

WEST YORKSHIRE MATHS HUB

WORK GROUPS FOR 2023/24

FULLY FUNDED CPD

Each year the NCETM works with the maths hubs to decide the list of Work Groups that will be run across the country. They are called National Collaborative Projects or NCPs.



Who we are

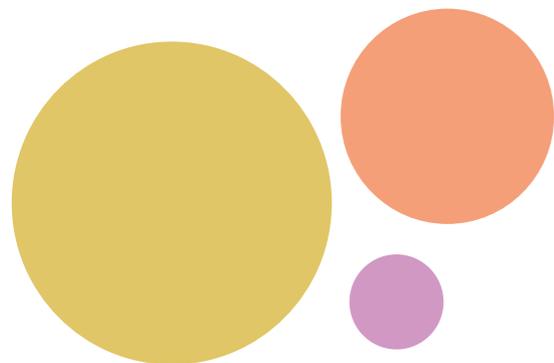
The West Yorkshire Maths Hub is one of a network of 40 Maths Hubs in England, working together within the Maths Hubs Programme. The programme is funded by the Department for Education (DfE) and coordinated by the National Centre for Excellence in the Teaching of Mathematics (NCETM).

The West Yorkshire Maths Hub has been in operation since July 2014. During that time, hundreds of teachers from Calderdale, Bradford and Leeds have received training and collaborated in Work Groups to develop their maths teaching.

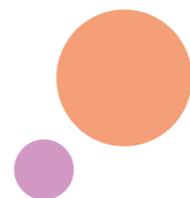
Our vision is to be connected with every school in our region so that all mathematics teachers are supported in their role and have the opportunity to become leaders of professional development if they wish. We believe that looking after our teachers is the most effective way of ensuring all our students can enjoy the best possible experience of learning mathematics.

We benefit from being based in the Trinity MAT, with Trinity Academy Halifax being the hub's lead school.

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This booklet is interactive!

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What is a Work Group?

A Maths Hubs Work Group is:

- Comprised of a group of schools who work on something together, normally over the large part of a school year, typically with one or two teachers from each school acting as lead participants.
- Led by a teacher or former teacher, expert both in the area of maths education in question and in leading teacher professional development.
- Normally part of a national collaborative project, which supports the Work Group Leads and seeks to ensure lessons are learned from around the country.

Schools in every Maths Hub Work Group:

- Work towards outcomes linked to teachers' professional learning, their practice development, the learning of the pupils they teach, and new approaches and policies in maths teaching across their school or department.
- Maintain a focus on the classroom, often planning, observing and refining lessons together.
- Evaluate the outcomes of the Work Group's activity, with collated findings being fed into the national picture and used to inform future work.

In some teaching for mastery projects, the Work Group is sometimes referred to as a Teacher Research Group (TRG). The characteristics of a TRG are exactly the same as a Work Group.



One or two lead participant teachers, representing a small group of schools or maths departments, form the Work Group.



The Work Group meets several times over the course of a school year. In between, participants keep in touch with each other, comparing notes about what they're trying out in their own schools.



The Work Group Lead is a teacher or former teacher, expert in both the area of maths teaching in question and in leading teacher professional development.



National-level evaluation informing future work.

Each Work Group is part of a national project.

EYFS & Primary

Early Years & Primary Work Groups

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Early Years / Primary

Mastering Number at Reception and KS1

This project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2.

The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

Mastering Number is fully funded by the Maths Hubs Programme, so is free to participating schools.

BENEFITS:

- Your pupils will develop and demonstrate good number sense
- You will develop a secure understanding of how to build firm mathematical foundations
- You will work to develop intentional teaching strategies focused on developing fluency in calculation and number sense for all children
- You will develop understanding and use of appropriate manipulatives to support your teaching of mathematical structures
- Your school will get daily slides and activities to support the development of number sense.



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Early Years / Primary

Mastering Number at KS2

This project enables students in years 4 and 5 to develop fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense.

WHAT'S INVOLVED?

The project offers schools that are involved in Mastering Number at Reception and KS1, and are also in a Sustaining Work Group, the opportunity for teachers to develop the knowledge and skills to secure firm foundations for their pupils in multiplicative relationships. The aim over time is that all children will leave KS2 with fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense when looking at the multiplicative relationship. Attention will be given to the key knowledge and understanding needed in Year 4 and Year 5 to support future progression.

WHO CAN TAKE PART?

This project is for schools that are already involved in Mastering Number at Reception and KS1, and will also be in a Sustaining Teaching for Mastery Work Group in 23/24.

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Early Years / Primary

Mastering Number (Embedding the Impact Community)

The intention of this community is to provide support for schools who have already engaged in Mastering Number to embed Mastering Number in their school.

WHAT'S INVOLVED?

This is a community for schools who have already engaged in Mastering Number. One nominated Lead Teacher will receive support to make Mastering Number a permanent element of the school curriculum.

The Lead Teacher will engage in an online learning community and have continued access to all teaching materials, recording of central sessions, and sample teaching videos.

WHO CAN TAKE PART?

This Work Group is open to all 2022/23 Mastering Number Schools who are engaged in a 2023/24 Teaching for Mastery Work Group (or have a formal EOI in working with the hub on teaching for mastery in future years). It is also open to schools who engaged in Mastering Number 2021/22 who have not previously engaged in this Work Group.



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Early Years / Primary

Primary Mastery Readiness

A programme for primary schools that want to adopt teaching for mastery in maths, but would benefit from a staged approach.

WHAT'S INVOLVED?

For schools who are in the earlier stages of developing the principles of Teaching for Mastery in their school, we have our Mastery Readiness Work Group. This Work Group invites schools to collaborate with other schools at a similar stage in the journey as they explore the five catalysts for change and look in depth at their school vision and culture for maths, and the mathematical mindset of their pupils and staff. Participant teachers will begin to look at both subject knowledge and pedagogical enhancements as well as a focus on improving pupil outcomes.

This Work Group is accompanied by targeted and bespoke support visits from one of mathematics SLEs who will visit each school 5 times throughout the year.

WHO CAN TAKE PART?

Schools will have an identifiable barrier to being able to successfully implement teaching for mastery at present. Barriers may include an Ofsted grading of RI or Inadequate, poor pupil progress in maths, serving an area of low mobility, or issues in the school that have meant the implementation of sustained change has been difficult.



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Early Years / Primary

Primary Teaching for Mastery - Development

The Teaching for Mastery Programme is a professional development opportunity designed to support teachers like you to develop best practice in maths in your school.

WHAT'S INVOLVED?

Two teachers from each participating school join a Work Group, consisting of around six local primary schools. Each Work Group is led by a trained Primary Mastery Specialist. Work Groups meet regularly to plan, observe and discuss teaching for mastery.

For the first time in 2023/24, we are offering the opportunity for teachers who work in special schools to come together to join a regional cross-phase TfM Development Work Group.

WHO CAN TAKE PART?

This is for state-funded primary schools in England. Each school must send two teachers to half-termly school-based teacher research groups. Each term, the Mastery Specialist will visit each of the schools.

In 2023/24, those teaching in special schools will have an enhanced offer that will enable them to network with other schools in a similar context.



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Early Years / Primary

Primary Teaching for Mastery - Embedding

Collaborative professional development to support schools in their second year of teaching for mastery.

WHAT'S INVOLVED?

Work Groups in this project will support schools to scale up teaching for mastery approaches from individual teachers' classrooms, ensuring whole-school practices are consistently adopted. There are at least five workshops across the whole year, plus support from a Mastery Specialist.

Those who have been in a Development Work Group become part of this project, focusing on systems and culture to support teaching for mastery, as well as support for school leadership and subject leadership.

WHO CAN TAKE PART?

This is for schools who have previously participated in a Development Work Group. All must show a strong commitment to embedding teaching for mastery approaches. The school leadership team including the headteacher must also be involved, to ensure there is a whole-school commitment.



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Early Years / Primary

Primary Teaching for Mastery – Sustaining

We are offering a 'Core Offer' and a 'Bespoke Offer' for schools across our region; Bradford, Calderdale and Leeds who have engaged with Maths Hubs recently or historically.

CORE OFFER

Through the Core Offer, we will be continuing to group schools geographically, assign them a local leader of maths/Mastery Specialist who will act as a point of contact. The Mastery Specialist will facilitate a termly half a day Network Meeting based in either their own school or a school part of the local network.

These Sustaining Network Meetings are permanent form of support for maths in primary schools where, through collaborative practices, schools can focus on the continued improvement, consistency and refinement of a teaching for mastery approach.

BESPOKE OFFER

The Bespoke Offer will allow schools to sign up to a group which will either focus on a particular theme across the year or a group which will support the context of mathematics in your school. This is in recognition that schools are in different positions and have different priorities linked to mathematics but will benefit from being in a group with other schools that are either in a similar position or wanting to focus on a similar idea.



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Early Years / Primary

Specialist Knowledge for Teaching Mathematics - Early Years Teachers

This project 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.

WHAT'S INVOLVED?

This programme is designed to improve the subject knowledge and pedagogical knowledge for all practitioners teaching and supporting the learning of early maths. **There are two types of SKTM Early Years pathways:**

- Pathway one: Number, Patterns and Structures
- Pathway two: Pattern, Shape, Space and Measures.

Each pathway is the equivalent of a four-day programme and has three pre elements, three associated pedagogy sessions, and a task to support the transition from theory to practice. There is also a final core unit that aims to review quality provision.

After the year-long programme, Mastery Readiness schools will be ready to progress into Development Work Groups and beyond.

WHO CAN TAKE PART?

These programmes are designed for individuals who would like to develop their specialist knowledge for teaching maths to three-to-five-year-olds. This may be particularly relevant for teachers who have moved phases or have not received maths-specific training.



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Early Years / Primary

Specialist Knowledge for Teaching Mathematics - Primary Teachers

This project is designed to support primary teachers in developing specialist knowledge for teaching mathematics, thus enabling them to understand, teach and support pupils in maths in the classroom.

WHAT'S INVOLVED?

The project is designed to improve the subject knowledge and pedagogical knowledge for all practitioners teaching and supporting the learning of primary maths.

There are two pathways:

Number, and Spatial Reasoning. Each pathway consists of several core units and looks at specific topics as well as policy and practice. Exploration of modules in these pathways will take place during the academic year, over the equivalent of four days. Participants in the programme may wish to follow one pathway this year, and the other pathway next year.

WHO CAN TAKE PART?

These programmes are designed for primary teachers who would like to develop their specialist knowledge for teaching maths. This may be particularly relevant for teachers who have moved phases or have not received maths-specific training.



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Early Years / Primary

Specialist Knowledge for Teaching Mathematics - Primary Teaching Assistants

Develop mathematical subject knowledge and pedagogy.

WHAT'S INVOLVED?

The project is designed to improve the subject knowledge and pedagogical knowledge for all practitioners teaching and supporting the learning of primary maths.

It utilises primary teaching assistant-specific materials and **focuses on the following mathematical areas:**

What is effective in the learning and teaching of mathematics?, Number sense (part 1), Number sense (part 2), Additive reasoning, Multiplicative reasoning & Fractions.

WHO CAN TAKE PART?

These programmes are designed for primary teaching assistants who would like to develop their specialist knowledge for teaching maths. This may be particularly relevant for new TAs or TAs that have not received maths-specific training.

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Early Years / Primary

Specialist Knowledge for Teaching Mathematics - Primary Early Career Teachers

Develop mathematical subject knowledge and pedagogy.

WHAT'S INVOLVED?

Two maths-specific subject knowledge projects are available to support primary Early Career Teachers (ECTs) – one is for ECTs who have not yet participated in this project and one is for those who participated in 2022/23. Both projects offer high-quality subject knowledge and pedagogy maths support for ECTs, recognising the requirements of the ECF. Communities of ECTs will be formed in these projects, allowing for collaboration and practice-sharing. In both projects, teachers will design effective learning and teaching in maths, and review and analyse their practice.

WHO CAN TAKE PART?

Phase 1 Communities are for those identified as Early Career Teachers – teachers in their first year of teaching. Phase 2 Communities are for those in the early part of their careers. They will have engaged with Phase 1 before engaging with this phase.

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Early Years / Primary

Year 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.

WHAT'S INVOLVED?

Work Groups in this project focus on curriculum and pedagogical continuity over Years 5 to 8. Participants will explore a selection of high-quality resources: Checkpoints, Multiplicative Reasoning and Algebraic Thinking materials.

A lesson study approach is encouraged, where all participants focus on a particular aspect of the maths curriculum and work collaboratively to develop this their schools. Cross-phase classroom observation and discussion of practice are encouraged wherever possible.

WHO CAN TAKE PART?

This project is for both primary and secondary schools. It may be particularly suitable for linked 'families' of schools; primary, secondary, etc. A 'family' could be a secondary school and their associated (feeder) primary schools or groups of schools within a MAT.

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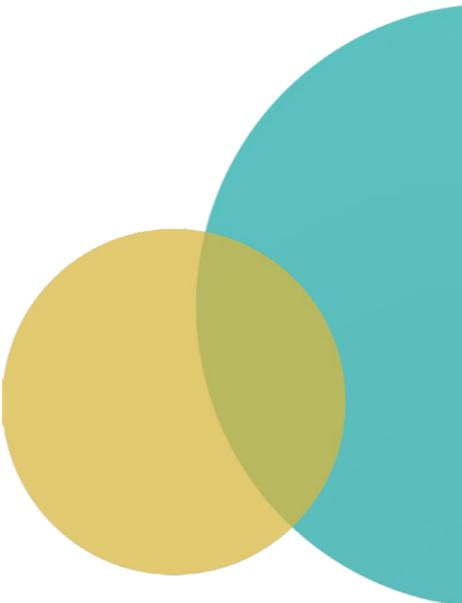


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This booklet is interactive!



Secondary

Secondary Teaching for Mastery - Development

Professional development to enable you to introduce teaching for mastery across your maths department.

WHAT'S INVOLVED?

This Work Group is the first year in the NCETM's Teaching for Mastery Programme that will support schools in developing a teaching for mastery approach and is not only fully funded but comes with £2000 to support teacher release. Participating teachers will have the opportunity to see teaching for mastery in practice through the observation of live lessons and take ideas to implement in their own classroom. Each school will have their own designated Mastery Specialist.

The Programme follows the following structure:

- 2 Teachers (Mastery Advocates) from each school
- 5 half day Work Groups led by our Mastery Specialist
- 5 half day bespoke school visits aimed at developing classroom practice
- Each Work Group consists of two local schools.



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£2,000
funding

For the first time in 2023/24, we are offering the opportunity for teachers who work in special schools to come together to join a regional cross-phase TfM Development Work.

WHO CAN TAKE PART?

This programme is for state-funded secondary schools in England. Mastery Advocates should be teachers with the commitment, experience and authority to lead developmental work across a maths department. The support of the Head of Maths, and the headteacher or a member of SLT, is also essential.

GET INVOLVED!



Secondary

Secondary Teaching for Mastery - Embedding

Enhanced support for maths departments in their second year of introducing teaching for mastery.

WHAT'S INVOLVED?

The Embedding Work Group is the second year in the NCETM's Teaching for Mastery Programme. This Work Group will support schools to embed a teaching for mastery approach in their departments. This Work Group is fully funded and comes with £1000 to support teacher release. Each school gets a bespoke programme led by our Mastery Specialist over 3 days throughout the year.

WHO CAN TAKE PART?

Participation is for maths departments in schools that took part in a Secondary Teaching for Mastery Development Work Group in 2022/23. Lead participants will ideally be the Mastery Advocates who participated in 2022/23 Work Groups.

£1,000
funding



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GET INVOLVED!



Secondary

Secondary Teaching for Mastery - Sustaining

A vibrant professional learning community to reflect upon and develop mastery approaches.

WHAT'S INVOLVED?

This project is for departments who have previously participated in Development Work Groups. While the Mastery Advocates from these departments will be significant members of the Work Group, the whole department is a member of this professional learning community. Each Work Group will have a focus for the year.

The four foci for 2023/24 are:

- Developing mathematical thinking
- Developing coherence
- Developing mathematical coherence for learners across maths and science
- A bespoke teaching for mastery focus.

WHO CAN TAKE PART?

These Work Groups are for all departments that have previously participated in Mastery Development Work Groups and all Cohort 1-6 Mastery Specialist Departments. The two lead participants continue to be Advocates who have participated in a Development Work Group and key teachers from a Mastery Specialist's department, but particular Work Group sessions may sometimes be joined by participants' departmental colleagues.



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GET INVOLVED!



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Secondary

Secondary Subject Leadership

This vibrant leadership community offers focused support to secondary heads of department and subject leaders.

WHAT'S INVOLVED?

Participants will support each other through the sharing of leadership strategies and practices. A vibrant professional learning community will be created through peer-to-peer discussions and expert input. Participants will also create an action plan for their department. Much of the work will involve each individual department working on elements of their action plan and developing collaborative ways of working which support their professional development. As well as exploring the needs of their own department, participants will benefit from the expertise and experience of the group of departments represented.

WHO CAN TAKE PART?

The project is for secondary heads of departments/subject leaders, and is open to heads of department in schools already involved with Maths Hubs and to those who are not yet involved. In their first year of engagement with this project, participants will be part of a Maths Hub-led subject leadership community.



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GET INVOLVED!



Secondary

Secondary MAT Maths Leads

Professional development designed specifically for secondary Maths MAT Leads.

WHAT'S INVOLVED?

Now in its third year, this project supports those who lead maths across multiple schools within a MAT. Participants will also develop their role as a leader of system change, curriculum change, and teacher professional development.

New participants will complete a bespoke programme, and those continuing the project will develop their work together as a community. There will be opportunities for new and continuing participants to work together, so all can benefit from central provision and the opportunity for practice exchange with peers.

WHO CAN TAKE PART?

The project is for those who lead maths across multiple schools within a MAT, including at least one secondary school. This includes MAT maths leads who are continuing from previous years, and new participants. To better engage in the programme, participants are encouraged to have at least one school in a Secondary Teaching for Mastery Work Group in 2023/24, but this is not essential.

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Secondary

Years 7-11 Coherence

Explore approaches to key topics in KS3 and GCSE.

WHAT'S INVOLVED?

Feedback from teachers, along with GCSE exam analysis, indicates there are key areas of the curriculum that students find challenging. Work Groups in this project deconstruct and analyse these areas and decide effective approaches to them, to achieve a more coherent learning journey through the secondary years.

Work Groups will follow a workshop – school-based work cycle. Teachers will identify and analyse a key topic area, work collaboratively to develop pedagogical approaches to it, and evaluate and discuss it after teaching.

WHO CAN TAKE PART?

Teachers should be secondary school maths teachers. Individuals or, ideally, pairs of teachers from a department to participate, and will work with other members of their department at appropriate points. The project also offers an entry point into developing mastery approaches, or could support a department already involved in the Teaching for Mastery Programme.

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Secondary

Year 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.

WHAT'S INVOLVED?

Work Groups in this project focus on curriculum and pedagogical continuity over Years 5 to 8. Participants will explore a selection of high-quality resources: Checkpoints, Multiplicative Reasoning and Algebraic Thinking materials.

A lesson study approach is encouraged, where all participants focus on a particular aspect of the maths curriculum and work collaboratively to develop this their schools. Cross-phase classroom observation and discussion of practice are encouraged wherever possible.

WHO CAN TAKE PART?

This project is for both primary and secondary schools. It may be particularly suitable for linked 'families' of schools; primary, secondary, etc. A 'family' could be a secondary school and their associated (feeder) primary schools or groups of schools within a MAT.

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Secondary

Specialist Knowledge for Teaching Mathematics - Early Career Teachers

Develop mathematical subject knowledge and pedagogy.

WHAT'S INVOLVED?

Two maths-specific subject knowledge projects are available to support secondary Early Career Teachers (ECTs) – one is for ECTs who have not yet participated in 2022/23. Both projects offer high-quality subject knowledge and pedagogy maths support for ECTs, recognising the requirements of the ECF.

The communities formed as part of the project provide an opportunity for participants' conversation to remain focused on the teaching of maths, with teachers at a similar stage of their career.

WHO CAN TAKE PART?

Phase 1 communities are for those identified as Early Career Teachers – teachers in their first or second year of teaching. Phase 2 Communities are for those in the early part of their careers. They will have engaged with Phase 1 before engaging with this phase.

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Secondary

Specialist Knowledge for Teaching Mathematics - (Non Specialists)

Highly-regarded professional development offering secondary non-specialist maths teachers valuable CPD focusing on subject knowledge and pedagogy.

WHAT'S INVOLVED?

With the pressures of timetabling and the need to deploy staff flexibly, many secondary schools find that they have teachers teaching outside of their specialism. This can mean that they have teachers from a range of subject backgrounds teaching in maths departments, tackling complex topics, and having to plan lessons with unfamiliar content.

If you currently have non-specialists teaching in your maths department and want to give them the opportunity to hone their subject knowledge and classroom practice, this programme is ideal.

TESTIMONIALS

"I have found it really useful to see different ways of explaining or teaching concepts"

"From attending the programme, the non-specialist teacher's confidence in his maths and the teaching of maths has improved. The expectations of his students could not be higher"

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Secondary

Specialist Knowledge for Teaching Mathematics - Secondary Teaching Assistants

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

WHAT'S INVOLVED?

This is a new programme to support teaching assistants develop the specialist knowledge for working within the maths classroom. The programme is aligned with an overall Teaching for Mastery Programme designed to develop maths teaching in schools and is aimed at supporting teaching assistants whose schools are already engaging with a Teaching for Mastery Work Group.

WHO CAN TAKE PART?

This programme will be relevant for teaching assistants who work for most of their time with students in the KS3 maths classroom or who lead intervention sessions with groups of students. The participants' schools should already be engaged with a Teaching for Mastery Work Group, and this programme will complement this provision.

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This booklet is interactive!



Post-16

Specialist Knowledge for Teaching Mathematics (Core Maths Teachers)

Support for teachers new to teaching this qualification.

WHAT'S INVOLVED?

This programme supports teachers in developing specialist knowledge for teaching Core Maths and increases their confidence in teaching the course. The programme forms part of the overall Advanced Mathematics Support Programme (AMSP) and Maths Hubs Core Maths professional development offer.

Principal focus is on Core Maths subject knowledge and pedagogy and the programme will be based on these six key themes: using contextualised problem-solving; applying Fermi estimation and modelling; developing critical analysis; making sense of finance; using the pre-release materials; exploring statistics.

WHO CAN TAKE PART?

This programme is for teachers who are in the first two years of teaching Core Maths and are teaching a Core Maths class during the academic year 2023/24.

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Post-16

Developing A Level Pedagogy

Develop improved teaching approaches for A level Mathematics.

WHAT'S INVOLVED?

These Work Groups support experienced A level teachers to not only further develop their expertise but to provide a model to support departmental change. The content of individual Work Groups will be broadly linked to the Overarching Themes of the A level qualification: problem-solving and mathematical thinking; mathematical modelling and representations; proof, reasoning, and mathematical communication.

The project involved a direct working partnership between the Maths Hubs Network and the Advanced Mathematics Support Programme (AMSP).

WHO CAN TAKE PART?

Participants should be existing leaders of A level teaching or experienced teachers of A level Mathematics who wish to lead the development of pedagogy with other colleagues in their own or other schools.

This project would be particularly useful to those who may have already completed other (AMSP) A level courses such as Teaching A level Mathematics (TAM) or Preparing to Teach A level Mathematics.

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Post-16

Supporting Low Attainers to Achieve L2 Qualification in Mathematics

Identify and meet the needs of students continuing L2 study at post-16.

WHAT'S INVOLVED?

This is for teachers whose students will study Level 2 maths across secondary and post-16. Teachers of Years 10 and 11, and of post-16 GCSE Maths resit and/or Functional Skills Maths, will develop ways to support students who need to study maths beyond age 16 to achieve a L2 qualification.

Work Groups will focus on developing transferable teaching techniques aligned to teaching for mastery. Participants will attend three full-day workshops and complete practice-based tasks between sessions.

WHO CAN TAKE PART?

This is for teachers of GCSE Maths, and for those teaching GCSE Maths resit and/or Functional Skills Maths. Participants may be based in secondary schools, UTCs, FE colleges, Sixth Form colleges, schools with post-16 provision, or other post-16 settings.

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Leadership

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Leadership

Strengthening Partnerships with ITT Providers

A professional learning community for ITT providers and Maths Hub leadership.

WHAT'S INVOLVED?

This project aims to form an established group of ITT representatives across the sector who are committed to developing communities of practice in order to review and evolve their provision.

Any work undertaken will be in conjunction with the leaders of maths provision in ITT institutions, to strengthen the partnership and agree actions that will support the deepening understanding of teaching for mastery for ITT trainees at an award level. Activity may include working across hub boundaries and collaboration in larger regions.

WHO CAN TAKE PART?

Participants will be from the ITT community; they should be directly involved in ITT with a responsibility for maths. They will represent the various ITT providers across the hub region so may include HEI, SCITT and School Direct, and represent different phases of ITT including EYTS, QTS and post-16.

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How to apply?

If you would like to take part in any of the Work Groups please:

- Visit our website - wymathshub.co.uk
- Scan the QR codes in this booklet
- Click the links in this booklet
- or contact us directly - wymh@westyorkshiremashub.co.uk

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We hope to see you soon!

