















# 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.

INTENT	IMPLEMENTATION	IMPACT
 <p><b>Alignment to National Curriculum</b></p> <p>The Mathematics Curriculum at St Thomas follows the Mathematics Mastery Programme, which is aligned to the National Curriculum. All the content is delivered by teachers who have access to specific training for that particular year. We intend to teach a progressive curriculum, which builds upon children’s previous understanding, that enables children to become natural problem-solvers.</p>	 <p><b>Pedagogical Approaches</b></p> <p>The school follows a six-part lesson sequence: do now, new learning, talk task, develop learning, independent task and plenary. The lessons are carefully designed to ensure pace of learning and are based around Rosenshine’s principles of Instruction which we follow in school. Maths Meetings are a vital part of the programme for developing mathematical fluency. They provide opportunities to consolidate key learning and also for pre-learning. These happen for 10-15 minutes at least 3 times a week outside of the maths lesson.</p>	 <p><b>Approach to Assessment</b></p> <p>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. We use the Mathematics Mastery half-termy and termly assessments in each year group, mental arithmetic tests in all year groups and teacher judgement to match pupils against the standards. Diagnostic questions are used pre and post unit so that teachers are clear about what the children already know and what they need to know.</p>
 <p><b>End Points</b></p> <p>We aim that, by the time pupils move on to secondary school, all children will be confident problem solvers who can visualise and represent their understanding in a number of different ways. They will think like mathematicians and use correct mathematical language when explaining their understanding. We are very clear about being ambitious in all year groups and the programme is designed to take the children to expected or greater depth within the statutory assessment frameworks</p>	 <p><b>Teachers’ Expert Knowledge</b></p> <p>As with all subjects, teachers are expected to demonstrate good subject and curriculum knowledge and are supported with regular CPD. Our teacher development is central to the success of our children, therefore teachers are given regular opportunities to access CPD through in house training as well as through Mathematics Mastery themselves (new teachers are put onto training at the earliest convenience).</p>	 <p><b>Performance Data</b></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. Data is published maths at the end of KS1 and KS2. The school tracks progress towards these to ensure children are on target for national expectation.</p>
 <p><b>Sequencing</b></p> <p>Our curriculum is carefully sequenced and cumulative - each school year begins with a focus on the key concepts which will then be used and applied to other areas throughout the school year. This gives pupils the opportunity to ‘master maths’; by using their previous learning, enabling them to develop mathematical fluency and conceptual understanding. Opportunities to consolidate knowledge and understanding are present across lessons and from year to year.</p>	 <p><b>Promoting Discussion and Understanding</b></p> <p>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.</p>	 <p><b>Pupils’ Work</b></p> <p>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 scaffolding to those who need it, whilst deepening the understanding of someone who has quickly grasped the concept.</p>
 <p><b>Addressing Social Disadvantage</b></p> <p>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 as needed to enable success. In addition, interventions are used to close gaps. Our use of Rosenshine’s principles alongside the way in which the Ark curriculum is structured ensures all children are given regular opportunities to receive and consolidate past learning and so know more and remember more.</p>	 <p><b>Knowing More and Remembering More</b></p> <p>Mathematical knowledge and skills build from year to year and it is important that pupils can remember and use knowledge and skills from previous learning. Effective questioning by the teacher is key to allow pupils to practise new skills and to help them make links between new material and prior learning (Rosenhine). Opportunities for retrieval practice are included to ensure knowledge is transferred into long-term memory. 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. Rather than accelerating higher attainers onto new content, we differentiate through depth, to develop pupils’ conceptual understanding.</p>	 <p><b>Talking to Pupils</b></p> <p>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.</p>
 <p><b>Local Context</b></p> <p>Sheffield and our school community is increasingly diverse and a greater proportion of our pupils speak English as an additional language. 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.</p>	 <p><b>Teacher Assessment</b></p> <p>St Thomas of Canterbury is part of the Embedding Formative Assessment programme and many of these techniques are used in Maths Mastery to enable teachers to be more adaptive in their teaching. The checkpoints in lessons are a powerful example of continual assessment for learning – this technique means that misconceptions can be immediately identified and addressed.</p>	<p><b>Links / References</b></p> <p><a href="https://mymastery.arkcurriculumplus.org.uk/">https://mymastery.arkcurriculumplus.org.uk/</a>  <a href="https://www.mathematicsmastery.org/primary-programme-teacher-training-classroom-resources?phase=primary&amp;c=62839efb17d4e">https://www.mathematicsmastery.org/primary-programme-teacher-training-classroom-resources?phase=primary&amp;c=62839efb17d4e</a>  <a href="https://sheffieldcc.moderngov.co.uk/mgConvert2PDF.aspx?ID=38614">https://sheffieldcc.moderngov.co.uk/mgConvert2PDF.aspx?ID=38614</a></p>