



Welcome to another issue of our Primary Magazine, which has now been serving primary teachers for 90 issues with a varied collection of articles related to maths education and mathematics professional development - all of which are available in the [Primary Magazine Archive](#).

Contents

We are taking a break from our usual structure for this edition to provide you with a chance to revisit articles as you enjoy your summer break. We have grouped the chosen articles under three headings:

- [Aims of the National Curriculum and Teaching for Mastery](#)
- [Mathematics in Science](#), and
- [Try this at home](#).

Next month we will have articles focussed on **what can be learnt from the end of KS1 and KS2 tests papers** and **preparing for Y6**.

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Aims of the National Curriculum and Teaching for Mastery

We have chosen five articles which reflect the importance of the aims of the national curriculum (developing fluency, reasoning and problem-solving), and the focus on teaching for mastery, which has driven much of the work of NCETM over the past two years, including the five big ideas to develop mastery:

- Coherence
- Representation and structure
- Mathematical thinking
- Variation
- Fluency.

Article 1: [Representations for Number](#) (Primary Magazine 72, February 2015)

The importance of using representation to support development of conceptual understanding and to demonstrate understanding of mathematics is explored here in the context of number.

Article 2: [The Singapore Bar](#) (Primary Magazine 56, October 2013)

As well as representing mathematical ideas with concrete materials, pictures can be used to support and demonstrate thinking. One pictorial model is the bar model and this article introduces it as a tool for supporting problem-solving.

Article 3: [Mental Fluency](#) (Primary Magazine 70, December 2014)

Looking at the first of the aims of the national curriculum, this article focuses on establishing a shared understanding of what is meant by 'fluency', identifying that mental fluency includes noticing relationships in order to be efficient, making decisions, and being flexible.

Article 4: [Progression in Reasoning](#) (Primary Magazine 64, June 2014)

This article explores the meaning and intention of the second aim of the national curriculum from Y1 to Y6 and can be read alongside the [Progression Maps with reasoning](#).

Article 5: [Progression in Problem Solving](#) (Primary Magazine 65, July 2014)

This article looks at how progression in problem-solving is not clearly identified within the content of the National Curriculum and offers ideas for how to make sense of this progression from Y1 to Y6.

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Mathematics in Science

These articles explore opportunities for mathematics and mathematical thinking within the science programmes of study and we have chosen one for each year group, so that there is something for everyone:

- Y1: [Seasonal Changes](#) (Primary Magazine 68, October 2014)
- Y2: [Animals, Including Humans](#) (Primary Magazine 70, December 2014)
- Y3: [Forces and Magnets](#) (Primary Magazine 74, April 2015)
- Y4: [Sound](#) (Primary Magazine 71, January 2015)
- Y5: [Earth and Space](#) (Primary Magazine 73, March 2015)
- Y6: [Evolution and Inheritance](#) (Primary Magazine 77, July 2015).

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Try this at home

These articles have been selected as they provide an opportunity for you to try out ideas for yourself, playing games, creating artistic pieces and problem-solving.

- Play some maths games - [Maths games for Early Years](#) (Early Years Magazine 19, May 2011)
- Make a love heart - [Focus on...St Valentine's Day](#) (Primary Magazine 7, February 2009)
- Paint like Mondrian - [The Art of Mathematics](#) (Primary Magazine 11, June 2009)
- Create an outdoor work of art - [Andy Goldsworthy](#) (Primary Magazine 17, November 2009)
- Explore Fibonacci-related puzzles - [A little bit of history](#) (Primary Magazine 20, February 2010)
- Make Sierpiński triangles in two-dimensions and build with them in three-dimensions - [A little bit of history](#) (Primary Magazine 25, July 2010)
- Knit yourself a Möbius strip – [Focus on...Mathematical Knitting](#) (Primary Magazine 34, March 2011).