

Mathematics Curriculum Statement

INTENT

Purpose of Study

At St John Fisher and St Thomas More RC Primary, our intention is to provide a high quality Mathematics education which develops an understanding of the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics and a sense of enjoyment and curiosity.

All children are encouraged to be independent learners, who are ready for the next stage of their educational journey. In addition, children are taught to have mathematical fluency and an understanding of different types of reasoning. Each year group works towards the National Curriculum objectives using a mastery problem solving approach - this ensures that pupils have the opportunity to achieve a greater level of understanding.

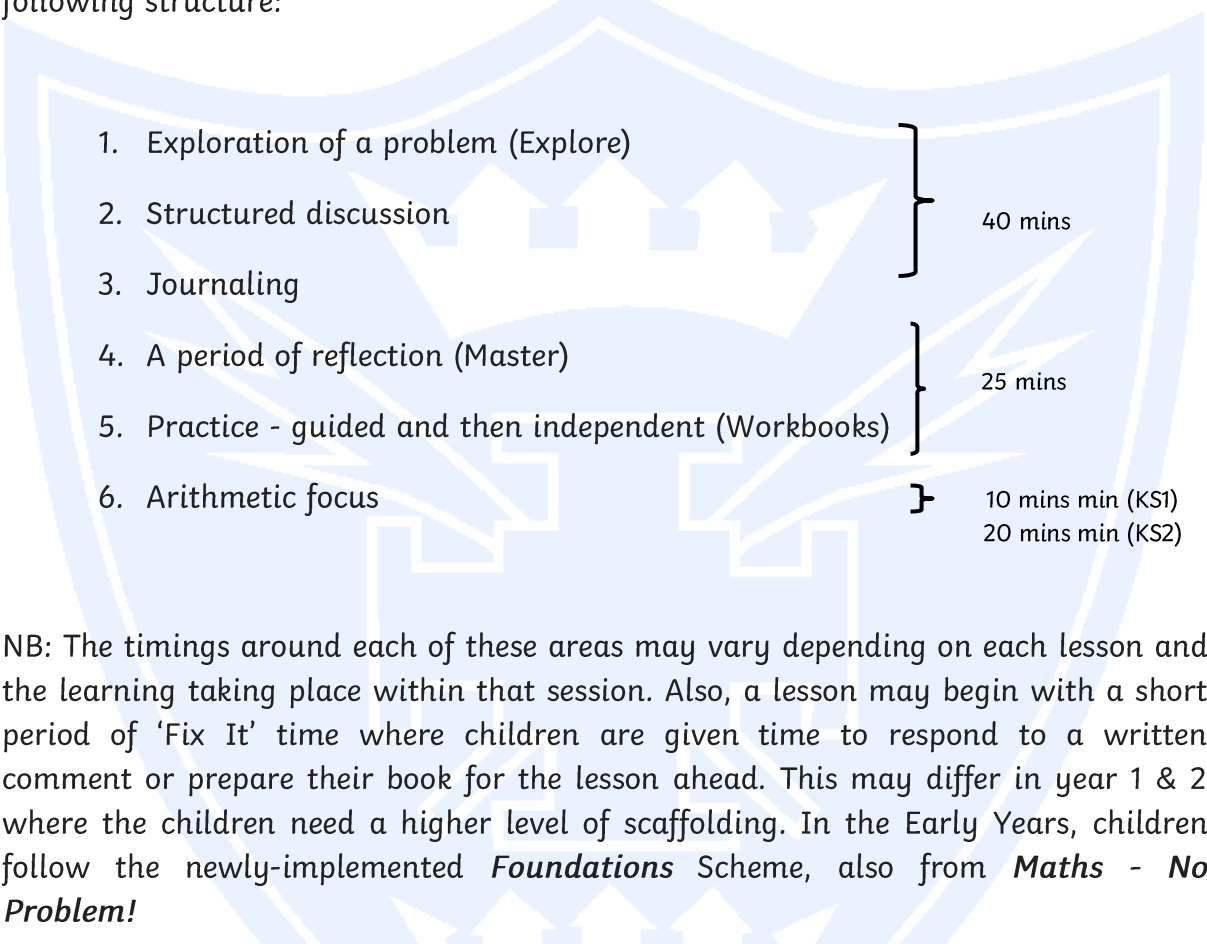
Strong communication skills are encouraged as children work alongside peers to reason, explain and justify their thinking using mathematical vocabulary. All pupils have the opportunity to access their year group objectives and develop the skills that are required for their age group. Pupils are taught to: make connections, identify patterns and draw conclusions about Mathematical concepts and problem solving.

Rationale

Our curriculum is designed to prioritise the mastery of conceptual Maths understanding through the use of real life/ everyday problems as children explore and investigate. Mathematics is essential for everyday life and understanding our world. It enables the development of pupils' natural ability to think logically and solve puzzles and real-life problems. Pupils learn to think creatively and make links between mathematical concepts through exploring: Place Value; Calculations; Fractions, Decimals and Percentages; Measurements; Word Problems; Ratio and Proportions; Algebra; Area and Perimeter; Geometry and Statistics (Algebra and Ratio are explored in Year 6 only). By following a spiral curriculum, our pupils are able to revisit a topic, theme or subject several times throughout their school career. The complexity of the topic or theme increases with each revisit, but new learning has a relationship with old learning and is put in context.

IMPLEMENTATION

At SS John Fisher and Thomas More, we take a mastery approach to teaching Mathematics. We use the DfE approved scheme: **Maths – No Problem!** This has been inspired by the performance of children in Singapore and other Southeast Asian nations and uses high quality, well-researched textbooks. The lessons take the following structure:

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| 1. Exploration of a problem (Explore) | } | 40 mins |
| 2. Structured discussion | | |
| 3. Journaling | | |
| 4. A period of reflection (Master) | } | 25 mins |
| 5. Practice - guided and then independent (Workbooks) | | |
| 6. Arithmetic focus | } | 10 mins min (KS1)
20 mins min (KS2) |

NB: The timings around each of these areas may vary depending on each lesson and the learning taking place within that session. Also, a lesson may begin with a short period of 'Fix It' time where children are given time to respond to a written comment or prepare their book for the lesson ahead. This may differ in year 1 & 2 where the children need a higher level of scaffolding. In the Early Years, children follow the newly-implemented **Foundations** Scheme, also from **Maths - No Problem!**

In classrooms lessons should have high levels of engagement and involvement. Lessons usually begin with an interesting and engaging problem to solve – this is called the *Explore* task. It is the teacher's role to make a lesson accessible to all children. Concrete materials (usually in the form of visual representations or manipulatives) are used in every lesson to support children's thinking as they work through the problem. Pupil talk is seen as a vital part of how children verbalise their thinking and deepen their understanding. Teachers watch and listen to children and assess their needs during the lesson. Teachers will ask probing questions to help move children forward in their thinking. Teachers take the ideas of the children and scaffold them to support their ability to solve the problem. A range of methods for the problem are encouraged so that children show a deep understanding. It is also common for children to write down their thinking in words. Towards the end of each lesson, the children practise what they have learned usually through examples guided by the teacher and then independently in workbooks.

Differentiation

Generally pupils will be grouped in mixed ability pairs/groups.

Differentiation will come through 'outcome' and 'process' (scaffolding).

Higher attainers will be challenged through a range of prompts such as prove it!/ problem posing/ pattern seeking/what if...?

Struggling learners will be supported through the use of concrete materials, providing further context to the questions and communication (discussion, sharing ideas, pupil talk).

Occasionally pupils may be given tasks from a lower year group if they cannot access the learning. This will always come from the *Maths – No Problem!* scheme.

Journals and Workbooks

Journals are used to develop our children's communication skills and record their thought processes, therefore developing conceptual understanding. Teachers' expectations of journals should be high. Over the course of children's time experiencing the lessons, they should become more independent and confident in their jottings.

Teachers are expected to ensure the Explore task is stuck into journals prior to each lesson or at the very beginning of the lesson. Children should write the date in short form and the Learning Objective in their books.

Workbooks are used at the end of each lesson for the pupils' independent work. This is an opportunity for teachers to assess pupils' learning. As the workbook pages provide an appropriate level of challenge, it is not an expectation that all pupils will complete every question or answer them all correctly.

Lesson Planning

Lesson 'planning' is different from lesson design. The textbooks have been designed by expert mathematicians, psychologists and researchers. The teachers' role when planning is to study the lessons in order to bring them to life for the children in their class. They should consider the direction of the lesson and have a strong understanding of the key mathematical concept running through it. Through this, they are able to ask appropriate probing questions and challenge learners.

Lesson slides are annotated with key questions and comments, using either Power Point or Notability. These are then stored on teachers' iPads or computers so that they may be monitored by SLT.

Assessment

Feedback in lessons is usually oral and 'in the moment'. Teachers will annotate and write brief comments or questions as the children are completing their journals. Teachers assess by listening to children's discussions and considering the methods they decide to use when tackling problems.

Marking after lessons is in line with the NCETM guidance - if the journal is clear and shows clear thinking and methods, acknowledgement will suffice (eg a tick or short comment). Teachers may decide to write a question that challenges children's thinking in their books. Children will respond to this in green pen at an appropriate time. It is expectation that there will be regular written challenges for children in their books, which they will respond to.

Arithmetic

Every day teachers will spend 10-20 minutes on a specific area of arithmetic. These sessions are designed to improve speed and accuracy when calculating. In Year 5 and Year 6, sessions may not focus on one particular area of arithmetic – they may comprise of several question types to simulate a test scenario.

IMPACT

Pupil progress is measured on a yearly basis by PUMA tests and the improvements which children make on these. More frequently, the impact of learning is measured by journal assessment and teacher assessment for learning strategies. The sharing of good practice e.g maths journals also allows for children's learning to be monitored. In Year 6, previous SATs papers are also used to inform assessment and planning.

During the foundation stage, the impact of children's learning and the progress they have made is measured by Development Matters and at the end of Reception children are expected to have met the Early learning goals, which include a knowledge of numbers 1-20 and being able to use vocabulary relating to shape, space and measure.

These judgements will be quality assured by subject leaders using first-hand evidence of how pupils are doing, drawing together evidence from pupil interviews, observations of tasks, reading tasks, work scrutinies and discussions with pupils about what they recall from the content they have studied.

These judgements will inform the curriculum and whether children are ready for the next stage of their education.