

Further Mathematics Conference

Queens Hotel, Leeds

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Wednesday 28th February 2018

- 09.00 – 09.30 Tea/coffee on arrival
- 09.30 – 10.30 Introduction and Keynote: *Sue de Pomerai + Richard Elwes*
- 10.30 – 10.50 Tea/coffee
- 10.50 – 11.40 Parallel session 1
- a. Introduction to teaching Pure in AS Further Maths – *Jean Smith*
 - b. Introduction to teaching statistics in FM – *Paul Chillingworth*
 - c. Ideas to enrich your Further Maths lessons – *Claire Baldwin*
- 11.50 – 12.40 Parallel session 2
- a. Setting up/sustaining FM provision - *Claire Baldwin + ACs*
 - b. Introduction to teaching discrete maths in FM – *Sue de Pomerai*
 - c. Recurrence Relations – *James Groves*
- 12.40 – 13.40 Lunch
- 13.40 – 14.30 Parallel Session 3
- a. Introduction to teaching mechanics in FM – *Sharon Tripconey*
 - b. Problem Solving in Further Maths – *Phil Chaffé*
 - c. Use of technology in Further Maths – *Tom Button*
- 14.30-14.50 Tea/coffee
- 14.50 – 15.45 Moving Maths – *Ben Sparks*

Session details

09.30 – 10.30 Introduction and Keynote

The importance of offering Further Mathematics, including universities' perspectives

Sue de Pomerai (FMSP) and Richard Elwes (The University of Leeds)

The keynote will focus on why studying Further Maths is vital for many students. We will look at the data on numbers of students studying AS/A level Maths/Further Maths and highlight the support that the FMSP can offer schools and colleges.

We will also look at the importance of Further Maths for university progression and hear from a university admissions tutor.

10.50 – 11.40 Parallel session 1

1a – Introduction to teaching Pure in AS Further Maths

Jean Smith

Although the content of an AS level Further Mathematics course can vary according to the options chosen by schools and colleges, there is a compulsory core of pure topics common to all awarding organisations. This session will consider some of the main teaching points of this compulsory content and explore possible teaching approaches.

Who this session is suitable for:

Teachers who are new to Teaching Further Mathematics or those with limited experience of teaching the topics in AS FM Pure and wish to refresh their knowledge.

1b – Introduction to teaching statistics in FM

Paul Chillingworth

This session will contain an overview of the similarities and differences in the statistics content of the new Further Mathematics A levels and look at some of the topics covered within them, using some suggested teaching strategies.

Who this session is suitable for:

Teachers who are new to the Statistics elements of Further Mathematics or those who wish to refresh their knowledge

1c – Ideas to enrich your Further Maths lessons

Claire Baldwin

This session provides the opportunity to look again at the Further Mathematics topic of complex numbers and how this links to a range of other topics across the Mathematics and Further Mathematics curriculum. It is a 'hands on' session with several useful classroom activities and teaching approaches. Delegates are asked to bring along a laptop or device with GeoGebra software installed.

Who this session is suitable for:

Teachers who have some experience of teaching the pure maths elements of Further Maths and want some further ideas to enrich their lessons.

11.50 – 12.40 Parallel session 2

2a – Setting up/sustaining FM provision

Claire Baldwin + FMSP Area Coordinators

In this session we will consider different strategies and approaches for setting up and sustaining the provision of AS/A level Further Mathematics, especially in schools/colleges with low numbers of students. There will also be an opportunity to discuss your plans for offering Further Maths with FMSP staff and hear about the support the available.

Who this session is suitable for:

Teachers from schools/colleges who are in the process of setting up AS/A level Further Mathematics. This session is also suitable for teachers from schools/colleges where FM is already offered but the number of students is small and/or FM is under threat.

2b – Introduction to teaching discrete maths in FM

Sue de Pomerai

This session will look at the place of Discrete Maths in the new Further Maths A levels and compare the content across the four Awarding Organisations along with an opportunity to try some engaging practical activities.

Who this session is suitable for:

Teachers who are new to teaching the Discrete Maths elements in Further Mathematics or those who wish to gain an overview of how Discrete Maths is developed within Further Mathematics.

2c – Recurrence Relations

James Groves

Recurrence relations is now included as a topic in the new Edexcel, OCR and MEI syllabuses for Further Mathematics, as part of their Further or Extra Pure papers. This session will look at how the topic is developed along with some examples of using technology and making links with other areas such as proof by induction and differential equations. Delegates might find it useful to bring a laptop to this session.

Who this session is suitable for:

Teachers who are interested in discovering more about this topic.

13.40 – 14.30 Parallel Session 3

3a – Introduction to teaching mechanics in FM

Sharon Tripconey

All students now study mechanics as part of their AS or A level in Mathematics in which they are introduced to the fundamental concepts of motion and force. This session will consider how these key concepts are incorporated and developed in Further Mathematics at AS and A level. The session will include activities to promote discussion and reflection.

Who this session is suitable for:

Teachers who are new to teaching the mechanics elements in Further Mathematics or those who wish to gain an overview of how mechanics is developed within Further Mathematics. The session is suitable for teachers who are familiar with the M1 content (legacy specifications) but have not yet taught content beyond M1 which features in the new specifications for Further Mathematics.

3b – Problem Solving in Further Maths

Phil Chaffé

In this session we will demonstrate how some short but rich problem solving activities can be easily incorporated into teaching Further Pure Mathematics and identify some of the key teaching skills required to do this. The session will focus on matrices but include reference to sources that cover the full range of topics for Further Pure Mathematics.

Who is this session suitable for:

Teachers who have some experience of teaching the Pure maths elements of Further Maths and want some ideas to introduce problem solving into their lessons.

3c – Use of technology in Further Maths

Tom Button

This session will look at ideas for integrating technology into the teaching of complex numbers, matrices, vectors, differential equations and polar coordinates. There will be an opportunity to try using GeoGebra and Graphical Calculators. Delegates are requested to bring a laptop, tablet or smartphone with GeoGebra installed to the session. Graphical Calculators will be provided.

Who this session is suitable for:

Teachers with some experience of teaching the pure maths content of Further Mathematics who wish to integrate the use of technology into their lessons.

14.50 – 15.45 Plenary

Moving Maths

Ben Sparks

An exploration of the emotional side of mathematics, including how the use of dynamic (moving) software can fundamentally change the way we think about the subject. A chance to (re)visit some old classics and some new surprises.