Hooked On Mathematics
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In the current competitive market of published schemes and advice from every possible mathematical corner, this book shows that schools can be brave in setting their own path to create their own bespoke programme of study for teaching and learning mathematics.

Introduction
In a nutshell, this book is the story of a school and its journey to create a bespoke, purposeful programme of study for 7-11 year olds. Under the careful guidance and wealth of knowledge that Jenni brings, the enthusiasm and commitment of the teachers and the unwavering support from the Headteacher, together they have produced something that is more than just a curriculum, they have found their way with mathematics, and from reading the book, had fun in the process!

This project is six years in the making, and reading through the pages you can tell. There have been many drafts, multiple edits and purposeful revisions along the way. But it is this hard work and reflection that also gives it the depth and rigor we should be looking for when writing (or adopting) a mathematics curriculum.

What was the rationale?

In 2014 England was offered another version of the Mathematics National Curriculum. Alex (Headteacher) and the teachers at St Martin's CE Primary School are very honest in that they felt this latest curriculum offered confusion in the way mathematics should and could be taught. At the same time mathematics was not popular with the pupils and progress was not where the DfE wanted it to be. Something had to change. One of the core elements you get from reading the book is that this was to be a team effort. It would have been easy to adopt a scheme off the shelf, but you get the sense that this school and community wanted more. They decided to invest in time, continuing professional development and high quality resources; the result: a bespoke programme of study they can be proud of.

Delving Deeper

The programme of study is built around 12 big ideas, referred to as modules:

- Number sense and place value
- Measurement: time and money
- Addition and subtraction
- Geometry: properties of shape
- Multiplication and division
- Measures: length, mass and volume
- Fractions, decimals, ratio and proportion
- Statistics

- Number pattern and algebra
- Geometry: position and direction
- Problem solving and consolidation (2 big ideas but presented together)

The modules broadly match the English Mathematics National Curriculum (2014) and are designed to last half of a half term (called a termlet in the book). This means that a module could last between two and four weeks depending on the length of the term. However, schools are busy places and so realistically each module has 12 full hour or hour and a half sessions attached to it, thus allowing flexibility within the school year.

After the big ideas had been determined the team then worked on breaking them down one at a time. In this way they were able to take their time, and really focus on the content, skills, knowledge and pedagogy needed to teach each module really effectively. Much of the content for each module is taken from NRICH (www.nrich.maths.org) and the Mathematics Enhancement Programme (Centre for Innovation in Mathematics Teaching; the book contains detailed references to this progamme; https://www.cimt.org.uk/projects/mep/index.htm
). The book includes examples for each module with activities drawn from both of these sources.

Each module follows a pedagogical structure, using 12 days/sessions:

- Tantalising mathematical hook and pre-assessment
- Mind maps – focus on the mathematical language of the subject
- Hook
- Content – going through the learning, more formal; maths teaching of concepts
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- Hook / mathematics journals
- Assessment – pupil response ad written assessment task
- Application tasks
- Revisit mind map to go into language
- Memory jogger to go into maths packs
- Sharing event with parents, another class or whole school

You will notice many core elements that any scheme of work should contain: coverage of the National Curriculum, progression, use of rich tasks, an approach to assessment, an opportunity for children to practice skills and retain knowledge, fluency, reasoning, problem solving skills, a focus on using manipulatives, making the learning real and applicable to children and engaging children in an exciting way. This isn't just a programme of study to get through the National Curriculum requirements or pass a statutory test; this is a curriculum to change attitudes, instil confidence and build a wealth of mathematical knowledge that children (and teachers) will remember and use.

One key decision is that all year groups will work on the same module at the same time and this has helped to continue the sense of community the school wanted from investing in a project of this magnitude. However, teachers are also given freedom to draw on their own skills and experiences too. This is often seen in the hooks children are offered at the beginning and throughout the module. These hooks can range from an NRICH task, to playground mathematics or links with another subject.

In summary

You can use this book in many ways. On one level it is an interesting and easy read. There are plenty of photographs and pictures to help the reader get a real sense of what the programme of study offers. On another level, it might cause you to think about certain elements of your own scheme of work, and offer a benchmark against which to compare. Or, you can take the collection of big ideas and develop them to suit your own children and teachers in your school. You may like to start by trying out one of the modules, for example.

Final thoughts

So, take one mathematics adviser, a willing school, a heap of time, fundamental mathematical concepts and pedagogies … mix together (for quite a long time!)… and the result is your own, bespoke mathematics curriculum!

> *"[as a result of this project] we have a community of children and staff who not only love mathematics but who actively embrace the joy that mathematics has to offer."*
>
> (Alex Wingham, HT, St Martin's CE Primary School, Brighton)