**Mathematical Thinking for GCSE**

**2017-18 Information and Expression of Interest**

**to be a Work Group school for The Central Maths Hub**

All Maths Hubs are currently recruiting schools to take part in the third year of the Maths Hubs National Collaborative Project on supporting mathematical thinking for the new GCSE. This document provides details of the project and how to apply.

**Background**

Developing mathematical reasoning is one of the key aims of both the new National Curriculum and the new GCSE, and is currently a focus for the national Maths Hubs Network. It is essential that schools develop students who are able to think mathematically and solve problems in a range of contexts. Students need to be able to articulate their reasoning in order to deepen their understanding of the mathematics and develop solutions to problems.

In 2013-14, the NCETM led a successful pilot project that examined multiplicative reasoning at KS3. The professional development model used was commended by the external evaluators. In 2015-16, the Maths Hubs Network built upon this project by establishing a National Collaborative Project to support schools that wanted to develop their approaches to supporting mathematical reasoning across their KS3 teaching. The first cohort of over 180 schools across the 35 Maths Hubs took part in Work Groups and because of the positive impact of the first year, many of these

**What does the project involve?**

Each Maths Hub leads a Work Group, normally involving 5-8 Work Group Schools. A key feature of the workgroup is the departmental professional development carried out in each WGS between the Maths Hub sessions. The Work Group uses the *TIME* *(teachers improving maths education) team* professional development model which combines workshop and departmental activities.

Each school nominates two teachers to lead the project in their school. We recommend that one of them is a strong, experienced post-holder within the department and the other teacher profile is more flexible! These two will work with teachers from the other schools in four Maths Hub sessions workshop sessions during the school year. The workshops will offer appropriate training to enable the WGS leads to facilitate departmental training and run the lesson study approach back in their WGS. In between the workshops, the lead teachers then work with their departments to test and evaluate the impact of the reasoning activities using a lesson study approach with a research question. This process will contribute to the following Maths Hub workshop and also to the national research in this area. As the cycle of workshops and departmental work continues, each department identifies the approaches that they wish to embed as part of their ongoing practice.

The commitment to this cycle and the time involved within departments to carry this out must be endorsed by the Headteacher / Principal in your school.

**What are the benefits for participating schools?**

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

* teachers will deepen their understanding of the subject knowledge and pedagogy related to the teaching and learning of mathematical reasoning
* teachers will plan more effectively to address the reasoning component within all lessons drawing on a wider repertoire of appropriate activities
* the lead teachers will develop their own PD leadership skills and the department will establish effective PD models to support ongoing improvements
* the department will identify resources and approaches that can be built into the schemes of work
* pupils will improve their confidence, fluency and logical precision when they engage in mathematical reasoning and appreciate more the centrality of reasoning when doing and learning mathematics

**Who can apply?**

The Work Group is intended for schools with maths departments that are fully committed to developing mathematical thinking and reasoning skills. In particular, departments should be committed to and have the capacity for engaging fully in this development work during 2017-18. The nominated lead teachers should be experienced leads and teachers who are keen to develop their own practice and to support their colleagues as well. They would be expected to work closely with the head of department in leading change in the department. (Note: The head of department could be one of the nominated teachers.)

**What are the expectations of participating schools?**

Schools chosen to participate in the Work Group commit to the following expectations:

* The two nominated lead teachers will participate fully in all the workshops
* Lead teachers released to attend two full day and two half day workshops and sufficient time back in the department implement and trial suggested strategies. Typically this would involve 6-8 department meetings over the year and time allowed to implement a lesson study.
* The head of department working with the lead teachers will ensure that the department carries out the gap tasks between the workshops including departmental discussion, collaborative planning and lesson study
* The school senior leadership will support the departmental leadership in participating fully in the project and in maximising the benefit to the department
* The project Work Group Lead and / or the HEI partner representative will be welcome to visit the school and observe mathematics lessons in which gap task activities are being used in the classroom.

**What is the funding or charging for the Work Group?**

There is no charge for schools that participate fully in the Work Group. The Maths Hub meets the cost of running the Work Group.

**How do schools apply to take part?**

Schools interested in applying to be part of a Work Group in 2017-18 should complete the expression of interest form below and upload to www.centralmathshub.com/MRGCSE

The Maths Hub will then make contact with you with more details about the process.

**Expression of interest to participate in Cohort 2 of the project**

Please complete and return this by **Friday 3rd November 2017** . Please upload to www.centralmathshub.com/MRGCSE

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| --- | --- |
| Name of school |  |
| School URN |  |
| Maths Hub |  |
| Nominated teachers for Work Group (name and e-mail) |  |
| Head of department (name and e-mail) |  |

|  |  |
| --- | --- |
| Please explain briefly (about 100 words) why the department wishes to participate in the project Work Group |  |

**Confirmation of school commitment (electronic signatures)**

If we are chosen to participate in the Work Group, we understand and commit to the following expectations:

* The two nominated lead teachers will participate fully in all the workshops
* The head of department, working with the lead teachers, will ensure that the department carries out the gap tasks between the workshops including departmental discussion, collaborative planning and lesson study
* The school senior leadership will support the departmental leadership in participating fully in the project and in maximising the benefit to the department
* The project Work Group Lead and / or the HEI partner representative will be welcome to visit the school and observe mathematics lessons in which gap task activities are being used in the classroom

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| --- | --- |
| Head Teacher/Senior Leader | *Signature of Head Teacher/Senior Leader* |
| Head of department |  |
| Work Group teacher 1 | *Signature of Work Group Teacher 1* |
| Work Group teacher 2 | *Signature of Work Group Teacher 2* |