



Advanced Mathematics
Support Programme®

Continuing Professional
Development
Standard

National Centre
for Excellence in the
Teaching of Mathematics



Further Mathematics Online Conference

Online

2nd March 2022

Overview

We are delighted to bring you our 2022 Further Mathematics Conference which will provide engaging ways of teaching Further Mathematics and provide insight into supporting students with university admissions tests.

This year, the conference is split over two days, with two opportunities to attend each day. **Teachers do not need to select their preferred sessions when they apply. Full details of the FM Conference sessions will be sent with the Joining Instructions.**

Day 1

Wed 2 March

12:30-18:00

or

Sat 5 March

9:30-16:00

and

Day 2

Wed 9 March

12:30-18:00

or

Sat 12 March

9:30-16:00

Aims

- Experience interesting and stimulating ways of teaching Further Mathematics
- Deepen your understanding of key topics in Further Mathematics
- Gain insight into supporting students with university admissions tests (selected sessions on day 2 only)

Who will benefit from attending?

These conferences are suitable for any teacher who is currently teaching AS or A level Further Mathematics, or who expects to do so in the near future.

We welcome first time or returning Further Mathematics Conference delegates. Every year offers something new, so please feel free to sign up if you have attended a previous conference.

Materials and Equipment

Delegates will be expected to join via an internet-connected computer or tablet. The sessions will take place in Zoom Webinars.

Recordings of all the sessions will be made available to teachers for a limited period after the event.

Other Information

Teachers do not need to select their preferred sessions when they apply to the FM Conference. Full details of all the sessions, and how to access them, will be sent with the Joining Instructions.

Eligibility

Due to the high demand for this conference we will only guarantee places to teachers in state-funded schools and colleges in England. Other teachers from the UK will be allocated places if there is capacity. We are not accepting applications from teachers outside of the UK.

Programme

All sessions, with the exception of the brief welcome at the start of each day, are designed to last for a maximum of 45 minutes.

Wednesday 2nd March (Day 1)

Time Session Title

12:30 Introduction

13:00 Matrix Multiplication: should you teach the 'how' or the 'why' first?

14:00 Bringing colour to Discrete Mathematics

15:00 Moving pictures: using videos in the teaching of further mechanics

16:00 2nd order differential equations and 2nd order recurrence relations: bridging the gap between continuous and discrete mathematics

17:00 Getting to grips with the coefficient of restitution

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Saturday 5th March (Day 1 repeated)

The content of these sessions will be the same as Wednesday 2nd March.

Time Session Title

9:30 Introduction

10:00 Matrix Multiplication: should you teach the 'how' or the 'why' first?

11:00 Bringing colour to Discrete Mathematics

12:00 Moving pictures: using videos in the teaching of further mechanics

14:00 2nd order differential equations and 2nd order recurrence relations: bridging the gap between continuous and discrete mathematics

15:00 Getting to grips with the coefficient of restitution

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Wednesday 9th March (Day 2)

Time Session Title

12:30 Introduction

13:00 Logical Thinking for all students

14:00 Using Desmos for Statistics in Further Maths

15:00 Introducing polar curves

16:00 Rising to the challenge of the MAT long questions

17:00 Dynamic 3D vectors using GeoGebra and GeoGebra Classroom

Session Description

Reasoning, logic and proof are part of the specification for the Thinking Skills Assessment (TSA), also require the application of questions from different tests, discuss what the examiners are looking for and strengthened for *all* A level mathematics students, not just the top performers.

Desmos is a powerful graphing tool that has functions which can be used in this session we will demonstrate how to use Desmos for a range of functions, tests, probability density functions, regression and errors in data as well as a discussion about how these can be used to support learning.

At primary school, students are first introduced to the Cartesian coordinate system, later, they learn how to plot and sketch lines and curves on a Cartesian coordinate system. This is a chance for students to look at describing position in space in a Cartesian coordinate system. This session will consider an approach for supporting further mathematics learning, building on what they already know and making connections with familiar Cartesian coordinate systems like hearts and flowers!

The Mathematics Admissions Test, used by the University of Cambridge, is a challenging test of extended questions. What are the universities looking for in these questions? How do we help students to develop these strategies? In this session we will discuss the strategies from the MAT examination.

GeoGebra is a powerful dynamic graphing tool that can be used in a variety of ways. In this session we will make use of the built-in 3-dimensional mode to create dynamic and interactive models. We will also use the GeoGebra Classroom to share our work with classes of students and review their interactions in real time. This is a chance for you to build your own, and demonstrate how to use it.

Saturday 12th March (Day 2 repeated)

The content of these sessions will be the same as Wednesday 9th March.

Time Session Title

9:30 Introduction

10:00 Logical Thinking for all students

11:00 Using Desmos for Statistics in Further Maths

12:00 Introducing polar curves

14:00 Rising to the challenge of the MAT long questions

15:00 Dynamic 3D vectors using GeoGebra and GeoGebra Classroom

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Cost

This conference is free of charge.

Key Facts

Event ref:	#9110
Audience:	Teachers
Curriculum focus:	A level Further Mathematics
Mathematical focus:	Mechanics, Statistics, Pure, Discrete, Problem solving, Use of technology
Event format:	Conference
Event length:	2 days
Region:	National
Start date:	Wed 2nd Mar 2022
Fee:	Free

Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/9110>