

BBO MATHS HUB NEWSLETTER

Term: Spring | Issue 4 | Date: 8th February 2022

NEWS FROM THE BBO MATHS HUB TEAM

With the new year well underway and the majority of our Work Groups in full swing, we have been turning our attention here at the BBO Maths Hub to our upcoming **BBO Conference** which this year takes place on **28 April** with the theme of **Enhancing your Curriculum**. Once again we will be holding the event **online** giving the opportunity for as many maths professionals as possible to take part. We are incredibly excited about the line up of speakers we have secured this year and can't wait to share these with you over the next few pages. The schedule for the day will soon be finalised and bookings will then be opened but in the meantime, if you would like to register your interest in attending, please email us at info@bbomathshub.org.uk and you will be added to our waiting list to be informed as soon as the event goes live.



Also in this edition we have articles from our Primary Work Group Lead, Emma Parr and our Secondary Lead Jo Walker which we're sure you will find interesting, plus details of our programmes that are still available for booking, including our Years 7-11 Coherence Work Group, cohort 2 of our SKTM for Secondary Non-Specialist Teachers and the relaunch of our Core Maths Pedagogy Work Group, all offering fantastic opportunities to get involved in some of the **FREE CPD** on offer here at the Maths Hub.

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**BBO Maths Hub
Conference - Enhancing
Your Curriculum
28 April 2022**



**Gareth Metcalfe
I See Maths**



**Debbie Morgan
NCETM**



**Dr Ems Lord
NRICH**



**Rebecca Donladson
NCETM**



**Tony Cotton
ATM**



**Gaynor Bahan
NCETM**



**Jean Knapp
NCETM**



**Mary Briggs
EY Specialist**

REGISTER YOUR INTEREST

BBO MATHS HUB CONFERENCE 2022 - APRIL 28 9am - 4pm ONLINE

The theme of this year's conference is "Enhancing your Curriculum". We have arranged a wealth of speakers from different backgrounds and organisations covering all key stages. The conference is open to any teacher working in a state school in our area and is totally free to attend.

We hope that you decide to join us on Thursday 28th April 2022. To find out more and **express your interest in this event please email us at info@bbomathshub.org.uk** so that we can contact you to sign up when the programme has been confirmed.

Please see below for the speakers we have so far confirmed with some information about them and the topic they will be presenting.

Key Note Speaker : Gareth Metcalfe from I See Maths - 'Building Children as Mathematical Problem-Solvers'

This session will explore how to give all children success in problem-solving. We will see how to direct thinking on the structure of different questions, moving the focus from finding answers to understanding the process of problem-solving. We will look at how to introduce tasks so children have initial success, then gradually increase the challenge. Then, we will see how children can make connections between different tasks. A practical, thought-provoking session!



Gareth Metcalfe, the Director of *I See Maths*, provides training and resources that help primary school children to build a deep, conceptual understanding of mathematics. Gareth is the author of the *I See Reasoning* and *I See Problem-Solving* resources, helping schools to put reasoning and problem-solving at the heart of the maths curriculum. Gareth is an NCETM CPD Standard Holder, he leads maths CPD nationally and he is a current practitioner, teaching in a range of schools across the age-range.

Break out Sessions – You will be able to choose three sessions, one from each of the slots (tbc)

Tony Cotton author and member of ATM - 'Social Justice in Mathematics'

Tony will reflect on the impact of historical and contemporary notions of social justice on his teaching in schools and universities, exploring what we might mean by the term 'social justice' and offering activities and pedagogical practices which might be argued to be 'socially just'. You will also get to do some mathematics!

Dr Debbie Morgan CBE Primary Director NCETM – 'Latest Primary Updates'

Hear from Debbie about the latest updates in Primary on Curriculum prioritisation and mastering number with children in the early years and key stage one.

Dr Ems Lord from Nrich – 'Using Tasks as Part of the Learning Experience'

Dr Ems Lord will look at how tasks on the nrich website can be used within lessons to develop a deep understanding of how mathematics can be developed. She will run two sessions, one focusing on Primary activities and a secondary focusing on Secondary.

REGISTER YOUR INTEREST

Mary Briggs from Oxford Brookes University - 'Space the Final Frontier'

An opportunity to explore and discuss how spatial reasoning is developed in the early years.

Gaynor Bahan and Rebeca Donaldson from NCETM - 'NCETM Checkpoints: Supporting Understanding at KS3'

In this session, we'll explore what Checkpoints are and how they can be used to support secondary teachers with their own horizon knowledge, whilst diagnosing the learning that pupils bring with them from KS2. We'll reflect on how they might be incorporated into curriculum plans and learning, way beyond Covid recovery!

Jean Knapp - 'Maths Games to Support Number Sense'

There has been much research into the benefits of using Maths Games to develop Number Sense and Calculation to great effect. Higher level thinking skills, motivation, engagement, and confidence are also cited as some of the key benefits.

This session aims to look at a collection of maths games to support number sense, possible extensions and supports to maximise learning impact.

Kristin Coldwell from AMSP - 'Encouraging Uptake of Mathematics Post 16 during KS4'

Kristin will explore activities which could be incorporated into KS4 lessons to increase the uptake of mathematics beyond GCSE.

Jo Walker from BBO Maths Hub - 'Developing Mastery at KS5'

In this session we will look at applying the mastery pedagogy in KS5 and discuss how this can be planned for to create a deep understanding of the concepts covered.

Kelly de Santis and Ally Johns from GLF Schools - 'Subject Leadership in Primary Mathematics'

An opportunity to consider how the current landscape impacts on the development of your mathematics curriculum in primary schools. We will explore how to lead and support staff to successfully implement and sustain your vision for the teaching and learning of mathematics in your schools.



[REGISTER YOUR INTEREST](#)

The Obsession of a Year 2 Teacher

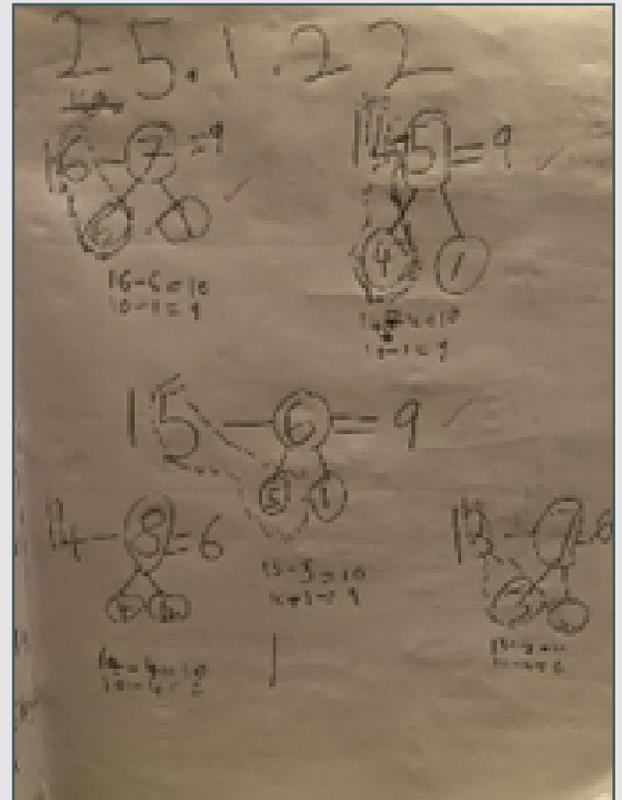
PRIMARY

Emma Parr Primary Work Group Lead, Cholsey Primary School

I am now in my 5th year of delivering workgroups of various kinds. There is one thing that I can guarantee always happens after I have introduced myself and confessed to being a year 2 teacher. 'Can I have a quick word at the end of the meeting?' So... what is it they would like a quick word about? Bridging. Unfortunately, there are no quick words about bridging. As you look through the curriculum and the development of addition and subtraction approaches, bridging is there at the heart of so much of it. I don't pretend to be getting it right all the time but here are my musings on the matter.

Why is it so hard?

The learning trajectory of using bridging as a strategy feels different to many other learning trajectories we go through in EYFS or KS1, and it has taken a lot of consideration and discussion for me to figure out why. When constructing a coherent journey through any area of maths we strive move through with the smallest steps possible so that all children stay on our journey as we seek to achieve true depth of understanding. Even bridging with just two one-digit numbers is the application of facts learnt through deep conceptual understanding of the number system and its structures. Even when thorough understanding is built of, number bonds to 10, number facts for all one-digit numbers, a secure understanding of additive relationships and the place value system to 2 digits, children then need to apply all of this knowledge and understanding in quick succession in order to complete the calculation. And we expect our 6 year olds to do it! Of course, this is what we are aiming for with all conceptual understanding of the number system; that it will be used alongside reasoning and factual fluency to calculate and problem solve effectively. But this feels like the first time it gets really meaty for our 6 year olds.



What makes it a little easier?

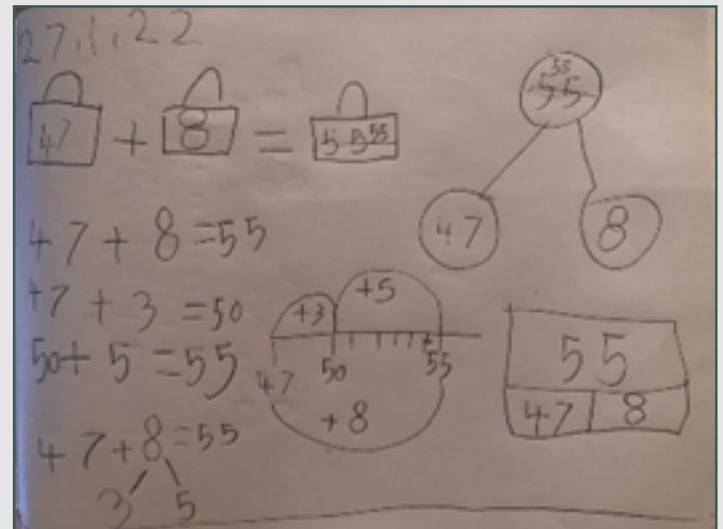
I cannot stress strongly enough how the improvement in our children's understanding of composition of number has improved success in mastering bridging as a concept. Embedded use of subitising activities has transformed the children's ability to see numbers within numbers and has started them on the journey towards partitioning numbers confidently and with ease. I cannot help but be excited when I observe Foundation Stage and Year 1 teaching using the Mastering Number programme. I can see so clearly how the concepts being revealed to the children through deliberately selected manipulatives and carefully designed pictorial representation are building such firm foundations of number for these children. I know that some FS teachers have been concerned about the pace the children are progressing, feeling that perhaps it has been too slow. As a year 2 teacher I see the value of true, deep understanding of the composition of number 1-10. Without this, children will never really move beyond calculating by counting.

The Obsession of a Year 2 Teacher (cont.)

PRIMARY

Emma Parr Primary Work Group Lead, Cholsey Primary School

The Curriculum Prioritisation materials have also played a large part in making the journey easier this year. The coherent journey through the theme helps you as a teacher to see how to grow the children's understanding in small steps, just as the Professional Development spines did. However, what I particularly appreciate about the curriculum prioritisation materials' approach, is that the theme has been spilt across different units. I always felt that calculating up to 2 2-digit numbers where bridging was required was too far to go in one unit, but I was never sure where was best to pause and to come back later in the year. Units 1-4 all build to a certain point and then a break is taken until the theme is picked back up in unit 8. I am not going to tell you exactly how it is split up; I will let you enjoy that lightbulb moment if you haven't discovered it yet.

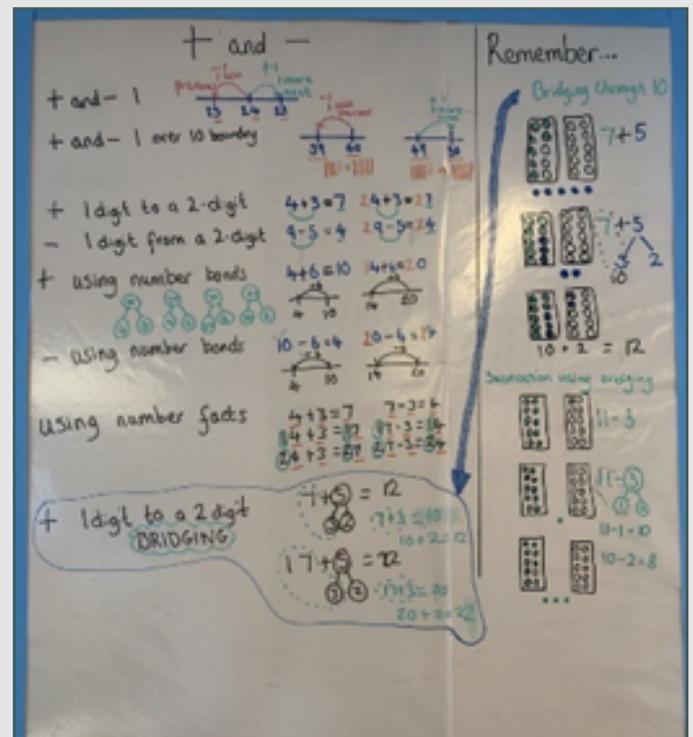


What the Curriculum Prioritisation materials, along with the PD spines do impeccably of course is select the perfect representations to expose the structures necessary at any given point in the learning. I can't believe that there was once a time that I taught bridging without a tens frame!

Keeping my working wall up to date has also helped us this year. It is something that I have always found to be a bit of a chore to be honest but this year I have really seen the value in it, and when it becomes a useful tool for the children it ceases to be just another job on the end of a long list, but rather an invaluable part of the lesson.

The good news...

It is not all on year 2 to get it right. I used to feel that if every child hadn't this strategy down to a fine art, or couldn't mentally calculate in this way then I had failed. However, the Ready to Progress Criteria published in the Mathematics Guidance of June 2020 makes it very clear that this year 2 addition and subtraction strategy (2AD-2 and 2AD-3) doesn't need to develop into instantly recallable facts, or be quickly derived, until year 3 where they appear in the number facts strand (3NF-1).



The Developing Mastery Journey ...

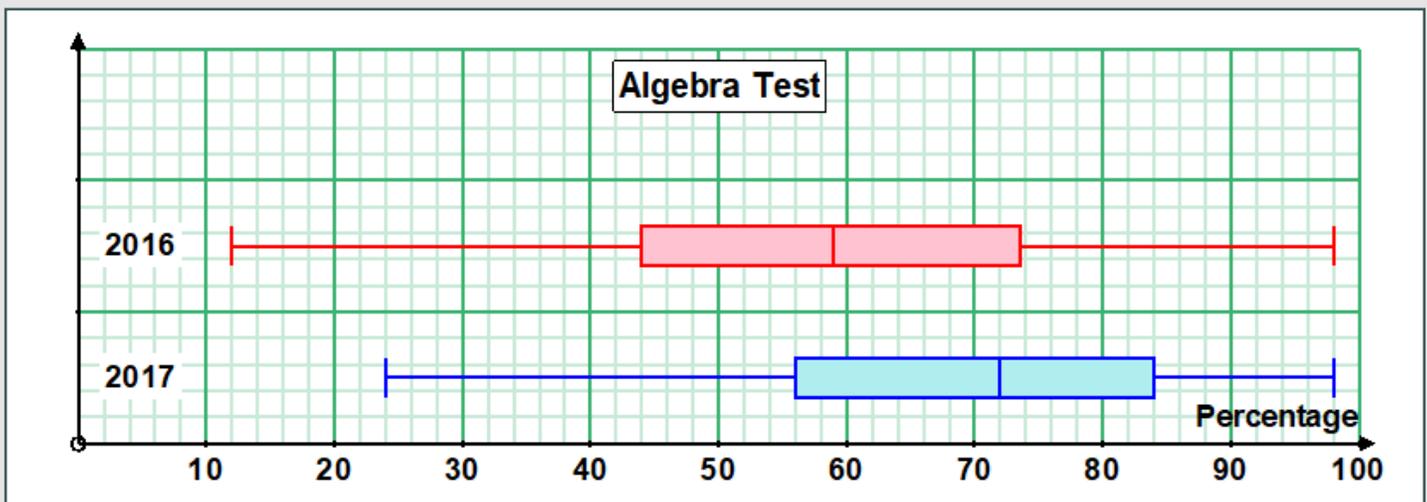
SECONDARY

Jo Walker, Assistant Maths Hub Lead, Wycombe High School

We have been developing a mastery approach for learning mathematics for a number of years and I would say that I have learnt a lot about mathematics in the process but the change in our students has been interesting to watch.

The initial decision was purely based around our students: Do we feel that we provide the best mathematical education that we can for them? We knew that Ofsted were very happy, we knew that our parents were happy and we also knew that our schools results compared very favourably against equivalent schools but students are more than data. Could our students use their mathematics effectively in their chosen careers? Could they think mathematically and adapt what they had learnt to new circumstances? Did they have the depth of understanding needed for careers involving STEM? Although we knew our students did successfully go into these careers we were also realistic in knowing that many of our students had a surface level of understanding so they could identify when to apply their learning and could do so accurately but when asked to apply this to a more unusual questions they struggled.

Our department made the decision to develop a mastery approach. This did not mean do what they do in Shanghai or Singapore, we are realistic, we know that the way education is considered in these countries is not the same as here, no one there would feel it was OK to say I cannot do maths. We also know that our school is ours, it has its own ways of working, the students are ours, they are individuals and have their own needs so we adapted what we learnt about the mastery pedagogy to our school. However we did not want to put time and effort into an initiative which was not having the impact we would have liked, so from all the units we developed we chose two to have the same content as the previous year but just be taught in a different way. We could then compare the results with the previous year which had comparable intake data.



We found that the average result was higher than the previous year and that the tail was a lot less and much closer to the rest of the cohort, but as I said data was not everything. In lessons the students were more engaged and more positive about mathematics, they were much more mathematically literate which enabled them to explain their reasoning more accurately and easily. The students readily discussed their ideas, were more willing to give challenge questions a try, they were happy to make mistakes – understanding that this is just how they learn more and most importantly they were becoming more successful when solving more complex problems.

Jo Walker, Assistant Maths Hub Lead, Wycombe High School

All of this has encouraged us to continue to develop our mastery approach, we are now at a stage where this is embedded to the current year 10, with some lessons being taught in year 11 and is also being developed in year 12 and 13.

As an NCETM trained mastery specialist I have worked with many different types of schools over the last few years (upper schools, grammar's, comprehensive schools and one of our hospital schools) and all have developed a mastery approach that suits their school. These are a couple of quotes that they have recently given me :

In 2014, we learnt about 'Singapore Maths box methods' through Maths conference. As we loved the principles of teaching & learning Maths by different methods e.g. using Bar model (visualisation) and make connection, when possible, we implemented this in Year 7 at Baylis Court School. In the following year, I had opportunities to observe first few Mastery Lessons at Wycombe High School through the Maths Hub. Since then, we have been getting training and working closely with Maths Hub to develop Teaching Mastery. It's great that we not only improving our GCSE results and teaching quality in our department but also widen opportunities to train other teachers from other schools. Our students have deeper understanding and better written and oracy skills on explanation and link topics together. Learning from mistakes, talking about Maths, using different ways to look at problems are the learning atmosphere at Baylis!

Yvonne Poon HoD Baylis Court School, Berkshire

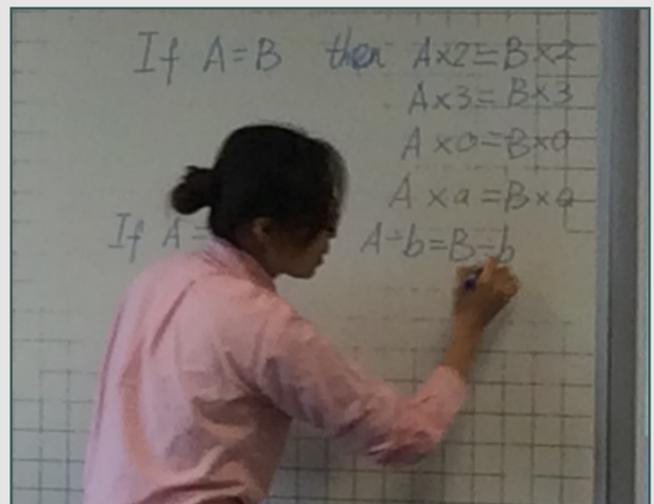
Our initial interest in the developing teaching for mastery programme came at a time when we were focusing on re-writing our KS3 curriculum. Working within a collaborative department, the maths team were willing to trial and implement new ideas so participating in the work group was an excellent opportunity for us to continually improve our practice with support from our mastery specialist both in discussions but also opportunities to observe and receive feedback on our curriculum plans and lessons. We continue to be involved with establishing ideas from mastery within our maths curriculum with a focus on making connections across the topics, improving opportunities for students' reasoning and developing mathematical thinking, and thinking carefully about the sequencing of our tasks and curriculum.

Sarah Gilbert HoD The Cooper School, Oxfordshire

Further research like the 2017 EEF report have also shown that the pedagogies on which teaching for mastery is based really support our disadvantaged students and are effective in closing the gap.

Over the last few years there has been a lot of investment from the government into developing this style of teaching, the DfE funds NCETM to provide the training via our hub to support any state funded school in our area who wants to develop a mastery approach. It is a journey.

The first year is Developing where a mastery specialist teaches two members of the department the pedagogy behind mastery and helps them embed this into their practice as well as supporting these two teachers as they start to develop the skills of the department.



The Developing Mastery Journey ...(cont.)

SECONDARY

Jo Walker, Assistant Maths Hub Lead, Wycombe High School

The second year has two elements, Embedding is where the mastery specialist continues to work with the two teachers as they work with the department to ensure that all teachers can plan and teach using the pedagogy, Embedding and Sustaining is where two members of the department get to meet with other schools on this journey, to share expertise and advice as they grow together. From year 3 and beyond the Embedding and sustaining groups is there for support. The Developing and Embedding come with money towards cover costs. All groups like all of the training we offer is free to attend and all of the people running these groups are NCETM trained mastery specialists with PD lead accreditation.

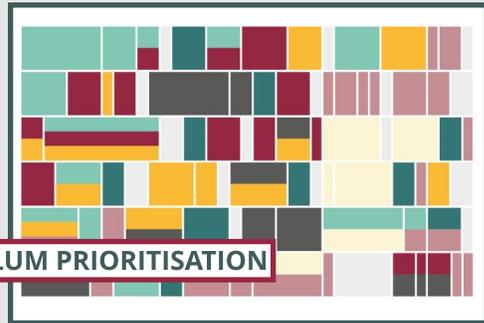
If you would like to discuss this with me please contact the maths hub. If you would like to know more or apply for a place in the next Developing work group (starts in September) then please visit <https://bbomathshub.org.uk/secondary-mastery-workgroups/>

Note that we will be running three taster days in the summer term where teachers can see a mastery lesson, try out some of the pedagogy and ask questions. Dates for these will be released in the next Newsletter.

NCETM RESOURCES - PRIMARY AND SECONDARY



SUPPORT FOR PRIMARY TEACHERS



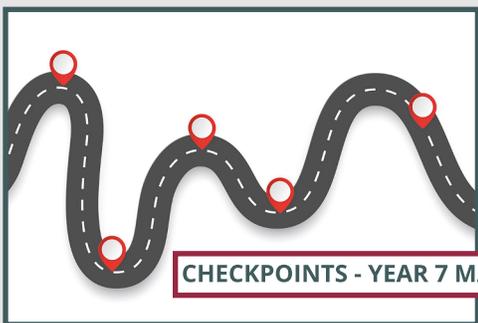
PRIMARY CURRICULUM PRIORITISATION



SUPPORT FOR SECONDARY TEACHERS



KS3 KEY IDEAS EXEMPLIFIED



CHECKPOINTS - YEAR 7 MATHS ACTIVITIES

SECONDARY & POST 16 CPD OVERVIEW

What is your department's development goal?	What professional development opportunities are available? (Face-to-face and online collaboration with other teachers and experts)	What is the professional development suitable for?	What supporting resources are available? (High quality materials from the NCETM)
Supporting Year 7 teachers to embed the new primary curriculum	Developing and Embedding Work Group Year 7 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 7 maths including levels of disordered ability	Supporting Resources Supporting Resources
Supporting Year 8 teachers to embed the new primary curriculum	Secondary Training for Embedding Work Group Year 8 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 8 maths including levels of disordered ability	Supporting Resources Supporting Resources
Supporting Year 9 teachers to embed the new primary curriculum	Secondary Training for Embedding Work Group Year 9 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 9 maths including levels of disordered ability	Supporting Resources Supporting Resources
Supporting Year 10 teachers to embed the new primary curriculum	Secondary Training for Embedding Work Group Year 10 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 10 maths including levels of disordered ability	Supporting Resources Supporting Resources
Supporting Year 11 teachers to embed the new primary curriculum	Secondary Training for Embedding Work Group Year 11 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 11 maths including levels of disordered ability	Supporting Resources Supporting Resources
Supporting Year 12 teachers to embed the new primary curriculum	Secondary Training for Embedding Work Group Year 12 CPD Day Secondary Training for Embedding Work Group	Anyone who teaches Year 12 maths including levels of disordered ability	Supporting Resources Supporting Resources

Primary Work Groups and Events

The Maths Hub Programme has PD opportunities for all teachers at all stages in their careers and across all phases. Below is a summary of the FREE development opportunities that are still available for primary teachers in 2021/22. Follow the 'More Info' links for further details on the NCETM website, sign up via our website using the 'Book Now' links, or contact info@bbomathshub.org.uk to discuss the best programme for you and your department.

All of our Work Groups are free.

Specialist Knowledge for Teaching Mathematics - Early Years Teachers

This Work Group is designed to support Early Years teachers in developing specialist knowledge for teaching mathematics, thus enabling them to understand, teach and support pupils in maths in the classroom. These programmes are designed for individuals who would like to develop their specialist knowledge for teaching maths to three to five years olds. This may be particularly relevant for NQTs, teachers that have moved phases, or teachers that have not received maths-specific training.

[MORE INFO](#)

Aylesbury Cohort

This programme will be delivered over four sessions in a mix of online and face-to-face provision at Green Ridge Primary Academy, Aylesbury. Book now to secure your place

[BOOK NOW](#)

Mastering Number Schools: 2021-2022: Leadership Event

If your school is currently taking part in the innovative Mastering Number programme, the BBO Maths Hub would like to invite someone who is in a position to support the development of mathematics learning and teaching across your school – likely to be a maths subject leader and / or member of SLT - to an online leadership session on the 14th of February. Please note that teacher leaders need not attend unless they are subject leaders.

Subject leaders / members of SLT who attend will:

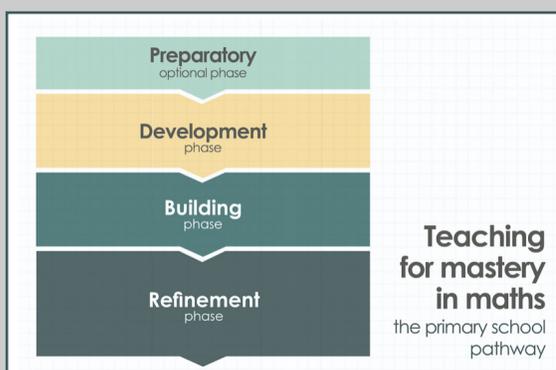
- Gain a deeper understanding of the potential of Mastering Number for your pupils
- Explore an exemplar overview of Mastering Number to convey your school approach which can be adapted for your own context
- Consider next steps for the operational and strategic implementation of Mastering Number from a leadership perspective



Click the button for further details and to reserve your place via Eventbrite :

[BOOK NOW](#)

Primary Mastery Readiness and Developing Teaching for Mastery Programmes



If you or your school are interested in the primary Teaching for Mastery programme we are now accepting applications for 2022/23. Our website has information on how to start the Mastery journey via either the Mastery Readiness or the Development programme.

Click on the 'More Info' button to go to the Primary Mastery page which will help you decide which option is best for your school at this stage. Links to the application forms can also be found here.

[MORE INFO](#)

Cross-Curricular Work Groups

PRIMARY

SECONDARY

The Maths Hub Programme has PD opportunities for all teachers at all stages in their careers and across all phases. Below is a summary of the FREE development opportunities that are still available for both primary and secondary teachers in 2021/22. Follow the 'More Info' links for further details on the NCETM website, sign up via our website using the 'Book Now' links, or contact info@bbomathshub.org.uk to discuss the best programme for you and your department.

All of our Work Groups are free.

Years 5-8 Continuity

Work Groups in this project aim to strengthen the transition from primary to secondary school by focusing on curriculum and pedagogical continuity over Years 5 to 8. Following the disruption to education caused by the Covid crisis, this transition is more crucial than ever.

A central aim is the promotion of cross phase communication between teachers to address issues of maths curriculum and pedagogical transition as distinct from pastoral considerations. A key feature will be understanding how best to prioritise key aspects of the curriculum to help ensure pupils have mastered the fundamental understanding and skills they need to underpin their progression through upper Key Stage 2 and into Key Stage 3.

Participants should be teachers of Years 5 to 8 in primary, secondary, middle school and all-through schools with some responsibility for curriculum development, e.g. maths leads / heads of department.

Linked 'families' of schools are encouraged to take part: ideally teachers from secondary schools and their associated primary schools will work together.

The BBO Hub plans to run a **final cohort of this group after Easter** and would welcome interest from schools who wish to take part. If you would like to register your interest please email us at info@bbomathshub.org.uk.

[REGISTER YOUR INTEREST](#)

What are the benefits?

- Deepen your knowledge and understanding of the curriculum across KS2 and KS3 and the expectations of pupils at the end of each key stage.
- Understand the approaches which will support pupils as they move from KS2 to KS3.
- Make use of common approaches, representations and language across phases.
- Develop collaboration between primary and secondary colleagues on issues of curriculum and pedagogy.
- Understand what each year group needs to be ready to progress.
- Consider the importance of, and how to achieve, consistent mathematical vocabulary.
- Consider, for primary teachers, the conceptual knowledge that will serve pupils well later on.
- Explore how to prioritise the maths curriculum in upper KS2 and KS3 to get pupils' maths education back on track.



Participation involves cross-phase communication between teachers, and a key feature will be understanding how best to prioritise key aspects of the curriculum to ensure pupils have mastered the fundamental understanding and skills they need to progress successfully through upper KS2 and into KS3.

[MORE INFO](#)

Understanding the Characteristics of SEND

This work group will provide outputs to support any teachers working with children with SEND, in KS1, KS2, KS3 and KS4.

Participants and their schools will:

- Help teachers to support the needs of pupils not making expected progress
- Develop an understanding of a range of known barriers to learning
- Deepen learning on particular barriers (e.g. memory and processing, mindset, maths anxiety, language) determined by the needs of the pupils within individual WG cohorts
- Consider how the characteristics of particular SEND needs may affect mathematics learning
- Access specific SEND expertise to share what may be characteristics of a student with a particular SEND (ASD, MLD, PLD, dyscalculia etc) and how this may affect learning in the classroom.

Barriers to learning affect all pupils however previous research has shown that different individual SEND needs affect mathematics learning in different ways, and as such these individuals require carefully considered scaffolding, support and challenge to access the curriculum, different to those students following mainstream age-related curriculum in mainstream schools. As every teacher is responsible for the SEND needs of all of their pupils, it will also be relevant to any teacher delivering the maths curriculum empowering them to address the needs of specific students not making progress within the classroom, to reduce or remove the gap between them and their peers.

[BOOK NOW](#)

Secondary Work Groups

The Maths Hub Programme has PD opportunities for all teachers at all stages in their careers and across all phases.

All of our secondary Work Groups are open for booking. Please see below for details of the programmes still available for booking in 2021/22. Follow the 'More Info' links for further details on the NCETM website or the 'Book Now' links to sign up via our website. Alternatively, contact info@bbomathshub.org.uk to discuss the best programme for you and your department.

All of our Work Groups are free.

Developing and Refining Your Scheme of Work: Years 7-11 Coherence

Is your department looking to develop, refine or re-work their scheme of work? For students to learn effectively we need to be able to build on prior learning and make links between topics which have a similar structure. This is reflected in the current Ofsted criteria as being able to explain the rationale around the schemes of work, not just in one year group but for the whole learning experience while they are at your school. Feedback from schools who have had recent Ofsted inspections is that inspectors will ask "Why does your curriculum look the way it does?" and their follow up is then based on teacher's responses, they are also looking for a consistency of approach in the pedagogy used in lessons. This Work Group is all about developing this consistency.

In this work group we will analyse, deconstruct and trace through the curriculum a selected key topic area, developing insight into the thought process required to develop a cohesive scheme of work and the rationale behind it as well as examining effective teaching approaches to ensure that students are getting a clear picture of the mathematics they are learning. We will identify opportunities to enhance existing schemes of work influenced by a mastery approach, and evaluate their coherence across topics and key stages.

Who can take part?

Participants should be secondary school teachers of KS3 and KS4 Maths with some influence on Scheme of Work design within their department. Individuals or ideally pairs of teachers from a department participate, with an expectation that they will work with other members of their department at appropriate points to embed the understanding of your schools curriculum design and share the pedagogies they meet with the rest of your department.

What will you learn? Participants and their departments will:

- develop a deeper insight into the maths that underpins learning in a challenging topic, through unpicking and analysing the topic
- develop a deeper insight into the key issues and misconceptions behind the topic
- identify misconceptions and plan a series of lessons to support students in the topic area
- use and evaluate appropriate pedagogies to teach the topic area
- work with their departments to unpick and analyse topics to inform collaborative planning and development of schemes of work.

Venue and Dates

This Work Group will run online and whilst the dates are set as below, the timings may change slightly to fit around participants' commitments and will be discussed during the initial session on 7 March.

- **7 Mar 2022 3:45 pm - 5:45 pm**
- **9 May 2022 3:00 pm - 6:00 pm**
- **4 Jul 2022 3:45 pm - 5:45 pm**

- **4 Apr 2022 3:45 pm - 5:45 pm**
- **6 Jun 2022 3:00 pm - 6:00 pm**

[MORE INFO](#)
[BOOK NOW](#)

Mathematical Thinking for GCSE

The Mathematical Thinking for GCSE project is for secondary maths teachers looking for practical and theoretical elements to address their students' GCSE attainment.

The stated aims of the KS4 Programme of Study are that, through working on the content, students should develop mathematical fluency, mathematical reasoning and problem solving. While mathematical thinking is a key feature of all of these, the focus of this Work Group is to support teachers in developing their understanding of mathematical thinking as it relates to problem-solving and reasoning, using practical task types to explore what it means for students to get better at mathematical thinking and what this looks like in the classroom.

This is for teachers of KS4 who want to further develop their pedagogical and theoretical understanding of developing mathematical thinking, and practical classroom strategies to explore these ideas. Lead participants will be expected to lead developments from the Work Group in their own department and so should have the opportunity and authority to do this effectively. Departments that have already engaged with the Work Group have the opportunity to continue with the Work Group structure in order to explore further and think more deeply about supporting mathematical thinking in the classroom by participating in a second 'deepening' year.

[MORE INFO](#)
[BOOK NOW](#)

Specialist Knowledge for Teaching Mathematics – Non Specialists - Cohort 2

Are you teaching maths outside your own specialism? Or is someone in your maths department a non-maths specialist? Of course, there's much more to teaching maths than knowing how to do the maths. And it's not always obvious how teaching skills from other subjects can be adapted for the maths classroom.

Develop mathematical subject knowledge and understand the pedagogy that underpins the teaching of it

If you are a headteacher or senior leader, and want to know more about the programme and its suitability for teachers in your school, watch this video.

Who can take part?

This programme is for non-specialist teachers of maths in state-funded schools who fit the following definition:

"A non-specialist teacher of mathematics is a teacher in a state-funded school or college that is currently teaching some mathematics or has commitment from a headteacher/executive head to teach some mathematics within the next year, who has not undertaken Initial Teacher Training (ITT) in mathematics."

If there is sufficient space in the cohort, other teachers of maths who do not fit this definition but would benefit from this support may also participate.

What is involved?

The programme is aligned to the NCETM teaching for mastery pedagogy and is based on six key themes:

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

Participants will explore these themes, supported by an experienced secondary practitioner.

The NCETM have produced a flyer which summarises the programme and its benefits. Download it to share with colleagues.

What will you learn?

Participants will:

- explore and increase their use of a range of pedagogic approaches consistent with teaching for mastery
- increase their confidence in planning for progression in maths
- improve their subject and curriculum knowledge of secondary maths with a particular emphasis on mathematical structures in key areas.

What do participants think?

"I am finding it really useful to see different ways of explaining or teaching concepts" – Su

"I find this really helpful [...] it's the ways to deliver the content that I find most useful, and correcting my misconceptions" – Phil

"It's making me see the different ways that concepts can be approached" – Jane

"My subject knowledge has gaps in maths – I am learning a great deal" – Francesca

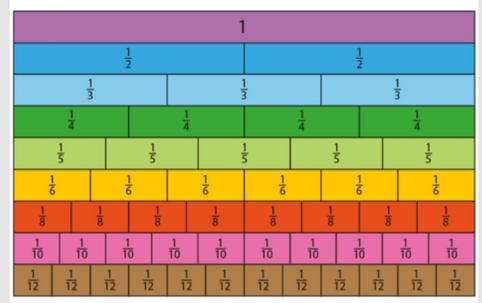
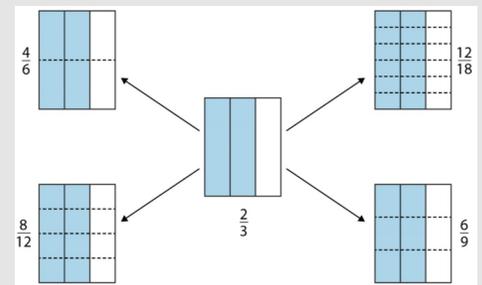
"It's helping me build confidence, in particular with using correct vocabulary and learning different ways of delivering certain topics" – Carl

What is the cost?

The SKTM Secondary Non-specialists project is fully funded by the Maths Hubs Programme so is free to participating schools.

Take part in the Work group

The second cohort is getting underway on **6 June** and will continue into the next academic year. There will be a blended mix of online and face to face meetings, the latter to be held at Cheney School in Headington, Oxford (OX3 7QH). For full details and to secure your place, click on the Book Now button.



Post-16 Work Groups

The Maths Hub Programme has PD opportunities for all teachers at all stages in their careers and across all phases. Below is a summary of the FREE development opportunities that are still available for post-16 teachers in 2021/22. Follow the links for further details on the NCETM website or contact info@bbomathshub.org.uk to discuss the best programme for you and your department.

All of our Work Groups are free.

Developing Core Maths Pedagogy

Core Maths - Why offer Core Maths and an opportunity to join our Core Maths Work Group

Is Core Maths part of your school or college's KS5 offer to enable students to continue studying maths at KS5 and to support your students' maths in other subjects?

Studying Core Maths can help students develop their quantitative and problem-solving skills. One of our students said:

"Taking Core Maths as an option at post-16 was really useful in facilitating my mathematical understanding of my other subjects such as Psychology and Biology. I'm very glad that I took Core Maths in year 12 and I believe it has given me transferable skills that I can use in everyday life such as knowledge about taxes, budgeting and statistical analysis. These skills will not only be useful for university but also for general life after post-16. I would strongly recommend the course!"

If you currently teach Core Maths, join our network of local teachers collaborating in our Developing Core Maths Pedagogy Work Group from across our region. This is a jointly funded programme by the Maths Hub Programmes and the AMSP and is free to participating schools & colleges. For more information about the Work Group or about starting a Core Maths opportunity in your school please contact our Post-16 Lead Sarah Gilbert at sarahgilbert380@gmail.com.

As part of the Core Maths Work Group you will:

- Collaborate with other Core Maths teachers and explore strategies to develop students' problem solving skills
- Consider ways of improving student outcomes and participation in Core Maths.
- Explore Core Maths pedagogy & share approaches to the planning and delivery of the Core Maths curriculum
- Focus on contextualised problem-solving and data analysis.

There will 5 sessions, all of which are twilight online meetings between 4:30 - 6pm. The current dates are:

- 31st March
- 27th April
- 11th May
- 8th June
- 29th June

For more information on the programme from the NCETM or to sign up to the Work Group via our website, please use the buttons below.

Read on for more advice on why your school should be offering Core Maths.



CORE
MATHS

[MORE INFO](#)

[BOOK NOW](#)

Developing Core Maths Pedagogy

Why should your school be offering Core Maths? Why do your students need to study Core Maths?

Lesley Swarbrick has collated some useful responses to these questions; there are some excellent materials on the AMSP website which answer both of these questions. There are taster videos and desmos activities on Finance (essential life skills) and Fermi Estimation (quick calculations) which are part of the Core Maths course irrespective of which specification you choose. Have a look at the level 3 taster lessons.

Examples of Fermi Estimation

How much domestic water does a house use per week?

How much land is needed for a music festival?

How much do I need to budget for food each week?

How much pizza dough does a restaurant use each day?

How many students live within a 1 mile radius of a possible cinema location?



All students post 16 should have the opportunity to study Maths beyond GCSE. A broad range of A level and vocational courses require the maths skills that Core Maths helps to develop, including:

- Biology and Environmental Science
- Business and Economics
- Geography
- Health and Social Care
- Psychology
- Sociology
- Sports Science and PE

Indeed, for some University courses, students need to do an Admissions Test, which will have mathematical content, and if students haven't studied any Maths post 16 then they could be at a disadvantage.

PODCAST

CORE MATHS FIVE YEARS ON

What does the course offer post-16 students that don't do Maths A level, and how can schools/colleges offer it?

THE NCETM MATHS PODCAST

Episode 42

This podcast by the NCETM is really inspiring, and clearly explains the differences between teaching Core Maths and other Level 3 Maths courses. It features Jack Ndebu, who was a new teacher of Core Maths at the time of the podcast and would be a useful listen.

Core Maths is an excellent opportunity for students to continue studying Maths at KS5.

Other Events and Opportunities

NETWORK MEETINGS (IN ASSOCIATION WITH THE AMSP)

Year 10 Maths Feasts Happening in Your Area In March

The Maths Feasts are a fun educational challenge for Year 10 students which tests problem-solving and teamwork skills. Teams of four students will test their maths skills with our all-you-can-eat feast of problems!

There are several rounds requiring different skills and strategies for success. Each event takes between two and three hours, and awards will be given for good teamwork and for the winning team of each round.

Please see: <https://amsp.org.uk/events/maths-feast> for more details and to apply.

The **Oxfordshire and Buckinghamshire Online Network** have 2 events coming up:

Building in Problem-Solving - Making Transition Easier

This online session will be delivered by Vicky Wheelhouse, Maths Education Support Specialist for MEI. Vicky will talk about how to build in problem solving at KS3 and KS4 in order to ease transition. She says, "It's a lot easier than you might think - you may discover you have been doing it all along!".

This will take place on 8th March 2022 from 16:30 - 18:00.

Please see <https://amsp.org.uk/events/details/9520> for more details and to register.

Raising Girls' Participation at Level 3

We know that overall girls tend to be under-represented in Level 3 maths (Core Maths, A Level Maths and Further Maths). This online session will be delivered by Rachel Beddoes, AMSP Girls' Participation and Careers Coordinator. Rachel will share suggestions to help you encourage girls to consider taking maths beyond GCSE. Although the material is specifically pitched at girls, the ideas would be appropriate for all genders.

This event will take place on 26th April 2022 from 16:30 - 18:00.

Please see <https://amsp.org.uk/events/details/9369> for more details and to register.

There will be time for questions and discussion at the end of each meeting.

