



Advanced Mathematics
Support Programme®

Continuing Professional
Development
Standard

National Centre
for Excellence in the
Teaching of Mathematics



Problem Solving in Post-16 Maths Conferences 2019

Bristol

16th October 2019

Overview

One-day professional development conferences, designed to support teachers of AS/A level Mathematics and Further Mathematics.

Aims

- Experience interesting and stimulating ways of embedding higher level problem-solving skills in the classroom
- Find out more about the higher level problem solving support provided by the AMSP
- Network and share ideas with fellow teachers

Who will benefit from attending?

This conference is suitable for any teacher who is currently teaching AS/A level Mathematics or Further Mathematics or who expects to do so in the near future. The content included on the day is relevant to supporting the overarching problem-solving theme in the AS/A level Mathematics and Further Mathematics qualifications.

Content

As well as two plenary sessions, there are three workshop sessions. Each workshop session includes three different choices of workshop. Some of these options are repeated to give you the best opportunity to attend your favourite choices.

[Opening Plenary](#)

You can't teach problem solving can you?

Problem solving is often thought of as something that students either can do or can't do. In this plenary you will take a whistlestop tour of the skills students need to be able to solve mathematical problems and the teaching techniques that help students learn these skills.

[Workshop 1 choices](#)

1A Problem solving with data sets

This session will involve problem solving using data sets. Delegates will consider how posing problems for investigation can lead to a greater understanding of trends in datasets.

This workshop will be repeated in session **2A**.

1B Problem solving in A level pure maths

This session will consider the implications of problems having multiple solutions, as well as other attributes of problem-solving questions in A level pure maths. We will consider what it is that effective problem-solvers do, work on solving some A level pure maths problems and consider the teacher's role in how to support students.

This workshop will be repeated in session **3B**.

1C Problem solving in mechanics

This session will look at modelling and problem solving in mechanics. We will explore how mechanics can be used to solve real world problems by developing mathematical models and how simple practical experiments and demonstrations can help overcome misconceptions.

[Workshop 2 choices](#)

2A Problem solving with data sets

This session will involve problem solving using data sets. Delegates will consider how posing problems for investigation can lead to a greater understanding of trends in datasets.

This workshop is a repeat of session **1A**.

2B Cross-curricular problem solving

This session will look at problem solving in different contexts, by developing a mathematical model, making assumptions, using maths to draw some conclusions and then asking the all-important question of whether the solution makes sense.

2C Problem solving and proof

How do you solve a problem like Maryam? This session will look at proof, its fundamental place in problem solving and why one is impossible without the other. The session is laced with questions to get your teeth into.

[Workshop 3 choices](#)

3A Problem solving in university entrance examinations

Do you know your MAT from your STEP? Are you wondering what the difference between the TMUA and the TSA is? In this session you will see examples of university entrance examinations and admissions tests that require mathematical problem solving. You will discover the level of maths required for each test and find out about the support that is available for students who will need to sit these examinations.

3B Problem solving in A level pure maths

This session will consider the implications of problems having multiple solutions, as well as other attributes of problem-solving questions in A level pure maths. We will consider what it is that effective problem-solvers do, work on solving some A level pure maths problems and consider the teacher's role in how to support students.

This workshop is a repeat of session **1B**.

3C Using technology to solve problems at A level

This session will involve using GeoGebra to look at some technology-based problem-solving tasks and also how to use technology to extend conventional A level questions. Please bring a device with GeoGebra installed on it (laptop, tablet or smartphone).

[Closing Plenary](#)

Maths on the back of an envelope - Rob Eastaway

Eligibility

This course is aimed at teachers from state-funded schools, colleges and academies. Teachers from independent schools are welcome to apply for a place. In this case a place will only be granted if there is availability and no bursary will be paid to the school.

Cost

The event is free of charge to teachers from state-funded schools and colleges.

All state schools, academies and colleges whose teachers attend the course are entitled to a bursary of £200 for every teacher from their school who attends. This is paid on confirmation of attendance by the course leader and is subject to the school/college finance department providing payment details.

Schools in [Priority Areas](#) are entitled to an additional £50 bursary.

Key Facts

Event ref:	#6458
Audience:	Teachers
Curriculum focus:	A level Mathematics, A level Further Mathematics, University admissions tests
Mathematical focus:	Problem solving
Event format:	Conference
Event length:	1 day
Region:	South West
Venue:	Mercure Bristol Holland House, Redcliffe Hill, Bristol, BS1 6SQ
Date:	Wed 16th Oct 2019
Course times:	09:30 - 16:00
State-sector subsidy:	£200
Priority Area subsidy:	£250

Registration

For more information, or to register for this event, please visit <https://amsp.org.uk/events/details/6458>