialists.

Career progression can feel limited for teachers who don't want to become heads or senior leaders. I found that being an LLME provided what was missing in my career journey. Being involved with Solent Maths Hub has kept me in teaching, and I am now embarking on my twenty-sixth year in the profession. I love that I am still learning new things!'

02 LLME participant: School Development Lead Programme Q&A

Jo Cronin
Primary Assistant Maths Hub Lead, Boolean Maths Hub

The School Development Lead Programme is for teachers and other education professionals working with school and subject leaders to improve maths teaching and learning in a school or group of schools other than their own. Participants design and lead their own collaborative maths school development initiative.

Jo Cronin participated in the programme during 2023/24. A former Local authority maths consultant, Jo is now a freelance maths adviser and Primary Assistant Maths Hub Lead for Boolean Maths Hub. As an LLME, she leads on Targeted Support in Mathematics (TSM) for the hub, and delivers a range of Work Groups.

What made you want to participate in the School Development Lead Programme?
I wanted to engage in some high-quality CPD that met my own needs, challenged my thinking, and would enable me to deepen my understanding of what makes an effective school development lead. My motivation was also to strengthen my ability to support other LLMEs as they take on new roles as Intensive Support Partners now the hub's TSM work is growing.

What did you learn by taking part in the programme?
The programme made me reflect on who is involved in school development; now, I always ensure that senior leaders as well as maths leads are actively involved in the whole cycle of any school development work. Senior leaders need to be actively involved from the start and proactive all the way through.

My awareness and improved knowledge of the EEF's implementation cycle ensures my investigative work during the 'Explore' phase is now more focused, and I appreciate the value of not underestimating the importance of, or rushing through, the 'Prepare' phase. I ensure that I work alongside leaders and listen, to enable me to understand the challenges they are facing within their school context. In turn, I become a critical friend to the leadership team, to help them to see and reflect on their current practice.

What did your school development initiative focus on?
I worked with school leaders in a priority education investment area (PEIA) school in our region to strengthen their understanding of the principles of good maths teaching. This involved working with teachers to support the successful implementation of the Reception and KS1 and KS2 Mastering Number Programmes to secure factual fluency and reasoning, with particular attention paid to the development of teacher subject knowledge and pedagogical approaches.

Why would you recommend the School Development Lead Programme?
I have thoroughly enjoyed participating in the SD Lead Programme this year. It has enabled me to really reflect on my school development work to date, and consider why some of my previous work perhaps did not achieve the outcomes I hoped for, and to learn from this. Being able to collaborate with others and articulate my thinking to clarify my understanding has also been really valuable. A great CPD package!

03 LLME leading hub activity: Developing Core Maths Pedagogy Q&A

John Petry
Assistant Maths Hub Lead (Post-16), London Central and North West Maths Hub

John Petry is Lead Practitioner at Parliament Hill School, a high-achieving secondary in Camden, North London. As Assistant Maths Hub Lead (Post-16) at London Central and North West Maths Hub, John has a particular interest in Core Maths and, in his role as an LLME for the hub, leads a Developing Core Maths Pedagogy Work Group.

What does your Developing Core Maths Pedagogy Work Group aim to do in schools and colleges?
The Work Group aims to support teachers of Core Maths to develop their pedagogy and subject knowledge, providing opportunities for collaboration, planning and experimentation. It also allows teachers to share ideas and resources, and to develop approaches that support the open-ended problem-solving skills that Core Maths students need to develop. My recent Work Groups have focused on how to use different reading approaches to support students to interpret challenging contextual information, which is a feature of Core Maths problems. We have also looked at questioning styles and ways to check for understanding.

How do you run your Work Groups?
The first session gives participants the opportunity to share their understanding of and beliefs about Core Maths teaching, which helps me understand what they need from the professional development. We also co-plan a lesson together and, in the second session, participants have the opportunity to see this lesson taught to a group of students. This always provides a very rich and powerful discussion, which has the capacity to change teacher beliefs and practice in the long-term. At the end of the year, participants share the practices they've implemented that have had the greatest impact in presentations, which provides valuable insights for the entire group.

What has been the impact of the Work Group in your hub area?
Participants have returned year after year, and new ones have joined, expanding the Core Maths community. Many of the teachers were the sole Core Maths practitioner in their departments, and they report that they feel that they have a support group for teaching the qualification. Experienced teachers in larger departments share that they feel challenged to evaluate how they teach the course and are able to focus on ways that they can improve their teaching and develop others in their departments. Recent participants have reported that they had a better appreciation for how to use and deliver the resources explored in the sessions, and that their students have benefited from them.

Research and Innovation Work Groups (RIWGs)

Research and Innovation Work Groups (RIWGs) take place in all 40 Maths Hubs across the network, responding to local needs and national issues in maths education.

Through teacher-led research, these Work Groups aim to rigorously explore new approaches to teaching and learning in all phases. They provide opportunities for teachers to design and trial new ideas in the classroom and share their results widely, to influence future work across the Maths Hubs Network. This year 997 schools have taken part in RIWGs across a range of different themes, including mixed-age teaching, oracy and fluency at KS3.

RIWGs are characterised by three types of professional culture:

Research culture: Teacher research is at the heart of every RIWG. The work is also often informed by existing research and published papers.

Innovation culture: The emphasis is on trying out new pedagogical approaches and ways of working, or finding new ways of using existing ideas.

Collaborative culture: Working together and learning from each other's experiences is promoted at each stage of the RIWG.

983

Schools participating in RIWGs

108

Research and Innovation Work Groups

01 Working with SENDCOs

Alan Edmiston
Research and Innovation Lead and RIWG Lead, Origin Maths Hub

Alan Edmiston is the Research and Innovation Lead (RIL) across all the RIWGs in the Working with SENDCOs theme. Building upon work done previously, this year the theme has been refined to focus on improving SEND provision in mainstream schools. There were nine RIWGs within this theme, each led by an expert practitioner, exploring slightly different questions, such as:

- How can we support school leaders with the tools and resources they need?
- How might a graduated approach support pupils with SEND?
- How can SENDCOs and maths leads work in partnership?

> ***These RIWGs are led by a wonderful group, composed of SEND experts and experienced Mastery Specialists, and each has so much to offer schools across the Maths Hubs Network.***

As well as being the RIL, Alan also led his own RIWG with the research question, 'What can we learn from colleagues in special schools?'. At the NCETM's Influence Event in July, which is an annual celebration of what has been happening across all RIWGs, Alan and his colleagues shared the outcomes of their work.

Alan's group noticed how special schools use education, health and care plans (EHCPs) to really understand their pupils, which helps them to design suitable learning pathways. Adaptive planning is key, as well as setting targets that focus on cognition and communication to support maths learning. He emphasises the importance of mainstream schools fostering relationships with specialist settings, and has started to establish a network of special schools who can support with outreach.

> ***Mainstream schools can get help from our colleagues in special schools, as we often have pupils who are not yet in the correct provision. Expertise can be very near or only a virtual call away.***

Several RIWGs in this theme found that mainstream maths schemes often do not support the needs of SEND pupils. One group explored how best to support school leaders to adapt teaching, and develop confidence in moving away from prescriptive schemes to provide bespoke support.

> ***Mainstream settings have been focusing on the curriculum and not the pupil. We need to link learning to the reality of their lives, introducing concepts in a way that hooks their interest and makes it relevant, interesting and non-threatening. Once engaged, that maths can unfold and you can adapt, steer and scaffold in response to their engagement.***

In 2024/25, this important work around SEND will continue as part of a new LLME Development RIWG, which has been commissioned to address this national research question: How can an expert LLME's advocacy for SEND in mainstream settings with their peer LLMEs have an impact on the hub's provision in this area?

02 NEW: RIWGs – Secondary

Ben Johnson
Assistant Maths Hub Lead and RIWG Lead, East Midlands South Maths Hub

Ben Johnson has been leading an RIWG with the aim of establishing ways of supporting overseas teachers in their first year of teaching maths in England. His rationale for this work came from the number of schools in his local area that were finding it increasingly hard to fill maths teacher vacancies, so began to recruit from other countries. There was a need to ease this transition, from improving subject and pedagogical knowledge to adapting to cultural differences in teaching.

He has been working with 16 teachers from seven countries across two MATs.

An overarching focus of the Work Group has been to develop a supportive network of new and established overseas teachers.

> *It has been wonderful to see how the network has provided a platform for the teachers to explore issues with peers who can really empathise with the challenges that they are facing. The space to question, reflect and hear different perspectives has been particularly important for the participants, to feel more reassured and confident about adapting to teaching in England.*

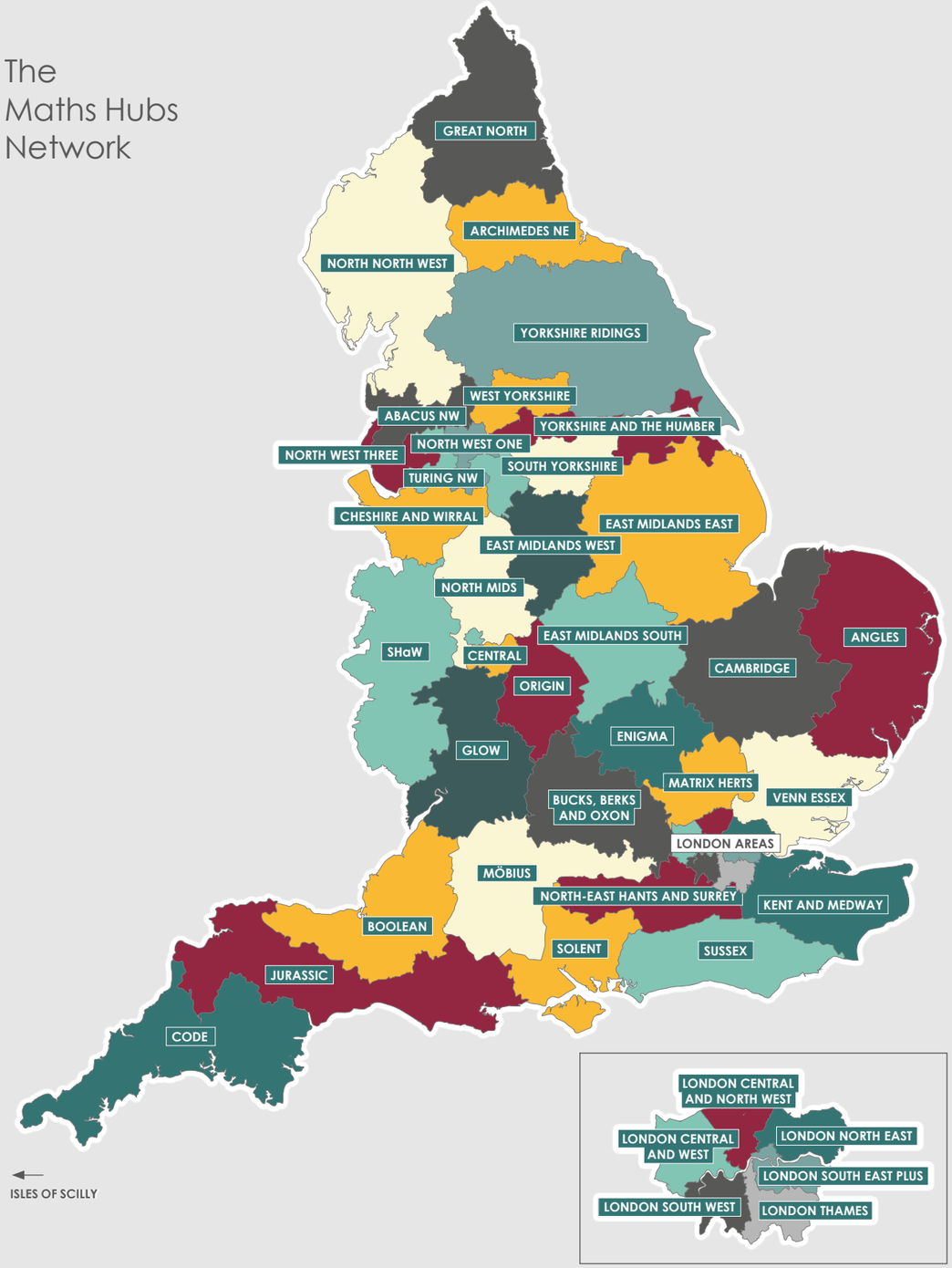
Together they explored the barriers they were facing, such as language and the use of technology, and shared ideas of how to overcome these. Ben noted that having input from more established overseas teachers was highly valued, and participants were creating their own informal meetings outside of the RIWG.

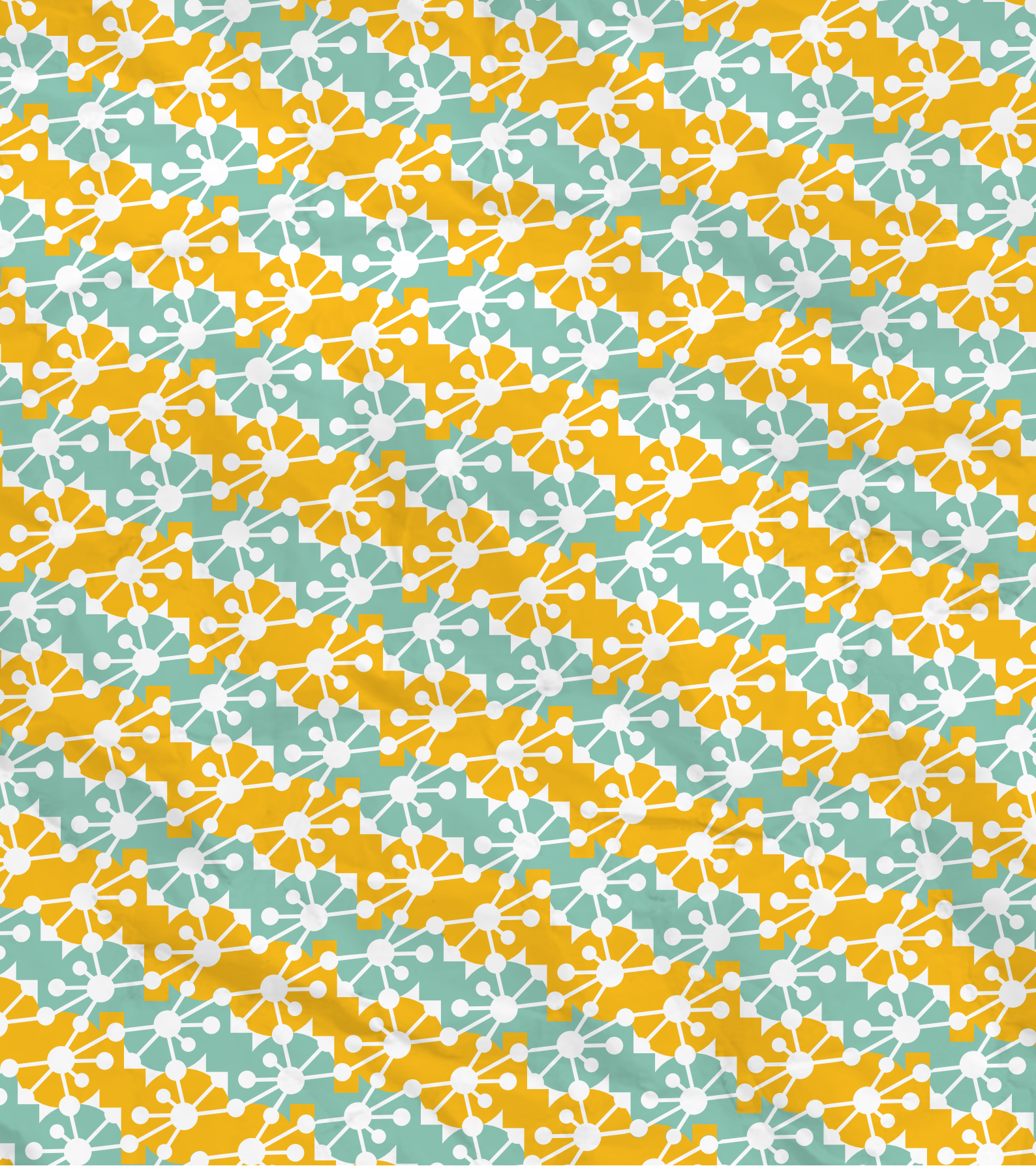
> *We hope that it will increase the quality of teaching and engagement with the local Maths Hub and improve the chances of participants continuing to teach maths here in the long-term.*

Ben facilitated the opportunity for the teachers to observe maths lessons, delivered by a Mastery Specialist, which increased their awareness of the most commonly-used methods, language and representations. His survey results showed participants experienced an increase in confidence in teaching in England, and in planning a sequence of lessons.

Next year, Ben will be working alongside a second hub to explore the needs of – and ways to support – overseas teachers, as part of an invitation to innovate commissioned by the Secondary Strategic Leadership Group.

The Maths Hubs Network





Funded by

Department for Education

The NCETM is led and delivered by Etio (formerly Tribal Education Services), with MEI as a key partner.