

# Improving continuity in maths across the transition between primary and secondary school (Multiplicative Reasoning)

NCP17-10b



## Overview

Fractions, ratio and proportion have been given a much greater focus in both the recent KS2 and KS3 curriculums and this is also reflected in the new GCSE exams. Deepening pupils understanding of the underlying multiplicative mathematics is crucial to supporting progress across KS2, into KS3 and beyond. This tried and tested Work Group model allows KS2 and KS3 teachers to work together, using specifically designed lessons and research-based professional development materials, to focus on the most effective teaching and learning approaches in this area.

### Who is this for?

Teachers from primary schools or secondary maths departments looking to improve teaching and learning and develop greater continuity of approach across KS2 and KS3 in this significant area of the curriculum. Where possible teachers from linked feeder primary and secondary schools would be ideal.

### What is involved?

Attendance at four workshops, spread over the late autumn, spring and summer term of 2017/18. Each workshop will focus around approaches exemplified in carefully designed lessons with detailed research commentaries and pedagogical guidance.

A chosen project lesson will form the basis of a Lesson Study gap task between each workshop, and provide important opportunities for wider department or school participation and development.

## Intended Outcomes

Teachers will:

- Deepen understanding of multiplicative relationships and develop confidence in the planning and classroom use of the most effective models for developing pupil understanding of topics connected to fractions, ratio and proportion.
- Gain experience and insight into effective collaborative professional development practices including opportunities to lead professional development in their own school or department.

Schools and departments will:

- Have opportunities to develop greater continuity in teaching approaches across KS2 and into KS3 and begin to develop a more coherent curriculum for pupils as they move from KS2 into KS3.

### The wider context

Many pupils find concepts connected with fractions, ratio and proportion difficult, yet many areas of the mathematics curriculum rely on a deep understanding of them. Multiplicative reasoning is key to this understanding and hence crucial to pupil progress across key stages.

Research has shown the effectiveness of a small number of models/representations in supporting pupils multiplicative reasoning skills. By looking at opportunities to develop the consistent use of these models, pupils will be able to build on their understanding from KS2 into KS3 and beyond, developing their fluency, reasoning and problem solving across the wide range of curriculum connected by proportionality.

### Expectations of participants and their schools

Schools will need to commit to the release of the same nominated teacher(s) for all four workshops and to support them in the gap tasks. This will include supporting wider staff engagement with a Lesson Study, between workshops, on one of the project lessons. The school will also support teachers in summarising and evaluating the impact of their participation in the Work Group.

### Funding

There is no charge for teachers and schools to take part in this Work Group. All costs are met by Maths Hub funds, however we reserve the right to charge £15 for non-attendance.

### Who is leading the Work Group?

Bianca Cullimore, Work Group Lead – East Midlands East Maths Hub

#### Workshop dates:

**Session 1 – 18<sup>th</sup> January**

Future sessions to be determined at the first session

### Venue

Sir William Robertson Academy, Main Road, Welbourn, Lincoln, LN5 0PA

### If I'm interested, what next?

To reserve your place please use the link below to our online booking system. For further information please contact Julie Naidu, Maths Hub Administrator, [j.naidu@minster.notts.sch.uk](mailto:j.naidu@minster.notts.sch.uk) tel: 01636 817 377.

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