



Because maths matters!

Welcome to the MEI conference 2026

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Problem solving at KS3

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In the classroom

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Consider the maths problems on your table.

- What aspects of the problem do you like?
- What would you want to change and why?
- If you were to observe a group working on this problem, what questions would you want *them* to ask?



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Use in the classroom

Questions to reflect on – Muhammet & Hurpal

Which year group is this problem most suitable for?

What methods would you expect students to use at different stages of KS2 and KS3?

Which method gives the deepest understanding of the problem?

Should students be encouraged to use algebra? If so, at what point?

Problem 1

Mr Patel writes a number on the board.

- Leon finds $\frac{1}{2}$ of the number.
- Sophie finds $\frac{1}{3}$ of the number.
- Leon's number is 7 more than Sophie's.

What is the number Mr Patel started with?

Problem 2

John is four times as old as Martha.
Five years ago, the sum of their ages was 50.
How old are they now?

Problem 3

208 bars of chocolate were sold from a shop.

$\frac{1}{4}$ of these bars of chocolate were large bars. The rest of the bars of chocolate were small bars.

All the large bars of chocolate were sold for £1 each.

All the small bars of chocolate were sold for 60 pence each.

Work out the total amount of money for which the 208 bars of chocolate were sold. Give your answer in pounds.

Problem 4

With a 42-kilogram sack of flour, a bakery can make enough bread to supply 8 cafés for a week or 12 small shops for a week.

This week, the bakery needs to supply 16 cafés **and** 10 small shops.

How many kilograms of flour are needed to supply them all for a week?

Problem 5

The volume of a cuboid is 90 cm^3 .

If the dimensions are all whole numbers (integers), what could they be?

Can you find all the possible combinations?





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Next steps

Problem-solving for all

A culture of problem-solving should be in every classroom.

Every student should be working with problems of the correct difficulty so that everyone can experience the 'wow' moment.

Developing resilience and questioning skills can help students become better problem-solvers.

Maths Horizons

The newly created pilot resources from Maths Horizons have now been launched.

The pilot resources exemplify how the identified problem-solving characteristics can be used to design questions to develop or reveal pupil understanding. The resources are freely available to anyone who may find them useful.

Each pack contains a series of tasks to be used with pupils, linked to the relevant National Curriculum content statement, alongside answers.