** *North West***

**2019 North West Regional Post 16 Maths Conference**

Wednesday 3rd July 2019, Xaverian Sixth Form College

***A free event for teachers and leaders of Post-16 Mathematics in***

***Schools, Sixth-forms and FE-colleges.***

***The Programme***

**The conference is an opportunity to help you ensure that your institution is equipped to meet the challenges we face in Post-16 Mathematics and to inform you about the best practice and support that is available in our region. There will be a morning and afternoon session and delegates can choose to attend any one or both parts of the day. The focus of our conference will be *Raising Participation* and *Improving Outcomes.* There will particular focus on pedagogy, the use of technology and best practice for GCSE-resit. There will also be an A-level Statistics Conference running alongside this event which delegates can move between if desired. To book for either event use the booking details below and select the appropriate option.**

***Schedule***

9:00 - 9:30 *Registration and Refreshments*

9:30 - 10:30 *Welcome, Introductions & Keynote Address - Rachel Beddoes (MEI)*

10:30 - 11:45 *Optional Workshop 1\**

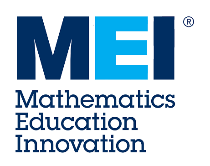
11:45 - 13:00 *Optional Workshop 2 \**

13:00 -13:30 *Lunch*

13:30 - 15:30 *Hub Work Group Meeting/Optional Workshop 3\**

***\*See overleaf for Optional Workshops (please choose one from each section)***

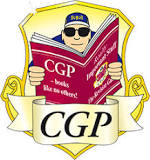
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***Options Session 1***

* ***Embedding Technology:***Over the last two years a work group has been running in the North West looking at how we can embed technology in our teaching. The focus has primarily been A Level Maths but the course has had applications for Core Maths, GCSE Maths, A Level Statistics and Further Mathematics. The course has looked at use of the calculator, spreadsheets and graphing software to enhance teaching and learning as well as pedagogy around the Large Data Set. In this workshop you will get the chance to review some possible applications of all these technologies in your teaching giving you a taste of the work undertaken by the work group and the opportunity to consider joining it next year. The session will be led by **Mick Blaylock** and **Sarah Allott (Loreto Grammar School)**.
* ***New to Level 3 Teaching:*** An Introduction for NQTs/teachers moving into Level 3 teaching for the first time. This workshop will give an overview of support available from the AMSP and Maths Hubs, as well as a taster lesson showing how graphing software can be used to support the teaching of topics in A Level Maths and Further Maths. This session would be suitable for any A-Level teachers, especially those new to teaching A-Level and PGCE students. This session will be led by **Andrew Birch (AMSP)**

* ***An introduction to Core Maths:*** This session will cover everything you need to know about Core Maths – who it’s for, why you should offer it, information about funding, where to find resources and general advice about delivering it. This is the perfect place to start if you are offering Core Maths for the first time or want to know more. The session will be led by **Catherine Van Saarloos (MEI)** (@CoreMathsCat), an experienced Core Maths teacher who has taught in both schools and Further Education and now jointly leads on Core Maths Professional Development for MEI on the Advanced Maths Support Programme.
* ***ASK Maths – The Stoke Project:*** ASK Maths is a project in Stoke on Trent funded by one of the Government Opportunity Areas (OA) with the aim of improving outcomes for GCSE maths resits and functional maths (FM) students. ASK Maths sums up what we want, as we want teachers and students to ask questions, it also stands for **A**spire, **Sk**ills and **K**nowledge. ASK maths is geared to support the staff across the city towards sustainability, so that when the OA disappears the changes will be sustained. During this workshop colleagues from MEI and ASK maths will share their experiences so far. Delegates will then have the opportunity to ask questions and look at resources and lesson ideas that have been used in the project. This session is for anyone that has anything to do with GCSE resit and functional maths in any setting, from LSA to Principal, from a school sixth form with a handful of resits to large FE Colleges with hordes of resit students. This session will be led by **Martin Newton (MEI), Catherine Ream (Stoke Sixth Form), Natacha Shakil (Stoke FE) and Rob Harrop (Newcastle College)** all of whom worked on this project. We are hoping that the ideas explored in this workshop will help lay the foundations for a teacher led work group which will run in the region next year with the hope of having a real impact on outcomes for these learners. Those coming to this session should also consider coming to the GCSE resit session in the next option block and joining for the afternoon workshop on this summer's GCSE papers.
* ***AQA Sponsor Led Workshop:*** Everything you need to start teaching AQA Level 3 Mathematical Studies
* ***A mathematician’s miscellany, and an apology:*** Throughout his career Paul has enjoyed posing and exploring a variety of mathematical problems that lend themselves to relatively elementary mathematics: <https://tinyurl.com/ybmwq3vm>In this session he will share some of the miscellany of problems, and findings, by way of an apology, in the spirit of prestigious mathematicians and collaborators G H Hardy and J E Littlewood, but at a somewhat more modest level! There will be ample opportunity to discuss and explore the topics of interest to the audience. All ideas are accessible to AS/A Level students. This session will be led by **Prof. Paul Glaister (University of Reading)**
* ***HoD/Subject Leaders Teach Meet:*** This session will revolve around the needs and interests of those who sign up. An opportunity to discuss whatever is on your mind, share ideas and get help or advice on everything from what courses to offer, how to deliver them, how to support and train your staff and how to run a successful department. The session will be chaired by **Abigail Bown** **(AMSP)** and **Emma Soper** (SLE and **NW1 Level 3 Lead**)
* ***Statistics Day Conference Option 1*** There is a dedicated **A Level Statistics** conference running alongside the main conference. If you wish to attend the A Level Statistics conference, please select this option on the booking form. Please note it is possible to attend main conference events as well as the Statistics conference – just select your options accordingly so we know when and where to expect you at each session! If you have any questions about the Statistics Conference please email Alex [a.jacques-williams@xaverian.ac.uk](mailto:a.jacques-williams@xaverian.ac.uk)

***Options Session 2***

* **An introduction to Core Maths:** This session will cover everything you need to know about Core Maths – who it’s for, why you should offer it, information about funding, where to find resources and general advice about delivering it. This is the perfect place to start if you are offering Core Maths for the first time or want to know more. The session will be led by **Catherine Van Saarloos (MEI)** (@CoreMathsCat), an experienced Core Maths teacher who has taught in both schools and Further Education and now jointly leads on Core Maths Professional Development for MEI on the Advanced Maths Support Programme.
* ***Sharing Best Practice for GCSE Resit:*** In this session we will discuss the challenges we face with GCSE resit. We will share ideas about best practice from our centres and hear what has been working successfully at Oldham Sixth Form College. Those coming to this session should be prepared to share and think reflectively. We are hoping that the ideas explored in this workshop will help lay the foundations for a teacher led work group which will run in the region next year with the hope of having a real impact on outcomes for these learners. Those coming to this session should also consider coming to the GCSE resit session in the previous option block and joining for the afternoon workshop on this summer's GCSE papers. This session will be led by **Simon Ferris** **(Oldham Sixth Form College)**.
* ***A Level Maths – Subject Knowledge and Pedagogy Enhancement:*** This workshop will have something for everyone from NQT to experienced teachers. Attendees will choose two mini workshops to attend on a carousel system. For those new to A Level teaching or with gaps in their experience there will be options covering **Statistics**, **Mechanics**, **Use of the Calculator** and the **Large Data Set**. Each mini workshop will cover the main subject knowledge, look at exam questions and touch on some aspects of pedagogy. For the more experienced there will be mini workshops focusing on the learning from this year’s A Level Pedagogy work group. Here there will be a choice of three mini workshops covering the development of problem-solving **using goal free tasks**, how to use existing **exam questions** and ideas for **lesson structure**. This session will be led by a variety of teachers from across the region.
* ***Next Steps*** This session aims to provide information about the range of university admission tests that contain mathematics and you can support your students wanting to take such tests. The session will be led by **Chris Saker (MEI).**
* ***Mathematical argument, language and proof in AS and A Level Maths:*** The reformed Mathematics AS/A Level Content requires students to demonstrate a wide range of overarching knowledge and skills, and that these must be applied along with associated mathematical thinking and understanding, across the whole of the detailed Content. In respect of the first of these:
  + OT1 Mathematical argument, language and proof

Three specific aims and objectives are that students must be encouraged to:

* + Reason logically and recognise incorrect reasoning
  + Generalise mathematically
  + Construct mathematical proofs

Aside from learning about different techniques of proof, and developing problem solving approaches, the main purpose of the reforms is to encourage students to develop logical thought, and to be able to provide clear mathematical arguments in support of a result, using the correct mathematical notation and language. This is the primary purpose of OT1. In this session you will meet a range of examples involving different types of proof and mathematical argument, with the aim of supporting students taking their first steps into this vital overarching theme in mathematics. This session will be led by **Prof. Paul Glaister (University of Reading)**

* **Casio Sponsor Lead Workshop:** Engagement, exploration and exam verification -

Effective use of graphic calculators can assist with all of these. This session will introduce some activities to give you a flavour of the benefits that using the Casio fx-CG50 can have in fostering deep conceptual understanding of higher GCSE and A-level maths topics. No previous calculator knowledge or expertise is assumed, and calculators will be supplied for delegate use.

* ***Statistics Day Conference Option 2*** There is a dedicated **A Level Statistics** conference running alongside the main conference. If you wish to attend the A Level Statistics conference, please select this option on the booking form. Please note it is possible to attend main conference events as well as the Statistics conference – just select your options accordingly so we know when and where to expect you at each session! If you have any questions about the Statistics Conference please email Alex [a.jacques-williams@xaverian.ac.uk](mailto:a.jacques-williams@xaverian.ac.uk)

***Options Session 3 - For Those Already Involved in Work Groups***

* ***A Level Pedagogy Work Group:*** This is the final meeting of the year **for those who have been involved in this work group** from across the region. A similar workgroup is likely to run again next year. If you would like to know more please email Alex [a.jacques-williams@xaverian.ac.uk](mailto:a.jacques-williams@xaverian.ac.uk)
* ***Embedding Technology Work Group:*** This is the final meeting of the year **for those who have been involved in this work group** from across the region. A similar workgroup is likely to run again next year. If you would like to know more please email Katie [katie.williams@winstanley.ac.uk](mailto:katie.williams@winstanley.ac.uk)
* ***Core Maths Work Group:*** This is the final meeting of the year **for those who have been involved in this work group** from across the region. A similar workgroup is likely to run again next year. If you would like to know more please email Sarah [sarah.boyle@calderstones.co.uk](mailto:sarah.boyle@calderstones.co.uk)

***Options Session 3 - Options open to all delegates***

* ***A Level Maths Papers Review:*** In this workshop we will review and reflect on this summer’s A Level Maths papers. The session will be led by **Victoria Sims (SLE and NW2 Level 3 Lead) and AMSP regional coordinators.**
* ***A Level Further Maths Paper Review:*** In this workshop we will review and reflect on this summer’s Further Maths papers (all boards). The session will be led by **Abi Bown (AMSP)**.
* ***GCSE Resit Maths Papers Review:*** In this workshop we will review and reflect on this summer’s GCSE Maths papers and reflect on our discussions from the morning sessions. Those coming to this session should be prepared to share and think reflectively about how their teaching this year might have helped or hindered their students in being successful with these exam papers. We are hoping that the ideas explored in this workshop will help lay the foundations for a teacher led work group which will run in the region next year with the hope of having a real impact on outcomes for these learners. Please note we will only be looking at foundation tier papers. This session will be led by **Emma Soper (SLE and NW1 Level 3 Lead)**.
* ***Statistics Day Conference Option 3*** There is a dedicated **A Level Statistics** conference running alongside the main conference. If you wish to attend the A-Level Statistics conference, please select this option on this booking form. Please note it is possible to attend main conference events as well as the Statistics conference – just select your options accordingly so we know when and where to expect you at each session! If you have any questions about the Statistics Conference please email Alex [a.jacques-williams@xaverian.ac.uk](mailto:a.jacques-williams@xaverian.ac.uk)

***Who Should Attend?*** Delegates are welcome to attend just the morning, the afternoon or all day depending on their interests and availability. The workshops should be of interest and value to everyone from NQTs to experienced leaders, those working in schools, Sixth Form Colleges, FE and specialist settings. If you would like any more information about any of the sessions please contact [sarah.boyle@calderstones.co.uk](mailto:sarah.boyle@calderstones.co.uk)

***How to Book*** Please click the link below to book on to the Conference and to pick your options;

<https://forms.gle/eJvEBp6DYCDhrC8J9>

***Venue*** Xaverian College, Lower Park Road, Manchester, M14 5RB

Refreshments will be provided at the venue throughout the day.

Please ensure that you let us know about any dietary requirements when you make your booking.