

Rather than try to encourage children to give up using counting techniques altogether, successful progression appears to rest on children learning to compress counting procedures, for example, being able to count on in 2s starting from any even number or in 5s from any multiple of 5, adding, say, 7 to 38 possibly by partitioning the 7 into 2 and 5 and using the compressed counting on sequence 28, 30, 35.

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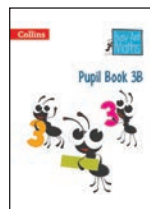
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BOOK REVIEWS

Busy Ant Maths

<http://www.collins.co.uk/category/Primary/Mathematics/>



Busy Ant Maths is the new, flexible whole-school programme for Primary Mathematics produced by Collins. The programme has been developed for the new 2014 National Curriculum and is written by Peter Clarke and his expert team. With over 50 years experience in the classroom between them, the team have been able to draw on their extensive experience of what works.

This flexible programme has assessment at its heart and aims to ensure conceptual understanding and mathematical fluency from the start. It addresses the higher expectations of the new curriculum and aims to reach **every** child, helping them to develop the mathematical knowledge, skills and understanding they need to become fluent and confident.

To achieve this end, *Busy Ant Maths* offers 4 levels of assessment – Diagnostic assessment designed to assist teachers in determining pupils' readiness for a particular unit of work; Short-term 'on-going' assessment which provides immediate feedback through progress

check questions linked to particular learning objectives, enabling teachers to adapt teaching as necessary; Medium-term 'formative' assessment through Assessment Tasks and Assessment Sheets which review and record progress in relation to the National Curriculum Attainment Targets and Long-term 'summative' assessment which draw together data from the Assessment Tasks and Assessment Sheets in an End of Year Class Evaluation document.

The programme provides medium term plans with each year group having 12 chunks of 3 weeks work. These chunks are generally two weeks of number and one week of something else

– shape, geometry or statistics etc. Each week has four lesson plans and 4 rich, hands-on learning activities, allowing the teacher to choose what is most appropriate for their particular class. The weekly overview includes the attainment and pupil targets and a handy chart which tracks back and forward through the curriculum as well as advice on assessment. The lesson plans include everything that you might expect, from prerequisites and success criteria to advice on individualised learning.

Each lesson has a three part structure, with a bank of *Getting Started* activities, what to *Teach* and a *Plenary*. A part-script in the *Teach* section guides teachers on what they might say at key points in the lesson and also promotes relevant pedagogies. There are activities and suggestions for at least three different ability groups in each lesson and these are mirrored in the pupil books. A range of models and images are used to support learning – and the Busy Ant often appears too! The pupil activity books are write in for years 1 and 2, to ensure that the focus is on the maths skills rather than writing out the question. In years 3 to 6, the pupil books are no longer write in and have a more textbook feel to them. These activity books are enhanced by separate twice weekly homework activities.

The programme also provides a subscription website, Collins Connect. This new online learning platform, launching soon, will provide a wealth of content and interactive activities. The resources will be front-of-class teaching and learning tools as well as support for independent learning. There are games, images, animations and videos along with a simple drag-and-drop planning tool. The platform has been developed in consultation with schools and tested extensively to ensure that it is straightforward to set up and intuitive to use, as well as providing all the digital resources you need to deliver the programme.

In addition to all this, there is a further stand-alone resource to help to develop children's fluency in number facts. *Fluency in Number Facts* is a systematic approach to the development of mental and written calculations, a key focus of the 2014 curriculum. There are literally hundreds of whole class, group, paired and individual games and activities.

All of this may sound quite complex,

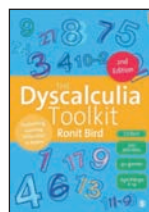
but the teacher materials are straightforward and an overview chart helps you to see where everything fits together. Perhaps the best idea is to explore Busy Ant Maths for yourself through the Collins website at <http://www.collins.co.uk/category/Primary/Mathematics/> Collins Connect is launching soon. Until then emaileducation.support@harpercollins.co.uk for more information or to request a free trial.

Cherri Moseley

The Dyscalculia Toolkit: Supporting Learning Difficulties in Maths (Second Edition)

Price: **£45.99**
 Author: **Ronit Bird**
 Publisher: **SAGE Publications Ltd; Second Edition edition (31 Mar 2013)**

ISBN-10: **1446267199**
 ISBN-13: **978-1446267196**



As a young teacher, I was blessed with the sort of mind that 'got' maths quite easily. So it was that I frequently found myself at a loss with strugglers, as I didn't really understand what it was that they didn't understand.

Many years older and only a little wiser I gradually came to see how extraordinarily complex the mathematical world truly is, and how it is surely the hardest thing for teachers who are not maths specialists (or even those who are) to get across to children in meaningful ways.

So it was that I became fascinated by asking what happens (or does not happen) to cause children to struggle so much in maths. This book does not seek to answer those questions, which I had rather hoped it might. Instead, it gives the reader a series of activities which can be used to help the dyscalculic learner from age 6 to age 14. The elephant in the room, however is this: Is dyscalculia merely a label?

Perhaps wisely the author does not attempt to enter the debate as to whether or not dyscalculia is a specific condition, or simply a way to describe a

whole range of children who have significant problems acquiring any sort of 'feel' for number.

She does provide a very useful list of dyscalculia indicators in the introduction such as an inability to count backwards, a tendency not to notice patterns, and so on. This is very useful for teachers who are attempting to assess whether a child is just a little behind or may need some more targeted intervention. It is also indicative of the fact that the author is obviously speaking from considerable experience rather than from any theoretical standpoint.

Another very useful section is the attention the author pays to the sort of teaching that children need if they are to build a sound mathematical understanding. This is obviously written from very sound pedagogic principles, including the work of Caleb Gattegno and Jerome Bruner, though neither is referenced specifically.

In particular the author mentions the use of Cuisenaire Rods, which I was delighted to see. At a time when we are turning ever more to electronic teaching aids, it is still hard to beat the maths that children can see, do and understand using this simple tool. Indeed, throughout the book, there are numerous examples of activities for children to do with the rods to build a strong concept image of both numbers and the operations which combine them. The author clearly appreciates the importance of children being able to mentally visualise their mathematics and this is a thread running through much of the book.

This is also typical of the body of the toolkit, in which we are treated to a huge number of games and activities using the simplest of items - dice, rods, counters, Dienes, numberlines and so on. As such, it forms a really useful library of over 200 ideas, all indexed according to learning objectives (or more likely to misconceptions that need to be addressed). I think it should be on every SENCO's shelf, if not every teacher's, as these activities should not just be given to the strugglers; there is a raft of good ideas in this book, and it even comes with a CD-ROM with many more ideas and printable resources to accompany many of the activities.

Andrew Jeffery

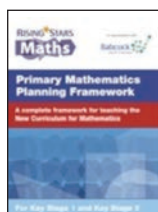
Primary Mathematics Planning Framework

Price: **£125**

Publisher: **Rising Stars Ltd**

<http://www.risingstars-uk.com>

ISBN-13: **978-1-78339-108-0**



2014 has arrived and with it, the new curriculum. Have you begun to look at how you are going to organise the new mathematics curriculum or does it seem like far too big a job and you are hoping for a miracle? Well, the miracle is here!

Although the National Curriculum states that *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*, it offers little support to help students and teachers to make those connections. The content is split under different heading from year to year and things have a habit of appearing under different headings.

Rising Stars, in association with Babcock Learning and Development Partnership, Devon have put together a planning framework for you. The framework focuses on 4 themes: Number Sense, Additive Reasoning, Multiplicative Reasoning and Geometric Reasoning. These 4 themes make the connections between areas of mathematics clear and encourage children to use what they know and understand.

Each year group has been split into 14 sequences (chunks) of either 2 or 3 weeks. Each theme occurs two or (more usually) three times a year, bringing together mathematically connected learning objectives from the different domains in the National Curriculum around a central idea. Each of the 14 sequences lists the Learning objectives, the non-statutory Guidance and links these under clear Success criteria. What really helps me is the speech bubble expanding the success criteria into an *I can* statement focused around the central idea. These statements help me to identify the links across the mathematics curriculum and are useful for assessment. For example in the year 1

sequence 1.8 Number Sense, the Success criteria of *Pupils can measure and explain how to use their counting to measure lengths, weights and capacities becomes I can use 10cm rods and my counting in tens to measure the length of a table in my classroom and then find that number on a tape measure*. In the year 4 sequence 4.8 Multiplicative Reasoning, the Success criteria *Pupils can explain the relationship between multiplication, division and fractions. They can use this understanding to derive facts and solve problems becomes I can explain and represent how many different sandwiches can be made with three types of bread and five types of filling, how many bags of crisps are salt and vinegar in a box of 100 if they form $\frac{2}{5}$ of the box and what happens if you share four bars of chocolate fairly between seven people*.

Pathways charts help you to see which learning objectives appear in each theme in each year group and make it easy to follow each theme through the different year groups. This helps to highlight essential previous learning. Overview charts in poster format (linking years 1 and 2, 3 and 4, and 5 and 6) track progression.

Since the accompanying CD contains editable versions of all the materials, I can change the contexts to fit topics, time of the year, visits etc. I can also change the length and order of the sequences to suit specific needs. This flexibility means that we can use existing resources and not have to start again from scratch. This will save vast amounts of time and leave you feeling 2014 Curriculum ready!

Cherri Moseley

Maths on Fire: Matchstick Maths

Price: **£12.50 + £1.80 VAT**

Author: **John Dabell**

Publisher: **Millgate House Education Ltd**

<http://www.millgatehouse.co.uk/maths/mof>

ISBN-10: **0952750635**

ISBN-13: **978-0952750635**

This book is 'borrowed' from my classroom cupboard by colleagues more than



almost any other! It is phenomenally easy to pick up and use, whilst also providing the scaffolding of

how to incorporate the activities into a lesson plan when such evidence is required. It is easily subdivided into sections that deal with pattern and algebra, generic questions and matchstick puzzles, plus a glossary that is fabulously useful as a stand-alone resource or as a support to pupils creating their own maths dictionaries.

Puzzles are clearly depicted alongside numerical and pictorial solutions (so no hunting in the back for corresponding answers, although that means you have to not leave the book open for perceptive pupils to spot either!) and always come with a question to extend the puzzle or a pupil's thinking further. They can, of course, be photocopied without giving away the answers! Go to the website <http://www.millgatehouse.co.uk/wp-content/web-examples/mof/testing-triangles.html> for a free sample activity.

There is a fully interactive CD to accompany this book. The matchsticks are moveable and new matchsticks can be added or removed using the on-screen matchbox. There is also the facility to create puzzles and a lead in to simple algebra. This means that the children don't need a worksheet (simultaneously practising observation skills and economising on photocopying!) and the interactivity provided means that matchsticks can be easily manipulated to allow discussion of answers and the creation of new puzzles.

I can't speak too highly of this book; the two page spread of questions and question starters "I wonder why...?", "Suppose that we...?" and "How can you tell that...?" to give a few examples, makes a wonderful teaching and learning focus for a department meeting and the following 5 sections of matchstick specific questions give a myriad of possibilities to stretch thinking and understanding in lessons. Buy it and then tell others, you will make friends – I guarantee it!

Fran Watson