

Mathematical Thinking for GCSE

Work Group Information Sheet

NCP 19-17



Overview

Teachers or departments keen to address the reasoning and problem-solving challenges of the mathematics curriculum and its assessment at GCSE are encouraged to take part in this project. Work Groups will explore professional development activities focusing on practical and accessible classroom-based approaches. The activities themselves also offer a model for wider departmental engagement with professional development processes, and hence could provide the basis of an effective departmental improvement programme in this area.

Who is this for?

All secondary maths departments and teachers wishing to begin or continue a programme of professional development to address the reasoning and problem-solving challenges of the mathematics GCSE. The approaches attempt to address not only the longer development of these skills across all teaching, but also the needs of current KS4 students as they approach GCSE.

In order to maximise the wider impact of the professional development across the department, it is suggested, where possible, that each school sends two members of department, at least one of whom is experienced and has some leadership responsibility within the department.

What is involved?

- Four half day workshops spread over three terms.
- Gap tasks between the workshops will include Lesson Study, allowing wider departmental participation in the professional development.
- As part of the professional development, there will be an evaluation process focussing on the impact of the Work Group.

Intended Outcomes

Participant teachers, and their departments will:

- acquire a deeper understanding of the role of reasoning and problem-solving in the maths curriculum, and how these skills are tested at GCSE
- broaden their repertoire of classroom approaches to support the development of students' mathematical reasoning and problem-solving skills in all lessons
- understand how to plan for further improvement to embed and sustain progress in this area
- begin to see students demonstrate increased confidence in reasoning and problem-solving, while deepening their understanding of the maths content itself.

The wider context

This national collaborative project focusses on one of the national maths education priority areas relating to 'supporting schools and colleges to address the challenges of teaching GCSE Mathematics.'

Each Maths Hub participating in a national project runs a local Work Group, where teachers come together over a period of time to work on areas defined by the project. All Work Groups are subject to a common evaluation process, which collectively provide a body of evidence on the project's outcomes. So, your participation in this Work Group will contribute to your own professional learning, and that of your school colleagues, as well as making a contribution to the improvement of maths education at a national level.

Expectations of participants and their schools

- Schools will need to commit to the release of the same nominated teacher(s) for all four workshops and to support them in the gap tasks. This will include supporting wider staff and department engagement with a Lesson Study between each workshop.
- The department will also support the participating teacher(s) to summarise the impact of Work Group participation as part of the professional development and Work Group evaluation.

Funding

There is no cost to schools for this work group and all sessions and resources are free of charge.

Who is leading the Work Group and when is it?

Nick Mulligan

Thursday 14th November 1.00-4.00pm

Venue: Tarleton Academy, Hesketh Lane, Tarleton, Preston, PR4 6AQ

endeavourlearning.org

If you're interested, what next?

Please email NNWmathshub@queenkatherine.org to register your interest



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