Dear colleagues,

Thank you for your interest in The Central Maths Hub, we are delighted to have so many schools and institutions involved. Hub activity is achieved through “work groups” and we have a variety of these representing all phases of education. These groups have already started to meet and work on key themes that address clear priorities in mathematics education. In this newsletter you can find out about the work that is already happening, how you can get involved and how you can connect with the hub.

The Central Maths Hub Team
National Projects

Mastery pedagogy for primary mathematics
China-England research and innovation project

This project is some of the first work that all Maths Hubs were involved in and is built around a teacher exchange between the UK and Shanghai. Two teachers from Colmore Infants and Colmore Junior Schools have already travelled to Shanghai and returned with plenty of interesting findings.

In February Colmores are hosting two teachers from Shanghai. The Shanghai teachers, all mathematics education graduates, will teach lessons on their own, and with their host teachers, following exactly the approach they use in their own classrooms. Many schools will have the opportunity to observe these sessions during February and March at Colmore Infants and Junior School.

The key aims of this project are:
• Learn lessons from how maths is taught in Shanghai, with a particular focus on the mastery approach
• Research and develop ways in which similar teaching approaches can be used in English classrooms.

Use of high quality textbooks (linked to Singapore) to support teacher professional development and deep conceptual and procedural knowledge for pupils

This project involves two primary schools (Parkfield Community School and St Hubert’s School) who will be trialling the use of adapted copies of high quality textbooks from Singapore. The two schools working on this project are, in year 1 classes only, trialling these textbooks. The textbooks they have chosen to use are Maths No Problem.

www.mathsnoproblem.co.uk

The teachers involved in this project have already been attending workshops in order to support their lesson planning and delivery of these adapted textbooks.

The key aims of this project are:
• To help teachers and schools develop a mastery approach to mathematics teaching.
• To explore the impact of using high quality textbooks (linked to Singapore) on teacher professional development and deep conceptual and procedural knowledge for pupils.
• To work with and support the development of schools that are keen to innovate and will exemplify good practice in the use of high quality textbooks.
### Local Work Groups

#### BRIDGING THE GAP

| Work Group Leads: | Dawn Convery, Fox Hollies School  
Hollie Hipkiss, Brays School  
Amy Findlay, Cherry Oak School |
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<td>Aims for work group:</td>
<td>The workgroup is specifically looking at the design of a pathway and assessment scheme to support students in transition from the P levels to the New National Curriculum. This work is seen as vital, not only in the special needs setting but, also crucial for teachers working with students with needs in mainstream school.</td>
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<td>Brief outline of work group:</td>
<td>The project is centred on providing access to the New National Curriculum. The “Bridging the Gap” pathway focuses on those children who are moving from working on P levels to beginning to work within the National Curriculum at KS1. If the children are older than reception age, their attainment is measured against the National Curriculum not the EYFS Early Learning Goals</td>
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| Next steps for workgroup | - Developing a curriculum pathway. Sharing ideas on curriculum approaches.  
- Establishing ways of working. Pooling existing resources and creating new problem solving resources.  
- Focussing on assessment and moderation. |
| Work Group Leads: | Emma Penn, Curriculum Leader for Mathematics  
Tudor Grange Academy Solihull  
Claire Duncan, Assistant Headteacher  
World’s End Junior School |
|-------------------|----------------------------------------------------------------------------------|
| **Aims for work group:** | • To discuss strategies for preventing / closing the gap.  
• To identify ‘best practice’ within schools currently.  
• To identify key areas that need to be addressed to prevent gaps from occurring.  
• To identify subject specific pedagogies to support students with areas of difficulty.  
• To devise strategies, approaches and bring forward ideas to develop enrichment activities for lower attainers or those disengaged with maths. |
| **Brief outline of work group:** | A group of primary and secondary mathematics teachers, meeting across 4 sessions (with gap tasks in between) to produce:  
• A collation of strategies currently used to close ‘the gap’.  
• A collation of specific topics that differentiate between students who are becoming fluent and those who are falling behind.  
• A series of sample lessons and reflections. |
| **Key findings within work group so far:** | We have collated our ideas on what is meant by ‘the gap’, and the strategies currently used to close ‘the gap’. We have discussed what best practice in mathematics teaching looks like and looked at articles on the mastery approach, international approaches and problem-solving to compare and contrast our ideas.  
We have collated a list of specific mathematical topics that we have noticed differentiate between students who are becoming fluent and those who are falling behind. |
| **Next steps for workgroup:** | The group is now beginning to think more deeply about how to address the issues identified with regards to best practice in mathematics teaching and the specific mathematical topics where gaps seem to emerge in students’ understanding. As the gap task for session 1, participants have planned and delivered a lesson on one of the key areas of maths identified, in such a way to prevent or reduce gaps in understanding, whilst still ensuring challenge for all. The workgroup participants are also looking at key pieces of research relating to the key mathematical topics where gaps may occur. |
**Work Group Lead:**

Mike Hargreaves, Deputy Head of Maths  
Swanshurst School

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<td>• Increased uptake of level 3 mathematics (A level, A level FM and Core Maths).</td>
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<td>• Schools better informed of HEI needs regarding maths and vice versa.</td>
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<td>• Closer links between local universities and local schools.</td>
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<td>• Smoother transition for maths students from KS5 to HEI.</td>
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<td>• Raising awareness of the importance of doing Maths beyond KS4 for all pupils.</td>
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<td>The workgroup participants are a mix of A level teachers and University lecturers, with the brief to try and smooth the transition from school to University and develop greater dialogue between schools/colleges and HEI. A key part of the workgroup activity is to identify on the ground information as to why students may or may not continue to study mathematics post A-level and to support strategies for increasing participation in mathematics beyond KS5.</td>
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<th>Key findings within work group so far:</th>
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<td>• Universities still require greater clarity about what skills a good A level mathematician will have from the content covered in year 12 and 13. In particular, it is hard to actually unpick what an A grade now tells them about a mathematician as there is a great deal of variability in this.</td>
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<td>• Universities are unsure about Core maths but are actively trying to find out more about these new qualifications.</td>
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<td>• Schools need to know more about how best to prepare pupils for Maths at university.</td>
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<td>• There is a still a large gap from end of key stage 5 to HEI, particularly for those who have not done Further Maths.</td>
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<td>• Students are often unsure about what doing a Maths degree actually entails until they arrive in year 1.</td>
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<td>• Some hub schools will be trialling year 1 university assessments to look at issues around transition e.g. difficulties with mathematical notation.</td>
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<td>• Arranging a maths degree taster day at Worcester university.</td>
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<td>• Producing a top tips document for those thinking of taking maths at university.</td>
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<td>• Raising awareness about the planned changes to A level mathematics and Further mathematics.</td>
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<td>• Further discussing Core maths and how Universities might base offers around this new qualification.</td>
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Work Group Lead: Louise Burnett, Director/Consultant
Bright Pi Education Ltd

Brief outline of work group:
The work group is made up of an incredibly experienced, talented group of primary professionals, all focused on developing teaching and learning in line with the new primary mathematics curriculum. The group are researching current practice in the teaching and learning of place value in Key Stages 1 and 2. The ultimate aim is to provide key subject knowledge and pedagogy support for teachers, to ensure clear progression in this essential area.

Work Group Lead: Elizabeth Bridgett, AST/SLE
Kings Norton Girls’ School

Brief outline of work group:
We are looking at the changes to the maths secondary curriculum and the impact this will have on teachers of mathematics. More specifically:
- To develop a curriculum which focuses on maths as an interconnected subject not as a series of discrete topics.
- To design a curriculum which develops links and connections, develops fluency in using multiple representations and develops problem solving.
- To identify ways of delivering new content through rich tasks.
Communications

If you’d like to join us in our work, contribute ideas, receive support, or just find out what’s happening, you can get in touch with us in a number of ways.

Each maths hub has a dedicated webpage, where you can keep up to date with the work that is already happening and find out about our future plans. You can use this website to get in touch with us and express an interest in any of our work groups.

**WEBSITE**

Central Maths Hub

Led by Bishop Challoner Catholic College, Birmingham


**TWITTER** @centralmathshub

**NCETM COMMUNITY**

Please also join our online NCETM community. Within the community you will find the latest updates from us and what is happening within each of our work groups. It also provides an excellent forum to allow mathematics professionals to engage in dialogue around key issues.

To sign up to our community, you need to be a member of NCETM (registration is free, quick and easy).
Engaging with work groups

Each work group has a community on the NCETM forum, which can be accessed by those within the work group. If you are not already registered with the NCETM it is free, quick and easy to do. Within each work group community, teachers and other educators can post comments and share documents with the wider mathematical community.

To connect with us through our website look out for the buttons in the screenshot below:

If you have any questions about the workgroup please click the button below to send an email to us.

ENQUIRIES

If you would like to contribute in any way to this workgroup please click the button below. You will be asked to provide some details to enable the workgroup leader(s) to contact you.

[If you are not already registered with the NCETM, you will need to do so here. It is free, quick and easy.]

EXPRESS AN INTEREST

New Ideas for work groups

We will soon be looking to further develop local level workgroups to respond to needs and priorities as they arise. If you have an idea for a workgroup and would like to lead this we would love to hear from you.

Please get in contact with us via mathshub@bishopchalloner.bham.sch.uk
A free two day course introducing A level Mathematics teachers to the new Cambridge Mathematics Education Project online resources, the thinking behind their design and their use in the classroom.

The course requires active participation at two face-to-face study days:

- Day 1: Learning about the resources and the CMEP philosophy
- Day 2: Using CMEP to enhance students’ learning

Course dates:

- Day 1: Friday 22nd May 2015
- Day 2: Monday 6th July 2015

Venue: Bishop Challoner TSA, Institute Road, Kings Heath, Birmingham, B14 7EG  Travel Directions

Course fees and application:

The course is free of charge to all teachers of A level Mathematics in state-funded schools.

Refreshments, lunch and resources are included.

Two teachers per school/college are welcome to apply for this course.

For further details and online application form, see mei.org.uk/cmep or email cpd@mei.org.uk.
Tuesday 24th March 2015
Developing inquiry-learning approaches

Wednesday 10th June 2015
Developing problem-solving skills for GCSE and preparing for Core Maths

These two days of professional development are designed to help mathematics teachers develop the problem solving skills and mathematical thinking of students at GCSE level, forming valuable preparation for students who will be facing the demands of new qualifications. Teachers will be introduced to a toolkit of resources designed to develop inquiry-based approaches to problem solving. This will include the use of authentic problems from real workplace situations designed to provide insight into how mathematics might be of real use.

The events should prove of particular value to teachers wishing to improve students’ problem solving in mathematics, with the second of the two days addressing some of the key concerns when preparing students for ‘Core Maths’.

The content of the two days will be different so teachers will benefit from attending both events but may choose to attend for just one day. These events are offered by the Mascil project team from the Centre for Research in Mathematics Education at the University of Nottingham and both days will be held at Jubilee Campus, Wollaton Road, Nottingham, NG8 1BB. The cost of each one-day event will be £80 per person.

Further details and booking information can be found at http://www.nottingham.ac.uk/education/research/CRME/getting_ahead_with_problem_solving/
Leadership in Secondary Maths
Emma Penn & Jeanette Pickard

Jeanette Pickard is an SLE and Central Lead for Maths across the Tudor Grange Trust. She ensures departments are confident with curriculum changes, have relevant provision and intervention to secure pupil progress and success. An experienced Head of Department and Maths Subject Lead, Jeanette has a strong commitment to Maths in schools.

Emma Penn has been Maths Curriculum Leader at TG Solihull, for two years, supporting a rise of GCSE and A Level results during this time. She is also heavily involved with the DfE funded Central Maths Hub, delivering CPD relating to the current changes in the Maths curriculum.

Aimed at leaders or aspiring leaders in Maths
Develop strategies for managing a Maths department
Embed outstanding teaching and learning, including quality assurance
Improve assessment practice and intervention strategy
Gain the tools to support successful implementation of new curriculum in all key stages

Non-alliance: £60 per session/£300 full course
Alliance: £50 per session/£250 full course
TG Trust: Free

Six sessions 1-4pm: Tudor Grange Academy, Solihull, B91 3PD
1. Leadership & developing others (Feb 12th)
2. Embedding outstanding teaching & learning in Maths (Mar 11th)
3. Outstanding Assessment & feedback in Maths (Mar 19th)
4. Using data and interventions (Apr 16th)
5. Curriculum Planning for new GCSE specifications (May 6th)
6. Post 16 Maths (May 14th)

Contact us 0121 703 8250 or teachingschool@solihull.tgacademy.org.uk to book a place now.
Les Staves has worked with pupils that have profound learning difficulties. Since 1999 he has been working as a consultant to Special Schools and has developed a national reputation for inspirational training. He has written materials and delivered training for the National Numeracy Strategy and the Qualifications and Curriculum Authority. He will be leading a full day session at Bishop Challoner in association with The Central Maths Hub’s Bridging The Gap workgroup.

If you would like to book a place on this course, please do so via email reply to mathshub@bishopchalloner.bham.sch.uk