

Subject Leader Guide for Maths

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Introduction

The new National Curriculum for 2014 places particular pressures on subject leaders in primary and secondary schools in maintaining high quality teaching, effective use of resources and improved standards at a time of curriculum change.

Scholastic Education, publisher of the bestselling 100 Lessons series, has partnered with Babcock Learning and Development Partnership, one of the UK's leading school improvement services, to develop these essential subject guides, which can be used to support your colleagues in understanding and responding to the curriculum changes.

For the first time, the Department for Education has made the new National Curriculum for 2014 available in digital format only. We understand that a printed copy of the Curriculum is a useful tool in communicating these changes and as such a complete printed programme of study for Mathematics Key Stages 1-3 has been included in each Subject Leader's Guide.

Each Guide also offers:

- Explanation of the changes to the English curriculum and the subject leader's role in implementing these changes
- Advice on the content and expectations of the curriculum, and priority areas for each key stage (KS1-3)
- Support for structuring the curriculum including advice on lesson planning and guidance for developing a calculations policy
- Information on Ofsted's expectations and role in inspecting maths teaching in your school.

Finally, we offer a useful checklist for any maths subject leader to follow in moving towards the new curriculum.

We hope this Subject Leader's Guide proves to be a useful tool and wish you every success in implementing the new curriculum in your school.



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Changes to the mathematics National Curriculum

Attainment targets

The previous National Curriculum had four attainment targets with level descriptors. In the 2014 National Curriculum there is one overarching attainment target and no level descriptors with new performance descriptors to be introduced to inform statutory teacher assessment:

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant Programme of Study.

Programmes of Study

The Programmes of Study in the previous National Curriculum were set out for each key stage. In the 2014 National Curriculum they have been set out on a yearly basis for Key Stages 1 and 2, although the curriculum is only statutory at the key-stage level (see below). The 2014 Mathematics Programmes of Study for Key Stages 1, 2 and 3 are arranged in Domains such as, addition and subtraction, fractions, measurement and so on.

The Domains are a convenient way of organising the curriculum on paper. However, it is made clear in the aims that the intention is that these are NOT taught separately but rather that conceptual links are made:

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The Programmes of Study are, by necessity, organised into apparently distinct Domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

Making connections is at the heart of mathematics and teaching should make explicit connections between Domains. For example, the KS1 number and place value objective, *compare and order numbers from 0 up to 100*, should be taught with the measurement objective, *compare and order lengths, mass, volume/capacity*. Similarly, at KS3 there are clear links with, for example, fractions and percentages appearing both in the number and ratio, proportion and rates of change Domains.

Using and applying

There is no Programme of Study for 'Using and applying mathematics' and therefore no progression. It is instead encapsulated in the aims at the front of the maths National Curriculum. These aims are of vital importance to the whole curriculum; it is intended that they are part of all mathematics in schools and understanding the intention and scope of the aims will be an important aspect of creating a curriculum which develops pupils as mathematical thinkers. Thinking is at the heart of mathematics and should be at the heart of mathematical teaching and learning.

The National Curriculum for mathematics aims to ensure that all pupils:

- *become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.*

The subject leader's role in preparing for the new curriculum

Overview

The primary mathematics subject leader has a key role to play in preparing staff for the new curriculum. Auditing against the priority areas above will allow them to develop an overview of the needs in the school and draw up a strategic plan. Auditing may include: talking with pupils, learning walks, observations of teaching, talking with staff, work scrutiny, reviewing planning and data analysis.

One approach is to start with what you are already doing well and clearly identify areas for development as follows:

- Evaluate attainment and progress – information gathered from data analysis and talking with pupils.
 - How well are pupils doing in relation to national standards?
 - Are pupils making good or better progress?
 - Are there differences in attainment or progress across the school? Groups of pupils such as FSM/boys/girls? Key stages or classes?
- Identify pedagogical approaches that are effective – information gathered from talking with pupils, learning walk, observation of teaching, work scrutiny, reviewing planning.
 - How do we teach this area currently?
 - Is the teaching approach consistent across the school?
 - Are there areas of significant expertise or weakness?
 - How do staff feel about teaching in this area?
 - How do pupils feel about their learning in this area?
- Identify staff subject knowledge strengths and areas for development – information gathered from observation of teaching, talking to staff.
 - Do staff feel confident to deliver expectations of new curriculum?
 - Is there evidence that they are confident with subject knowledge?
- Consider the needs of your school community – information gathered talking to pupils, talking to staff, reviewing planning.
 - How well does the maths curriculum reflect your location and the needs of the pupils?
 - Are pupil's interests met through the maths curriculum?

Further guidance on talking to pupils can be found at the Babcock LDP website in Primary Maths Paper 4 and details from Ofsted about work scrutiny and observation are in the section on Ofsted below.

Continuing professional development

Once a subject leader has identified the development needs of staff around the teaching and learning of the new maths curriculum, decisions need to be made about the type of support that will be provided. The Centre for the Use of Research and Evidence in Education (CUREE) reviewed research to identify characteristics of effective CPD which has an impact on pupils and summarised these as:

- *Sustained collaboration with professional colleagues, including both making use of specialist expertise and structured peer support for embedding specialist contributions.*