YBMA News

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The Newsletter of the Yorkshire Branch of the Association for Mathematics in Education

Readers may ask whether it is still appropriate to call this newsletter "YBMA News" now that the MA has merged into AMiE. Keeping the long-established and familiar title seemed preferable to adopting the ugly and much too long acronym YBAMiE. The altered layout of the header and inclusion of the new AMiE logo will have to do for now.

While proudly displaying the AMiE logo on the web and on printed matter, much remains to be done at the national level. A brand new AMiE website has been promised, but currently we have to make do with what are essentially just the old MA and ATM websites. No flurry of reminders to book a place for the annual conference. Where and when will it be held? Almost certainly not this Easter. Let us instead look at what is happening locally.

It has been said that when planning for the future one should start by looking at the past. Tom Roper's talk does just that and will surely be of interest to readers. While memories of the Covid pandemic may be fading, Julia Gog's lecture will serve to remind us of the importance of mathematics in understanding and coping with such events.

It remains for me to thank Tony Trent, a member of the branch, for his valuable contribution to "Mathematics in the Classroom".

Next Meeting

Tuesday, 24 February 2026
7pm for 7.30pm

MALL 1, School of Mathematics
University of Leeds

Tom Roper

AMiE Librarian
MA President 2017-2018

Problems from the Ladies' Diary 1704-1817

We will look at some of the problems appearing in the Ladies' Diary, collected by Thomas Leybourn, an editor of same, in four volumes, published in 1817. The problems give rise to questions around what they can tell us about the audience for them, what was the mathematics upon which they were based, has that mathematics changed much over the years, and what might that tell us about a future mathematics curriculum.

Advance Notice

Saturday 6 June 2026

Summer Meeting & AGM

Chris Pritchard

A Tribute to Martin Gardner

W.P.Milne Lecture

Wednesday, 25 March 2026
14:30 – 15:30

Esther Simpson Building (LG.08)
University of Leeds

Professor Julia Gog

University of Cambridge

Maths vs Disease

Mathematics provides us with an amazing toolkit to understand complex phenomena in the world around us. Prof. Julia Gog will discuss how mathematical approaches can help to make sense of epidemics of infectious disease, and how maths can even help with government policy decisions in the face of pandemics.

The lecture forms part of a KS5 Maths Day at the University of Leeds. Applications for school groups have closed, but members of the Branch, both current and prospective, can be accommodated. ***Please let us know if you intend to come.***

Previous Newsletters can be found at
https://www.m-a.org.uk/branches/yorkshire

Mathematics in the Classroom

Easier Factorising

GCSE students who cope well with factorising quadratic expressions such as $x^2 - x - 12$ where the coefficient of x^2 is 1, may struggle or simply give up when this coefficient is not 1. Juggling the factors of both the x^2 term and the constant term and finding the correct combination is often too much for those with limited number skills.

We offer the following procedure to overcome this problem. The example on the right illustrates it.

Stage 1: "Drop" the coefficient from the x^2 term and use it to multiply the constant term.

Stage 2: Factorise.

Stage 3: "Undo" the multiplication at Stage 1 by dividing the constant terms in both brackets.

Stage 4: Simplify any fractions.

Stage 5: Multiply each bracket by the denominator of its constant term.

$$6x^2 - x - 12$$
$$\downarrow$$
$$x^2 - x - 72$$
$$\downarrow$$
$$(x+8)(x-9)$$
$$\downarrow$$
$$\left(x+\frac{8}{6}\right)\left(x-\frac{9}{6}\right)$$
$$\downarrow$$
$$\left(x+\frac{4}{3}\right)\left(x-\frac{3}{2}\right)$$
$$\downarrow$$
$$(3x+4)(2x-3)$$

We challenge the reader to demonstrate that this is a sound method for any quadratic expression that factorises to $(ax + b)(cx + d)$ for non-zero integers a, b, c, d.

A Patchwork of Squares - Solution

In the September Newsletter we challenged readers to create a "squared rectangle", i.e. a rectangle filled by non-overlapping squares with no two the same size.

Four of the squares are to occupy the corners of the rectangle as shown on the right and a further seven squares added to fill the remaining space.

The diagrams below show two distinct solutions. In each case the labels give the side lengths of the squares using the least possible integer values.