

Introduction: Maths challenge quiz

The UKMT Maths challenge is an annual quiz, prepared by Leeds University, offered to secondary school students to encourage them to use their maths for problem solving, which is a major component of any mathematics assessment at both KS3 and KS4. In most schools the Maths challenge papers will be taken by students who enjoy and are good at maths.

The junior challenge is aimed at students in years 7 and 8, papers can be found by following the link below:

<https://www.ukmt.org.uk/competitions/solo/junior-mathematical-challenge/archive>

The Intermediate challenge is aimed at years 9 to 11 and papers can be found by following the link below:

<https://www.ukmt.org.uk/competitions/solo/intermediate-mathematical-challenge/archive>

You will see that worked solutions are available for each paper on a separate link.

For Parents:

The papers are designed to be completed without use of a calculator or any other maths equipment. The important message is that students understand the vocabulary and are thinking about using an appropriate method, key questions they should be asking themselves are:

- **what does that word mean?** Get them to look it up
- **what maths can I use?** Will algebra help, is it a geometry problem, what rules do they know?
- **what is the best strategy to solve the problem?** Do I need to draw a visual to help, can I use a listing strategy?

If you can ask them to explain their thought process that would be great. If you want to have a go at the problems yourself so that you can discuss your different approaches, even better. As the papers are multiple choice, if a student cannot see how to work out the correct answer, a good approach is to eliminate any obviously wrong answers, and then see which of the answers left looks most likely.

For Students:

You will need some paper and pencil for working out, you cannot use any other equipment. Have a go at every question, if you cannot work it out use elimination and an educated guess. You will need to think about some of your maths skills and remember what words like PRIME, SQUARE, SUM, PRODUCT mean when used in a maths problem. If you are unsure look them up.

You should take an hour for the paper, but if you need a bit more time that is OK.

The answers with full explanation are available but only look at them once you have had a go, it is more fun that way!

You are not expected to get all of them correct!!!, if you can do 10 or more that will be great. Good luck.