

Maths

Intent

Our intent in the teaching of mathematics comes from our working definition of mastery: *“Teaching for a deep, secure and sustainable understanding of maths.”* We expect that all children will achieve the age related expectations in maths for their year group and do not differentiate by prior attainment. Instead, we provide additional support for children as needed, identified through AFL, which may take the form of using physical manipulatives, representations or adult support. Lessons are carefully designed so that children first secure their understanding of the learning and are then provided with an opportunity to deepen it.

A Mastery Approach

As of September 2019, we have adopted a mastery approach to the teaching of mathematics across the school. We recognise that this is a journey and while we now have a firm model and curriculum in place, we know that this will continue evolve and develop over time.

We joined the Boolean Maths Hub mastery project, which is now the Mobius Hub, in September 2019 and worked closely with the mastery specialist to develop our own practice and curriculum through introducing ‘Can Do Maths’. We are now sustaining this work, having embedded it across the school. The maths subject leader attends ‘Can Do Leader Meets’ and shares new practice / learning with relevant colleagues.

A definition of ‘Mastery’

We currently have a working definition of mastery as *“Teaching for a deep, secure and sustainable understanding of maths.”* We recognise that this definition may change over time as we build our knowledge of mastery teaching.

Planning for maths

Teachers plan from the objectives laid out in ‘Can do maths’. These are based on the mastery principal of ‘small manageable steps’. As well as a clear, progressive set of learning objectives, this also provides resources for the independent aspect of the lesson. These are split into three parts:

- i. Do it (What is it? What is it also)
- ii. Secure it (What is it not? – deliberately placing a misconception or error in front of the children and expecting them to explain what has gone wrong.
- iii. Deepen it (a problem or puzzle)

Teachers lesson design then carefully centres around how to ‘teach this’ small objective. They consider which representations, resources generalisations and numbers are most appropriate. Teachers will also base their input around ‘What is it? What is it also? and What is it not?’

As we have mixed age classes at St Katharine’s and we have recognised the importance of teaching age specific small objectives lessons, maths lessons take the following structure.

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Year group A	Input Whole year group input on manageable step. <i>(Teacher led)</i>	Independent From Can Do Maths document - What is it? - What is it also? - What is it not? - What problems can I solve? <i>(LSA led / supported)</i>	MOT <i>(LSA or Teacher led / supported)</i>
Year group B	MOT <i>(LSA led / supported)</i>	Input Whole year group input on manageable step. <i>(Teacher led)</i>	Independent From Can Do Maths document - What is it? - What is it also? - What is it not? - What problems can I solve? <i>(LSA or Teacher led / supported)</i>

Over the course of the week teachers will alternate which year group receive the first input – this allows the teacher to lead an MOT session for one group.

The MOT (Maths on Track) session is designed to practise learning from previous objectives and to focus on a range of other areas such as mental calculation strategies. This can also be an opportunity for the teacher to lead an intervention or pre-teach for the next day.

Maths Homework

Maths homework across years 1-6 consists of two elements:

Multiplication, number facts and passport maths

- The school buy into Times Tables Rockstars and Number Bots for KS1, which is actively promoted by class teachers.
- In addition to daily maths lessons each class has an additional 20-minute maths slot which focuses on multiplication and division facts, number bonds and other key mental maths objectives from 'Can Do Maths'. The objective of this is to equip children with fast recall of number facts reducing the demand on working memory and supporting their learning across the school. These mental maths objectives have been shared with parents who are encouraged to support their children with this at home. The above mentioned Times Tables Rockstars and Number Bots also supports children with this.

Arithmetic Homework

- Children will have one piece of year group specific arithmetic homework. These contain a page of maths problems, which may be a mix of number facts, mental calculation and written calculation. Teachers carefully put these together to build on previous learning giving an opportunity to practice known strategies. In this respect passport maths is similar to the MOT segment of maths lessons.

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COVID Recovery Curriculum

During the 2020 March – July Lockdown and school closure, home learning in maths was delivered through the use of Can Do Maths Home Learning Packs. These did not introduce new learning but reinforced key areas of learning for each year group (identified as KPI by the Can Do team). These match the DfE ready to progress criteria.

From September 2020 the Can Do Maths termly plans identified where modifications to teaching were required. This wasn't the case for every unit, as some aspects of learning are repeated and revisited across the school, but in some cases children had missed prerequisite steps.

In planning for this teachers have been able to:

- use MOT sessions to add additional steps
- make use of additional problem-solving sessions to teach additional steps
- revise the sequence of learning for a unit to include missed steps
- adapt planned teaching, as content that may in a normal year be a revisit, would now be new learning.

The Can Do Maths termly planning fully supported teachers with this process through their 'Don't panic documents' and highlighted areas in termly plans where adaptations were needed. They also referenced the teaching materials from previous year groups which would support children to fill gaps. Teachers successfully planned with these materials from September to Christmas 2020.

Teachers also continued to make use of pre-teaching and same day intervention, where possible and appropriate, to support individual learners. Ready to progress assessments were also used upon the full reopening of school in September to identify areas which needed focus. Teachers were able to use the analysis of these papers to plan their MOT sessions for the autumn term.

During the 2021 Jan – March lockdown and school closure, teachers delivered, through a mix of recorded and live sessions, the planned Can Do Maths learning objectives for each day. While there was generally a high level of engagement and a lot of learning was shared through Office 365 and Seesaw with teachers, we recognise that some children, for a variety of reasons, may have specific gaps in their learning.

On returning to school the children sat a further 'ready to progress' paper – this covered all the learning from September to March for their year group. This further enabled teachers to adapt MOT sessions and the upcoming sequence of learning to take into account children's current understanding.

For Term 5 and 6, The Can Do Maths team have further supported us through adapted termly plans, which identify where additional lessons can be inserted to cover missed learning or learning which needs repeating.

As a school we have found that the vast majority of our children are ready to progress with their learning and are working at age-related expectations. Where individuals have needed further support, this has been provided through:

- adult support in lessons
- pre-teach sessions (where COVID policies and bubbles allow)
- same / next day intervention

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Impact

July 2022 end of year statutory assessment data	KS1	KS2
% of children reaching expected +	79%	86%
% of children working at Greater Depth	29%	21%