Summer Newsletter

June 2016

North West Three Maths Hub

Funding confirmed for two more years!

The Department for Education has confirmed funding for the Maths Hubs programme until the end of the 2018 summer term. This represents another clear vote of confidence in Maths Hubs by the Department for Education and we hope will provide a helpful and solid basis for longer term planning.

The overall aim:

All Maths Hubs working together to support primary practitioners through to post 16 to have a chance to change/influence maths education across the country.

About our work:

As a Lead Maths Hub we provide support to all schools in the area and the NW, across all areas of maths education, including:

-Recruitment of maths specialists into teaching.

-Initial training of maths teachers and converting existing teachers into maths.

-Co-ordinating and delivering a wide range of maths continuing professional development (CPD) and school-to-school support.

-Ensuring maths leadership is developed, e.g. running a programme for aspiring heads of maths departments.

-Helping maths enrichment programmes to reach a large number of pupils from primary school onwards.

‘Teaching for Mastery’ – NW Maths Hub 3 supporting schools to develop an understanding of Mastery and working towards achieving this for all!

For further information in relation to National and Local work streams that Maths Hub NW3 is involved in please visit:

http://www.nwmathshub3.co.uk/index.html

or follow us on twitter: @NWmathshub3.

Alternatively please don’t hesitate in contacting:

Lisa Bradshaw (Maths Hub Lead)- lisa.bradshaw@three-saints.org.uk

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National projects and priorities

Taking 'teaching for mastery' forward

Recruitment opportunities for teachers, and primary schools, to take teaching for mastery forward into the next school year.

Background

Since 2014, The NCETM and Maths Hubs have been working together to develop approaches to teaching for mastery within primary mathematics. This has been informed by the teaching of mathematics in high performing South East Asian jurisdictions. In 2015, the NCETM and Maths Hubs recruited 140 teachers (four per Maths Hub) to participate in a Mastery Specialists development programme. During this academic year, the teachers have been developing teaching for mastery approaches in their own school as well as working with interested schools through pilot Teacher Research Groups (TRG). In 2016-17, this first cohort of Mastery Specialists will all be leading Teaching for Mastery Work Groups, each with six schools.

NCP5 Primary Maths Master Teachers- Following the very successful 2015-16 Mastery Specialist programme, the NCETM and Maths Hubs are in the process of recruiting a second cohort of 140 expert primary school teachers (4 per Maths Hub) to develop and work as Primary Mathematics Teaching for Mastery Specialists. The closing date for applications was Wednesday 1st June. Successful applicants will follow a rigorous selection process and will begin training in the autumn term and in 2017-18, the Mastery Specialists will each lead a Teaching for Mastery Work Group for their Maths Hub.

NCP5 Primary Maths Mastery Work Group Schools- In 2016-17, all Maths Hubs will be running primary mathematics Teaching for Mastery Work Groups led by Mastery Specialists. Each Maths Hub is now seeking to recruit schools for four Work Groups, each involving six schools (i.e. 24 schools per Maths Hub). The closing date for application is Wednesday 8th June.

Benefits for participating schools:

Participating in the Work Group will provide the following benefits to participant schools:

- High quality support for teacher professional development for the lead teachers, facilitated by the Mastery Specialists
- Support for the head teacher in addressing leadership issues related to teaching for mastery from the Mastery Specialist and the Maths Hub's leadership
- Opportunity to work closely with other schools also developing teaching for mastery
- No charge for participation and a grant of £1000 to help subsidise teacher release time

Successful schools will be informed after the closing date.

Useful links include:

NCETM: https://www.ncetm.org.uk/

Maths Hub website: http://www.nwmathshub3.co.uk/

Nrich: http://nrich.maths.org

Maths No Problem: http://www.mathsnoproblem.co.uk/

Inspire (OUP): https://global.oup.com/education/content/primary/series/inspire-maths/?region=uk

Maths Associations: http://www.nwmathshub3.co.uk/associations.html

Learn and Lead – Maths Strategy group info: http://learnandlead.co.uk/

Working with National Centre for Excellence in the Teaching of Mathematics

Maths HUBS

The Mathematical Association
Supporting Mathematics in Education

ATM Association of Teachers of Mathematics

AMET

(na)² MIC

NAMA National Association of Mathematics Advisers

NCP 2- Singapore Maths

Reach of the project so far- From the start of the project in 2015, we have now trained and worked alongside 67 schools from across the North West.

Ofsted view

Of the schools we have worked with so far, four schools have received Ofsted inspections. Below are some quotes from the inspection reports that are pertinent to the work that we have done with them in relation to the Singapore maths approach.

"The new developments, introduced to support pupils have a deeper understanding of what they read and to help pupils develop ways to solve problems in mathematics, are thoroughly established."

"The teaching of mathematics is a significant strength of the school. Pupils have a deep understanding of mathematical ideas and apply their learning to solve complex problems. Many pupils say that mathematics is their favourite subject."

Impact tracking methods

In order to measure the impact of the project, we have collected data from a number of sources.

Firstly, from our initial training with schools we have an average 77% of delegates who rate it as 'outstanding' with the other 23% rating it as 'good'. Alongside, it is often pointed out that the training itself has had a significant impact on teachers' understanding of pedagogy and made them think differently about teaching.

Survey results show that 95% of Head Teachers and Maths Leads agreed that the approach has led to improved maths outcomes amongst pupils. One survey respondent stated, "We are at the beginning of our journey however the results so far have been amazing – this will revolutionise the teaching of maths in our school". Many teachers have also stated that they have been particularly pleased with the impact it has had on struggling pupils – often the increased use of manipulatives, contextualisation of problems and the greater importance placed on communicating ideas and thinking, rather than just getting the right answer, are cited as being reasons for this.

Another key finding has been the increased enjoyment levels during maths lessons for both teachers and pupils. From the survey 90% of respondents agreed that the project led to teachers enjoying maths more than they did before and 100% agreed (62% strongly agreeing) that the project had led to pupils enjoying maths more. One survey respondent stated, "The experience has been overwhelmingly positive for students and teachers. Maths is now cited as a favourite subject by students and teachers alike."

Arguably a direct outcome of the above finding is the 94% of survey respondents who agreed (62% strongly agreeing) that the project has led to increased levels of engagement from pupils in maths lessons.

Finally, it is important to note that, just because the impact findings so far appear to be overwhelmingly positive, it does not mean it has been easy for schools to implement. One survey respondent stated that "changing the approach [to Singapore maths] has been challenging for the teachers" and "it has required significant investment of both time and money but has given us a strong shared understanding of effective maths teaching".

From our own informal findings we are starting to see that, where the model is strongest in schools, teachers work together collaboratively on a regular basis and often watch each other teach.

NCP 4- KS3 Reasoning Project

Lindsay Porter, Secondary Maths Hub Lead in partnership with Liverpool Hope University has supported the successful schools in developing reasoning as this is one of the three core aims of the new National Curriculum. It is an opportunity for teachers to participate in a high-quality professional development programme jointly led by the NCETM and the Maths Hubs network.

Two teachers from the selected Maths departments have participated in three professional development workshops so far concentrating on reasoning in KS3, and in between each PD workshop these teachers have led a lesson study gap task (which included peer observation and reflection) in which all the department took part. As a result of which all involved individually improved their knowledge and confidence to develop their pupils' reasoning, and collectively experienced rich and sustained professional development that will ensure that their departmental practice and culture develops this year and is embedded and deepened next year, and thereafter.

Due to the very high interest in this project, we are working with 10 schools in total, 2 practitioners from each school: All Saints Catholic High School (Rawtenstall), Byrchall High School (Wigan), Cowley International College (St Helens), Rowan Park High School (Liverpool), St Christophers CE High School (Accrington), Christ the King Catholic High School (Southport), Haydock High School (St Helens), Hawkley Hall High School (Wigan), St Edmund Arrowsmith Catholic High School (Wigan) and St Marys Catholic Academy (Blackpool).

Day 4 - final session will take place on: Tues 14th June 2016 9:30 – 3:30 at Peter Street Community Centre, St Helens.

Support for 11 – 16 centres with the new higher tier content

NW3 Maths Hub has enlisted the help of the Further Maths Support Programme to provide a series of workshops aimed at the teaching and learning of the new content.

Each session will have 2 workshops running parallel. Two teachers from each department are encouraged to attend to get the most out of the sessions.

They will be held at: Rainford High Technology College, Higher Ln, Rainford, St Helens WA11 8NY.

The final session is: Wednesday 15th June 4pm-6pm.
Workshop 1: Probability and Iteration
Workshop 2: Functions and Circles
To reserve a place please contact: Sarah Makin- sarah.makin@three-saints.org.uk

NCP 3 Post 16 Widening Participation

A conference took place on March 2016 at the City of Liverpool College, aimed at building upon other recent initiatives and further encourage teachers to routinely incorporate enrichment activities into their mathematics lessons, to help teachers to promote the study of mathematics post-16, and to provide a stimulating environment in which teachers can discuss ideas and share their thinking on the best ways of enriching mathematics teaching. This was supported by CMSP and FMSP in association with NW Maths Hub 3.

60 delegates from across St Helens, Ellesmere Port, Bury, Lancashire, Stockport, Salford, Liverpool, Cheshire, Wirral, Cheshire and Manchester attended the conference. A great day was had by all participants. A particular highlight was the key note presentation by Rob Eastaway, of Maths Inspiration.

A Level CMEP training (over 2 years)- working with MEI this course explored a range of resources on the CMEP website, helped participants to understand the philosophy for teaching and learning mathematics which underpins the CMEP project and maximise the impact of the resources in the classroom. 30 delegates attended over two sessions with a gap task. This resulted in extremely positive feedback. This course will run again in 2016-17.

Level 3 lead Post- Supporting the development of Level 3 Maths, especially the increased participation of students; will continue to be a priority for the Maths Hubs programme. Work is already underway to strengthen co-ordination between FMSP, CMSP and Maths Hubs in this area. Each Maths Hub has recruited a Level 3 Maths Lead who will lead a Level 3 Maths co-ordination group working closely with the appropriate Core Maths Lead and FMSP Area Co-ordinator. NW Maths Hub 3 has successfully recruited: **Catherine van Saarloos, Curriculum Team Leader of Mathematics at the City of Liverpool College.** We look forward to working with Catherine and welcoming her to the NW Maths Hub 3 Team.

The next Post 16 WG meeting will take place on: Monday 27th June, 9.30am at Carmel College, St Helens. This group meets on a termly basis. For further information on joining the group please contact Lisa Bradshaw.

Core Maths: not just more maths!

The Core Maths Support Programme, through the Core Maths Leads and CMSP Regional Advisers are planning to run a number of CPD courses for schools and colleges intending to begin Core Maths in autumn 2016. This provides an excellent opportunity for Maths Hubs to work closely with the Core Maths Lead in their area and is part of the wider effort to co-ordinate all support for Level 3 Maths.

Level 3 Core Maths is a suite of qualifications that will help students develop their skills, so that they can benefit from them in the real world, be it in work, study or everyday life.

The course is accessible to students who have a grade C or above at GCSE, and gains the same UCAS points as an AS. The qualifications are accepted by universities http://www.core-maths.org/about-core-maths/universities/ and valued by employers http://www.core-maths.org/about-core-maths/employers /

If you are teaching a Core Maths course from September or thinking about introducing the qualification in the future, Steven Nixon (NW Maths Hub 3 Lead) is willing to visit your school/college to discuss setting up and teaching the course. Steven is a Core Maths lead working with the Core Maths Support Programme (CMSP) who has been teaching Core Maths since September 2014. He can be contacted by email s.nixon@priestley.ac.uk Further details about Core Maths can be found on the CMSP website http://www.core-maths.org/

TSST (SKE)- Secondary Subject Knowledge enhancement programme

An exciting offer for serving and returning secondary teachers who are moving into teaching mathematics, but do not have a previous mathematical qualification. It will enable staff to develop a deeper knowledge and understanding of all aspects of mathematics.

St Helens TSA successfully ran this project in 2014-15 with 10 delegates completing the training programme. In 2015-16, we have recruited 12 candidates, this innovative **Subject Knowledge Enhancement (SKE/TSST) course** is delivered in partnership with experienced staff from **Rainford High School** working to support the maths hub alongside extremely experienced staff from **Liverpool Hope University.**

Please see this flyer http://bit.ly/25NGyek for more details, including a proposed schedule for the training. All school based sessions will be delivered at Rainford High School.

Expressions of interest are now being taken to start training in Sept 2016-17 programme. Please contact: Lisa Bradshaw for further details.

NW Maths Hub 3 local projects include:

Excellent Maths Teacher Programme - Primary

NW Maths Hub 3 invited 30 'Excellent Maths Teachers' from several LAs, to widen collaborative networks, to participate in the 'Excellent Maths Teacher' programme, this is a pilot programme for 12 months (October 2015-July 2016). Participants were selected based on an application process.

The programme has involved 7 face-to face sessions plus 'gap' tasks. Sessions have included: Developing subject knowledge in terms of Problem Solving, reasoning and fluency, developing progressional understanding and subject knowledge linked to place value, and all areas of calculation. Links will also be made on making connections and systematic variation, SKE and building teacher confidence in algebra and fractions, effective monitoring to determine impact including book scrutiny, QA/moderation and standardisation, tracking of progression of skills and action planning and providing effective marking and mathematical feedback.

All sessions have been delivered/facilitated by Tara Loughran.

"Whereas before I, and we as a school, thought we were challenging pupils we were only scratching the surface and not giving pupils the depth, fluidity and reasoning skills needed to fully master mathematics. We as a school have ensured the way we teach mathematics has changed so that pupils have a true understanding and depth before we move on. This has been done through providing pupils with a variety of questioning techniques and a range of experiences. This would not have been done if I hadn't attended the Excellent Maths Teacher Programme as mathematic s results have been good in school but did pupils really have the depth in their mathematical knowledge?" *(Participant quote)*

This programme will run again next year. Further details will follow shortly

Knowsley Maths strategy

NW Maths Hub 3 in collaboration with the NWSIB, Lord Derby Academy and 15 Knowsley Primary schools are working together to implement the principles of mastery teaching using a 5 part lesson design as a structure. Another wave of schools will be given the opportunity to access this programme in 2016-17. If you are interested in being part of this then please contact Lisa Bradshaw (NW3 Maths hub lead) or Josette Arnold, Lord Derby Academy - Jarnold@lordderbyacademy.co.uk

The 'Intervention in mastery project'-

In association with the Edge Hill ECC team. This is a programme in its development and is based on the idea of '**keep up' not 'catch up' in mathematics**. It is a 4 day programme aimed at improving the outcomes for a learner who need 'keep up' strategies. Themes include: The pedagogy of mastery, the pedagogy of intervention and how to manage effective intervention. 4 schools are currently being trained in Wave 1 – St Mary and St Thomas' CE (St Helens), St Ann's CE (St Helens), Huyton with Roby Primary School (Knowsley) and Chorley New Road (Bolton) with a view to this being rolled out wider in the autumn term.

Learn and Lead - Maths Work Group

Focus for 2016-17: To develop a Maths ITT training programme

Audience: all ITT trainees, across the Learn and Lead patch including School Direct Trainees, PGCE (HEI involvement) and SCITT providers.

Overarching theme(s): To improve Maths Pedagogy (progressional understanding) and subject knowledge, to understand the 'Purpose' of mathematics- what are we doing and why? , Teaching for Mastery and Assessment of Mastery- clarity over the principles (based on research), To develop 'Maths for life' and to develop a growth mind set- EVERYONE can do maths!

To find out more about this group contact: Kirsty Haw, Denis Oliver or Lisa Bradshaw.

Developing Mathematical Fluency in Early Years

This is a research project in its development stage.

A significant amount of time has been spent by a number of EYFS practitioners on developing materials through classroom research and practice. An approach that is based on enrichment in conceptual understanding (rather than acceleration through mathematical content) has been designed and trialled by three teachers.

Research has been done into children's accumulation of early number concepts, with particular emphasis placed on the work of American based researcher Arthur Baroody.

Within the materials designed, all children are expected to progress at a broadly similar pace through content, and differentiation is done through the processes and products expected, as well as through the development of thinking skills. Informally, the approach has been identified by all involved as being highly effective, with a particular impact seen amongst struggling learners. For the next phase of the project, 10 schools have been invited to join and trial some of the materials in the autumn term.

Secondary Maths NQT programme

This year we have had 14 Secondary NQT Maths teachers from across Wigan, St Helens, Halton, Knowsley and Southport completing the programme .

The programme is delivered by Lindsay Porter. Lindsay is a former Head of Maths, current GCSE and A Level examiner. She now works as a regional maths advocate for AQA facilitating collaboration between maths teachers and subject leaders across the North West. She believes in a practical approach and is passionate about teaching and learning!Lindsay has recently delivered the Secondary Maths Subject Leader network meetings to colleagues across Wigan and St Helens on behalf of NW Maths Hub3 and will continue to deliver these sessions on a termly basis.

This programme will run again in 2016-2017. Further details are available here:

http://www.sthelensteachingschools.co.uk/NQT_secondary_calendar.html

For further details please contact: lisa.bradshaw@three-saints.org.uk

NWMathsHub3 Primary CPD Opportunities for Summer 2016

Effective Transition from EYFS to Year 1: Thursday 16th June 2016

Effective Transition from Year 2 to Year 3: Thursday 23rd June 2016

Further details are available on the St Helens TSA website

http://www.sthelensteachingschools.co.uk/CPD_calendar_maths.html

Autumn term 2016 programme will be available soon.

Primary Maths Subject Leaders Network

Tara Loughran will continue to deliver this network. We have 40+ subject leads that attend from St Helens, Knowsley, Wigan, Warrington, Sefton, Liverpool, Bolton and Halton.

The final session is on Friday 1st July 2016- 9-3.30pm at St Helens Chamber

The Theme is: Mathematical lesson structure and sequencing to ensure progression throughout the school.

Secondary/Post 16 Maths Subject Leader Network

Lindsay Porter (AQA associate and Secondary Maths lead) will continue to deliver this network in St Helens and Wigan. We now have 25 HOD regularly attending, this has grown from 5 (aut term), 15 (spring term) and 25 now (summer term) and it continues to grow!

The final sessions are on:

Wigan group- 1.30-3.30pm at Birchall CPD Centre.
Wednesday 15th June 2016.
St Helens group- 1.30-3.30pm at Rainford High School.
Monday 20th June 2016.
Themes to include: Critical thinking and Reasoning at KS3, Learning from Shanghai and Singapore, Effective Maths transitions- KS2-3, KS3-4 and KS4-5, New GCSE support, Mastery (teaching for depth), Assessment without levels, CMSP/FMSP, subject knowledge and progressional understanding CPD sessions and resources.

NW Maths hubs working together annual conference is BACK!!

Tuesday, 5th July 2016 at Manchester Metropolitan University, Brooks Building- 9.00am - 3.30pm

Featuring **Key Note Speakers**: Robert Wilne (former Secondary Director NCETM) and Andrew Jeffrey (The Mathemagician)

Workshops: a range of Primary, Secondary and Post 16 available- please see the flyer for further information: http://bit.ly/1UFHLvt

Marketplace: A range of mathematical stalls to browse.

The Cost of the conference is: £50.00 plus VAT (includes resources, free gifts, light refreshments)

To reserve a place or for more information, please visit https://www2.mmu.ac.uk/pdei/about-us/events/detail/index.php?id=4957

We look forward to welcoming you all to another great Maths Conference!

EEF (Education Endowment Fund) Year 2 Reasoning Project with Oxford University

NW Maths Hub 3 was selected as one of only 8 of the established Maths Hubs across the country to lead the **EEF (Education Endowment Fund) Year 2 Reasoning project with Oxford University**. This national research project is designed to promote children's quantitative reasoning - understanding the relations between numbers and being able to use them to solve problems.

The project, using materials designed by researchers at Oxford University and funded by the Education Endowment Foundation (EEF) is being run in the autumn term. The two lead schools: Rectory CE Primary School and Broad Oak Primary School, supported by NW 3 Maths Hub lead and staff from NCETM have been trialling the materials this term. 20 schools from across the NW have been recruited to take part in the roll out. Half will be chosen at random to receive the teaching intervention, the other half will carry on teaching as usual. This group will receive training and the materials for use during the school year 2017/2018.

An earlier EEF trial of the programme showed a positive impact on pupils' numeracy ability.

White Paper and Maths Hubs

'We will continue to raise standards in CPD, introducing measures to support teachers in particular curriculum areas. In Mathematics for example, 35 school-led maths hubs have been established across the country to act as expert leaders in mathematics, pedagogy and curriculum. Learning from practice in those regions around the world. Maths hubs are popularising 'mastery' approaches to mathematics designed to ensure that no pupil's understanding is left to chance, and each step of a lesson is deliberate, purposeful and precise'. (p91 white paper- March 2016).