

## Maths – Intent, Implementation and Impact

At St Matthew's we believe that the basic principle of an effective curriculum is that learning makes a change to long term memory. The intent is that our Maths curriculum facilitates the delivery of this basic principle. In order to do so a strategic approach, based on pedagogical research, must be in place.

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives.

*"Tell me how to do it and I will do it for a day.  
Teach me understanding and I will think for a lifetime."*

### Intent

Our curriculum for maths aims to ensure that all pupils:

- **enjoy** mathematics. We are positive about mathematics and strive to ensure that children feel confident in their own ability and want to learn.
- have access to a rich, balanced and progressive curriculum.
- become **fluent** in mathematics. We promote varied and frequent practice with increasingly complex problems over time, so that pupils develop understanding and the ability to recall and apply knowledge rapidly and accurately.
- can make connections between mathematics and everyday life.
- **reason mathematically** by following a line of enquiry, investigating relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Involves the development of three forms of knowledge:
  - Factual – I know that
  - Procedural – I know how
  - Conceptual – I know why

### Implementation

A 'mastery' approach is being adapted, developed and implemented at St Matthew's for the planning of, delivery of and engagement with mathematics. Review and feedback following the implementation of units as repeated blocks over the academic year, with little to no interlinking and relating of skills and knowledge, was highlighted as one of the main reasons for clear gaps in

*"Be blessed by God, be happy and aspire to be..."*

knowledge and one of the possible causes for slower progression. We are part of the NW Abacus Maths Hub where we are working closely to embed the 'mastery' approach.

We use the White Rose Maths Scheme of Work (with some adaptations for St Matthew's) to timetable mathematical units that are explored progressively, drawing on resources, data and suggestions from reliable sources such as NCETM and [nrich.co.uk](http://nrich.co.uk) to link mathematical talk and knowledge across the various units (e.g., multiplication and area).

When planning, teachers are expected to take the following mastery strategies into account:

- Small steps
- Whole class interactive teaching, active learning. – 'Ping pong' style of delivery
- Implementing the Concrete, Pictorial and Abstract (CPA) approach to introducing, exploring and applying mathematical concepts
- Considering key questions and mathematical vocabulary – *I say, you say, we all say*, approach
- Multiple opportunities for verbal and written/drawn reasoning (explaining and using mathematical vocabulary to explain methods or reasoning) within unit exploration
- Inclusion of relevant problem-solving and reasoning opportunities, where children are expected to draw on and apply multiple concepts to address or approach a challenge
- Modelling of all skills and approaches
- Modelling and sharing of efficient and accurate application of methods
- Opportunities to explore maths concepts/objectives at 'greater depth'
- Include all learners, providing relevant support for those with additional needs (educational, medical or otherwise)
- Ensure children are becoming fluent in number facts.
- Adaptive teaching looks very different with children being taught together. Adaptive teaching takes many forms- it is less activity based, rather outcome based. It includes scaffolding (CPA), high expectations of communication, explanation, problem solving/reasoning and challenge through depth.
- Same day intervention (where possible).
- Units of work will be assessed upon the completion of each one. The answers are analysed and those areas that need addressing are then planned into starters in the next unit. The end-of-year assessment will be completed in May (Year 6 SATs) to provide a snapshot of individual annual progress. Teacher assessment data is collected and analysed three times a year.

## Impact

The exploration of mathematics should be interactive and engaging, with content made relevant to children's real-world experiences and contextualised thus to support consolidation and retainment of knowledge and skill.

Children should approach mathematical study with confidence and enthusiasm, and view tasks and challenges that call for application of varied knowledge across units of work and the selection of multiple skills with self-assuredly and a willingness to collaborate.

"Be blessed by God, be happy and aspire to be..."

Children should know it is reasonable to make mistakes as this can strengthen their learning through the journey to finding an answer.

Approach and response to reasoning activities should improve term on term, with the expectation that by the end of the year, children are happy to accurately define and use mathematical vocabulary introduced by their teacher, as well as complete stem sentences to complete mathematical statements or reasoning.

Teaching and support staff should also see this period of implementation as an opportunity to highlight and further improve concepts that are received well and have clear impact on progress and learning, while also analysing and evaluating practice that needs to be addressed, reviewed or replaced.