

FURTHER
MATHEMATICS
SUPPORT
PROGRAMME



SUPPORT
FOR PROBLEM-
SOLVING

Support for teachers and students with problem-solving

Providing CPD, student events, resources and mathematics competitions to support the development of students' deeper problem-solving skills





*Just the right level
– challenging for
students and staff*

Support for teachers and students with problem-solving

Mathematical problem-solving involves using familiar techniques and processes in less familiar situations. Mathematical problems are often longer, have less structure and require some inventive strategies and exploration to solve. Problem-solving is rewarding, great fun and accessible to all.

Good problem-solving skills in mathematics are greatly valued by Higher Education and employers. Some university courses now require or encourage students to take additional examinations such as the Sixth Term Examination Paper (STEP), the Advanced Extension Award (AEA) and Mathematics Admissions Test (MAT), which test mathematical problem-solving, as part of their application.

Continuing professional development

The Further Mathematics Support Programme (FMSP) organises one-day courses for teachers helping students to develop problem-solving skills and support students preparing for STEP, AEA and MAT examinations.

Supporting students with STEP, AEA Mathematics and Supporting students preparing for the MAT

These courses provide teachers with an opportunity to think about, discuss and hear others' experiences of supporting students to develop their problem-solving skills, as well as time to work on actual problems. Teachers are given information about STEP and AEA examinations or the MAT and are provided with resources to take away and use with their students.

Incorporating mathematical problem-solving alongside the regular curriculum during year 12

This course demonstrates how to incorporate problem-solving materials alongside AS Mathematics during year 12. Teachers will be provided with specially created problem-solving materials suitable for use with year 12 students and information about STEP, AEA and MAT examinations.

Problem-solving in GCSE Mathematics

This course focuses on problems that can be incorporated into teaching to give KS4 students experience of a range of different types of problems. Teachers have the opportunity to tackle some problems themselves and will leave with a bank of resources that they can use in class.



Maths is an active subject, not about memory but about problem-solving

*USING REALISTIC MATHEMATICS
EDUCATION IN UK CLASSROOMS*

Paul Dickinson & Sue Hough

Student Problem-Solving Events

At these events year 12 and/or year 13 students explore various aspects of problem-solving skills. Activities include working on problems in groups and individually, and writing and communicating solutions. Students will have an opportunity to attempt past STEP/AEA/MAT questions. At some events it is possible for teachers who accompany students to attend parallel CPD sessions about problem-solving; check the FMSP website for details.

Team Mathematics Competitions

The FMSP organises team mathematics competitions for KS4 and post-16 students to stimulate interest in mathematics and to provide an opportunity for students to work together in an enjoyable and competitive environment, developing their mathematical, team-working and communication skills.

The Year 10 Maths Feast

This is a competition for teams of year 10 students which is organised regionally by FMSP and takes place in the spring term. It features a variety of interesting and stimulating activities to inspire students to take their problem solving to the next level.

The Senior Team Mathematics Challenge

The STMC is organised by the FMSP in partnership with the UK Mathematics Trust. This annual competition takes place in November and attracts entries from over 1000 schools.

Resources and information

The FMSP website has a range of problem-solving materials for KS4 and sixth form students including short problems, modelling-style problems, exemplar materials from STEP, AEA and MAT past papers, as well as problems and challenges from previous year 10 and senior team mathematics competitions.



*Resources, ideas,
sharing thoughts
were all invaluable*

The Further Mathematics Support Programme

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About the FMSP

The Further Mathematics Support Programme (FMSP) is a government-funded initiative, supported by the Department for Education, and managed by Mathematics in Education and Industry, an independent educational charity.

FMSP Area Coordinators, covering the whole of England, work with schools and colleges to support and promote the study of AS/A level Mathematics and Further Mathematics and to arrange Further Mathematics tuition for students when their schools and colleges cannot provide it themselves. The FMSP provides training and support to teachers of AS/A level Mathematics and Further Mathematics.

The number of students taking A level Further Mathematics has more than doubled since the programme was established nationally in 2005.

All English schools and colleges can register free of charge with the FMSP to receive expert advice about supporting students at Key Stage 4, about AS/A level Mathematics and Further Mathematics, and about progression to university STEM courses. Registered schools receive free access to extensive online resources and get regular updates about professional development opportunities for teachers and enhancement and enrichment events for KS3, KS4 and sixth form students provided by the FMSP.

Further details

Please check the Teachers' pages and Events pages on the FMSP website for full details of CPD and enrichment events offered by the FMSP.

In addition the FMSP website has further information for students and teachers about the STEP, AEA and MAT examinations as well as details of support available online and in different areas.

www.furthermaths.org.uk

