Boutcher C of E Primary School Subject Story
Maths

Intent

At Boutcher we aim to provide the highest quality teaching and learning in mathematics. We believe that every child can succeed and progress in maths and we aim to instil this belief in the children themselves. The national curriculum for mathematics requires 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

reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Implementation

The principles of Teaching for Mastery, a product of extensive research into the highly successful teaching practice in Singapore and Shanghai, are used consistently throughout the school. A whole class teaching approach is adopted, keeping the class working together, with no acceleration to new content. This is to avoid superficial, surface learning and foster a deep, secure understanding of all the concepts taught. The learning needs of every child are addressed through conceptual and procedural variation, skilful questioning and appropriate intervention – this provides the necessary scaffolding or challenge for all.

We follow the *Maths, No Problem!* (MNP!) textbook and workbook scheme. This was chosen as it is coherently structured and evidently created using the principles of Teaching for Mastery (T*f*M). It is clear that a great deal of time and thought went into its design. Rather than committing a considerable amount of our time as teachers trying to create resources that follow TfM principles, it makes sense to use expertly created sequences of learning. This is especially true within the context of our single-form entry school where planning and resourcing cannot be shared out. CPD sessions have been designed to improve how our teachers use the resources provided by the scheme. Teachers invest their time understanding how TfM principles are at work within the teaching approaches and ensure they are thoroughly prepared to deliver lessons as effectively as possible. It uses a spiral approach, which builds pupils' depth of understanding and mathematical fluency without the need for rote learning. Learning is presented in small-step, logical sequences organised into individual lessons with a title indicating the focus of learning for that lesson. The sequence of lessons is carefully organised with clear lines of progression.

Concepts are taught slowly and at great depth to ensure the learning is secure and sustainable. Questions are designed to provide intelligent practice, developing and embedding conceptual fluency. MNP! ensures that children are exposed to multiple representations of a concept, using concrete, pictorial and abstract examples simultaneously to support the children's understanding. The scheme places high importance on mathematical talk. Lessons include regular opportunities for the children to discuss their understanding and explain their thinking, both with the adults and their peers. Accurate use of vocabulary and terminology features prominently in our lessons, with

teachers both modelling and expecting it from the children. We believe this will support our children when faced with a range of mathematical problems.

Once concepts and procedures have been learnt, we aim to help children to commit this new knowledge to long-term memory. To increase the chances of this happening, we ensure children have regular opportunities for retrieval practice. Children complete this either verbally, on whiteboards or in their books as part of their '5-a-day' or 'Daily Maths'.


Precise mathematical vocabulary on display

Children are given maths homework to improve fluency. This is set using the online learning platforms *Numbots* and *Times Tables Rock Stars* (TTRS). *Numbots* improves rapid recall of addition and subtraction facts, and *TTRS* improves rapid recall of multiplication and division facts. Teachers actively encourage children to progress through these, some of them creating whole-class rewards for increases in average scores.

Impact

Boutcher adopted a clear TfM approach by adopting MNP! in 2019. The 2025 Year 6 cohort have appeared to benefit from the years of being taught with this consistent approach and its representations - recording very strong results in terms of number meeting the expected standard and in terms of the average score in maths:
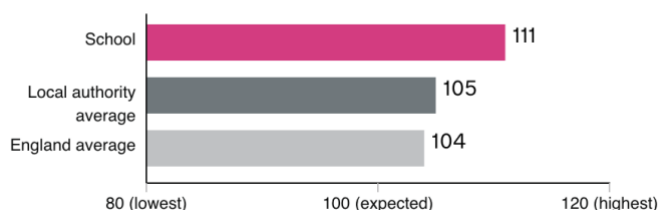
While it is difficult to come to conclusions about the causes of these improvements, the trend in high attainment may well be a reflection of the TfM approach's success combined with the retrieval practice that is now a routine part of school days.

Encouraging children to engage with Numbots and TTRS through weekly certificates has seen an enormous increase in the average minutes logged across the school.

At the time of writing, Boutcher has the fastest average times tables recall speed of schools in the local area.

Class average completion of 'Story Mode' on Numbots has seen an impressive rise too.

Rank	Name	Mean Studio Speed (seconds / question)
1	Boutcher CE Primary School	1.67
2	Albion Primary School	2.00
3	Oasis Academy Johanna, London	2.00
4	St Paul's CE Primary School, Walworth	2.32
5	Snowsfields Primary School	2.44
6	Pilgrims' Way Primary School, London	2.55
7	Friars Primary Foundation School, London	2.70
8	Charles Dickens Primary School, London	2.75
9	Grange Primary School, London	2.99
10	Rotherhithe Primary School	3.00

We can see that this encouragement and motivation has positively impacted the knowledge and confidence of the learners that commit the time to the platforms.

**What can I expect to see in a Maths lesson at Boutcher?**

- Small steps between and within lessons.
- Each lesson has one, small key point.
- A CPA approach where concrete, pictorial and abstract representations are used fluidly to allow deep, sustainable learning for all
- Questions are carefully planned and used throughout the lesson to provoke thought, target fluency and develop reasoning skills.
- Children are given opportunities to share and critique answers or strategies.
- Where possible, children are given opportunities in a lesson and encouraged to identify and recognise patterns and rules, rather than just shown how to find the answer.
- Children are expected to understand and use the correct, precise mathematical vocabulary when explaining their maths. Due to a consistent approach across the school, many of the children are confident to do this both verbally and in written work.
- Adults in lessons will quickly identify children who are struggling within the lesson. Adults will float between tables to support and question children to deepen their understanding.

Examples of our outstanding learning
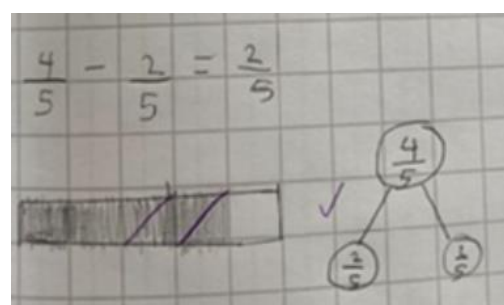
Children use a variety of representations consistently through the school to access their learning. The CPA approach ensures they have a real-world reference point to hook the pictorial and abstract learning to. Below, a child has neatly and efficiently recorded their retrieval practice,

making use of visual models of representation, such as a bar model and a number line, for support.
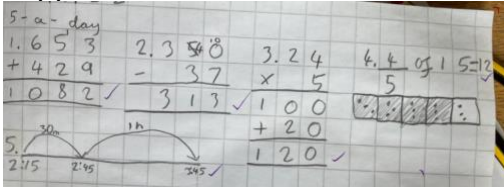
What voice do pupils have?
The Maths coordinator regularly visits maths lessons and speaks with children.
Examples of pupil voice:

- 'Dienes show you what to do.'
- 'The work we do on whiteboards [before we work in our *MNP!* workbooks] gives me good practice so I feel confident I can do it when we leave the carpet.'
- 'When it's hard, I put my hand up for help and then I usually get it in the end.'
- *'*Going back to things we haven't done in a while sometimes shows me what I've forgotten to do and other times, most of the time, it makes me feel good because I know what I'm doing.'
- 'The more time I spend on getting better and getting three stars on *Numbots,* the easier it feels in maths lessons to get the answers right because I just know the answers faster'
- '*TTRS* has made me better at maths. You don't have to think as hard if you just know your times tables. Things feel more obvious.'

How do children's skills progress?
An example of skills progression from Year 1 – 6

Number

Year 1

Count to 100 (first 0 – 10, then to 20, then to 40 then to 100).
Read and write numbers from 0 to 100 (first 0 – 10, then to 20, then to 40 then to 100).
Compare and order numbers from 0 to 100 (first 0 – 10, then to 20, then to 40 then to 100).
Make different number bonds for numbers up to 10. Make number stories Complete number patterns. Use a place-value chart to show numbers in tens and ones.
Find how much more. Count in twos, fives and tens to 100.
Say a number that is 1 more or 1 less than a 2-digit number.

Year 2

Count to 100.
Read and write numbers to 100.
Compare and arrange numbers within 100. Make and complete number patterns.

Year 3

Count to 1000.
Count in hundreds, tens and ones.
Count in fifties.
Count in fours and eights. Tell the value of a digit in a number.
Compare and arrange numbers within 1000. Complete number patterns.

Year 4

Count to 10 000.
Count in thousands, hundreds, tens and ones. Count in twenty-fives. Count in sixes, sevens and nines.
Tell the number that a digit stands for.
Compare and arrange numbers within 10 000. Describe and complete number patterns.
Round numbers and estimate sum and difference.

Year 5

Read and write numbers to 1 000 000.
Tell the place value of a digit in a number.
Compare and arrange numbers within 1 000 000. Count forwards or backwards in steps of 1000, 10 000 and 100 000.
Round numbers to the nearest 10, 100, 1000, 10 000 and 100 000.

Year 6

Read and write numbers to 10 million.
Compare and arrange numbers within 10 million. Tell the place value of a digit in a number.
Round numbers to the nearest 10, 100, 1000, 10 000, 100 000 and 1 000 000.

What successes were there in the last few academic years?

- Teachers are increasingly confident in the delivery of lessons, using TfM approach within MNP! – teachers' feedback demonstrates an appreciation of how cleverly designed the scheme is and how it brings about a deeper understanding.
- Teachers have followed MNP! lesson approaches, which has resulted in a clearer CPA approach within the school. Physical resources are frequently seen across the school.
- Retrieval practice consistently used throughout the school from Year 1 to Year 6.
- Clear summative assessment procedures – end-of-term assessments

What are the priorities in Maths?

- Continued whole staff CPD (including TAs) at the beginning of each academic year - focusing on getting the most out of MNP! and building an improved collective understanding of what that looks like in a lesson especially in terms of what we present to the children.
- Regularly monitoring and reviewing children's learning to identify gaps in understanding through retrieval practice – how are we ensuring children don't fall behind? What happens when they're already far behind? A more consistent and responsive approach should be developed.
- Implement clear expectations of achievements either termly or yearly for *Numbots* from Reception to Year 3 so that large differences in attainment on these platforms do not emerge.