Secondary Magazine 136

National Centre for Excellence in the Teaching of Mathematics

Welcome to Issue 136 of the Secondary and FE Magazine

With half the summer holidays behind us, and hopefully now relaxed and rejuvenated, we are abandoning the usual Secondary Magazine slots to offer some gentle reads - new and from the archives - to ease you back into thinking about how your classroom might look, sound and feel, come September.

What tone will you be setting with your new classes in their first lesson? How will the room look, and what mathematics will they be engaging with to get started? How will they feel about that first experience? What can you expect from the new Y7 cohort – the first through the new KS2 National Curriculum and SATs?

If you are an NQT, you might like to watch the videos of NQTs reflecting on their first half term. And for those wanting to engage more deeply with the nuts and bolts of what they might be teaching, we have archive articles on using life expectancy tables in probability and statistics lessons, understanding long multiplication by comparing different methods, and a suite of resources to provoke thinking in-depth about algebraic reasoning. We also hope to alert and remind teachers of some of the different sections on the NCETM website, full to bursting with carefully thought-out resources and ideas.

Setting the Tone

How will you start the year with your new classes? Here are one teacher's thoughts in Tales from the Classroom from summer 2012…

An Inspiring Space

What kind of space will your students be learning maths in? What will be on the walls? What equipment will be available? How will desks be arranged?

The NCETM runs the weekly Twitter chat #mathscpdchat (archives available here). In this one from January 2016 (following a previous, related discussion), teachers share pictures of their classrooms. Be inspired by the best bits, and in turn, inspire your students…

Mathemagic

Maths magic tricks are great for wowing a new class (see *Setting the Tone*, above). They can be used for in-depth work, encouraging students to look for mathematical structure to explain the 'magic'. Using algebra to generalise and show how a trick works for 'any number' can be a good demonstration of algebra's power to clarify the opaque. Once tricked a few times, students can be challenged, starting simply, to write their own 'magic' tricks.

This article, from August 2009, gives us a few of the best magic tricks, leaving the unravelling to you and your students…

What will the new Y7s be like?

While we can't provide individual personality profiles, in this feature, we try to help you interpret the new KS2 data, and to understand how the new Y7 cohort might differ from previous years.

First, there is an overview of what the KS2 results mean, and how to interpret them, and secondly, primary teacher Dan Polak offers a personal reflection on how his school adapted to the demands of the new national curriculum and SATs, and how that has impacted on the Y6 leavers this year.

NQTs reflect

Just qualified? Not sure what to expect in September? In these video clips (recorded five years ago, but still relevant today), from the NCETM microsite Mathematics Resources for Teachers in Training, seven Newly Qualified Teachers share their wisdom from their first half term as qualified teachers.

Secondary Magazine 136

National Centre for Excellence in the Teaching of Mathematics

Ideas to provoke thought, and to replenish your resources file

Always looking for the 'best' way to teach long multiplication? In this article from February 2016, we suggest that students might benefit most from comparing different methods and trying to work out why the more mysterious ones work…

Statistics and probability lessons are more likely to be meaningful when real and relevant data is used, though finding data in raw form, which has not already been 'handled' is not always easy. In this article from October 2015, together with this from February 2011, we suggest ways of using life expectancy data, for understanding probability and its relevance to life insurance calculations. There are also suggestions for international, gender and other comparisons for deepening students' understanding of statistics, and a link to the up-to-date data.

Ready to engage more deeply with how we and our students understand algebraic reasoning? This set of resources, developed for our microsite Mathematics Resources for Teachers in Training (but just as relevant to more experienced colleagues) combines thought-provoking questions, commentary, and pedagogy with resources for tackling the various misconceptions that can lead to poor understanding of algebraic structure.