







Mathematics

Our approach to Mathematics has three key principles: deep understanding, mathematical thinking and mathematical language, with problem solving at the heart of our curriculum. The ‘mastery approach’ to teaching maths is the underlying principle of ours. Instead of learning mathematical procedures by rote, we want pupils to build a deep conceptual understanding of concepts which will enable them to apply their learning in different situations. We avoid teaching procedures and instead get pupils to develop a deep understanding of Mathematics.

The approach is based around six principles:

1. Belief that every child can and will achieve. **2. Focus** on reasons why children can succeed, rather than excuses about why they will fail. **3. Preparedness** to make a cultural shift. **4. Awareness** that the children’s life chances depend on success in maths. **5. Ability** – fixed ideas are removed about innate ability. Opportunities rather than genetics. **6. Potential** to learn is increased through effort.

INTENT		IMPLEMENTATION		IMPACT	
 <p>Alignment to National Curriculum</p>	<p>The Mathematics Curriculum at St Thomas follows the Mathematics Mastery Programme, and is perfectly aligned to the National Curriculum. All the content is delivered by teachers who have been specifically trained to teach that particular year.</p> <p>We intend to teach a progressive curriculum, which builds upon children’s previous understanding, that enables children to become natural problems-solvers.</p>	 <p>Pedagogical Approaches</p>	<p>The pedagogical approaches to the teaching of Mathematics in the school are closely aligned to the approaches and principles of teaching in other subject areas, with the key elements being:</p> <ul style="list-style-type: none"> -Teachers ensuring that pupils see the ‘purpose’ of each lesson and the content in relation to their lives -Deliberate and intentional retrieval of previous knowledge to build on previous learning -Regular checkpoints and formative assessments within lessons to tailor lessons to the needs of pupils -Exceptionally positive relationships in school that create the conditions conducive to effective learning -High levels of subject knowledge -Making reference to the school rules, values, and the class purpose and culture when teaching; this supports pupils to contribute and engage in lessons and be part of a class community striving to unlock each member’s potential. <p>The school follows a six-part lesson sequence: engage, introduce, consider and practise, going deeper, independent task and reflect. The lessons are carefully designed to ensure pace of learning as well as to regularly check for understanding. Maths Meetings are a vital part of the programme, used to consolidate key learning for 10-15 minutes every day outside of the maths lesson.</p>	 <p>Approach to Assessment</p>	<p>Children are assessed using Star Assessment every 6 weeks. Children who are off track for age-related expectations are assessed every 4 weeks to analyse the effectiveness of the interventions that they are subsequently receiving.</p> <p>From Year 1 to Year 6 children have a bi-weekly mental arithmetic assessment and the results of these are recorded in their books to highlight progress.</p>
	 <p>End Points</p> <p>We are very clear about being ambitious in all year groups and the programme is designed to take the children to greater depth within the statutory assessment frameworks. The aim is for all children to become confident problem solvers who can visualise and represent their understanding in a number of different ways, think like mathematicians rather than just doing the maths and use mathematical language when explaining their understanding.</p>		 <p>Teachers’ Expert Knowledge</p> <p>We are extremely ambitious and have the highest expectations for our children. Our teacher development is central to success of our children, therefore:</p> <ul style="list-style-type: none"> -Teachers are given regular opportunities to access CPD at school and through Mathematics Mastery (new teachers are put onto training at the earliest convenience). -The Subject Leader provides regular updates to staff about upcoming events and developments to the teaching of mathematics across school. -The culture of the school is one which promotes openness and honesty in relation to proactively seeking support for any gaps in subject knowledge; this may be reflected in professional development meeting content, and discussions between colleagues. 		 <p>Performance Data</p> <p>The school uses FFT to set ambitious targets for all children, which are at least in line with the top 20% of pupils nationally. The most recent pupil performance data can be found on the school website.</p>



Sequencing

Our curriculum is cumulative - each school year begins with a focus on the concepts and skills that have the most connections, which are then applied and connected throughout the school year to consolidate learning. This gives pupils the opportunity to 'master maths'; by using previous learning throughout the school year, so they are able to develop mathematical fluency and conceptual understanding.



Addressing Social Disadvantage

We have a firm belief that every child can achieve and that they are entitled to the same knowledge and cultural capital, whatever their background or starting point. As such, we adopt a mastery approach to all of the teaching, having high expectations of all children and scaffolding those with lower starting points to be able to access and achieve these.

The school's key drive is to become a world class school. Our curriculum reflects our drive and this is underpinned by a strong belief that every child can achieve. We understand that children all learn at different speeds, and for a number of reasons come to us with different levels of understanding. In class, children will be supported to achieve the key learning objective for that lesson, this support could look like:

- 1-1 (or small group) during key parts of the lesson.
- Pre-learning before a lesson
- Same Day Intervention- to consolidate the knowledge gained during the lesson
- Every child working on the same concept with some children deepening their understanding using carefully selected challenges and some children accessing the learning with support.

For children with gaps in their learning (from previous units or year groups), there will be interventions to enable the children to fill their gaps.



Local Context

For a proportion of lower attaining pupils, language and development is a key focus. Through highlighting of key, precise mathematical vocabulary and a high expectation for all pupils to ask and answer in full sentences, as well as a large emphasis on teaching modelling and appropriate scaffolding, pupils develop and broaden their vocabulary, which supports them to articulate their responses and reasoning skills. Vocabulary is also shared with families through termly newsletters



Promoting Discussion and Understanding



Knowing More and Remembering More

One of the key elements of the 6-part lesson is the talk task- this is specifically designed for children to rehearse what they have learned up to that point. This segment allows talking about maths and comprehension to be developed, and provides opportunities to use mathematical language. The main focus here is on the children working together in pairs or small groups and talking in full sentences about maths. Developing pupils' language is an important feature of our approach, and taking turns and listening are important to children's development.

Our pupils are expected to all solve the same investigations by the end of the lesson, meaning the key concepts and objectives are met by all pupils. Instead of accelerating higher attainers onto new content, we differentiate through depth, to develop pupils' conceptual understanding.



Teacher Assessment

In our school, we use the Insight software to keep track of children's progress against the standards, having three data points, one at the end of each school term. The check points in lessons are another powerful form of continual assessment for learning - misconceptions can then be immediately addressed.



Pupils' Work



Talking to Pupils

The school has really high expectations of all children in terms of the quality and presentation of their work, which we believe leads to a sense of pride. It is expected that tasks are designed to offer support and scaffold to those who need it, whilst deepening the understanding of someone who has quickly grasped the concept. Teachers regularly share examples of best practise where tasks have been developed to develop a child's learning and get them thinking more deeply about the concept.

All members of the senior leadership team and, particularly, the Mathematics lead talks to the pupils as part of the regular monitoring. The purpose is to explore what they have learnt and what they can remember as well as how much they have enjoyed it. Key improvement actions can be identified as a result.

Links / References

<https://mymastery.arkcurriculumplus.org.uk/>
<https://www.mathematicsmastery.org/primary-programme-teacher-training-classroom-resources?phase=primary&c=62839efb17d4e>