

A Mastery Approach at Holy Trinity Catholic School

When developing the [mathematics](#) curriculum at Holy Trinity, we have taken much of the content and principles of 'Mastery' taken from the National Curriculum, which reflects the teaching found in high performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan, South Korea and China. We have carefully considered the impact of the cultural differences and the specific needs of our children.

The Principles and Features Characterised in Our Curriculum:

- Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics.
- Most pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.
- Pre-teach interventions that focus on subject knowledge and growth mindset are used to ensure children have the confidence and understanding to access the learning in class.
- Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge.
- Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts in tandem.
- Teachers use precise questioning in class to test conceptual and procedural knowledge and assess pupils regularly to identify those requiring intervention so that all pupils keep up.
- Children are articulate in explaining and justifying their thinking when answering questions.

- Children have opportunities and are taught to work both collaboratively and independently.

The intention of these approaches is to provide all children with full access to the curriculum, enabling them to achieve confidence and competence – ‘mastery’ – in mathematics, rather than many failing to develop the maths skills they need for the future.

Our Curriculum Intent

Our curriculum is designed with the ambitious goal of all pupils achieving mastery in Mathematics; developing a love of the subject and an ability to connect areas of learning and solve problems; and know that they can achieve in the mathematics whilst at Holy Trinity and in the future. To achieve this, we aim to ensure:

All pupils should become fluent in the fundamentals of mathematics, including through varied and frequent practice, so that pupils develop conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.

Mathematics is taught in mixed ability groups that focus on the life skills of collaboration, growth mindset, resilience and problem solving as much as discrete mathematical knowledge. Pupils who grasp concepts rapidly are challenged through rich and sophisticated problems as well as developing their understanding and social skills by supporting others. Those pupils who are not sufficiently fluent with earlier material are provided with opportunities to consolidate their understanding, including through additional pre lesson and post lesson practice.

Key features of the mastery approach

Curriculum Implementation

A carefully considered teaching cycle is employed to ensure the children review the previous learning required for new learning; have an opportunity to develop fluency through carefully planned practice activities and make connections between other areas of mathematics by applying new and existing knowledge in a range of situations.

A detailed, structured curriculum is mapped out across all phases, ensuring continuity and supporting transition. Effective mastery curricula in mathematics are designed in relatively small carefully sequenced steps, which must each be mastered before pupils move to the next stage. Fundamental skills and knowledge are secured first. This often entails focusing on curriculum content in considerable depth for extended periods of time in each year group.

Teaching resources

A coherent programme of high-quality curriculum materials is used to support classroom teaching. Concrete and pictorial representations of mathematics are chosen carefully to help build procedural and conceptual knowledge together. Exercises are structured with great care to build deep conceptual knowledge alongside developing procedural fluency.

The focus is on the development of deep structural knowledge and the ability to make connections. Making connections in mathematics deepens knowledge of concepts and procedures, ensures what is learnt is sustained over time, and cuts down the time required to assimilate and master later concepts and techniques.

The NCETMs White Rose planning facilitates appropriate coverage. Teachers are skilled in developing these ideas and using a wide range of high-quality resources to ensure every learning intention is taught to maximising learning.

Lesson design

Lessons are crafted with similar care and are often perfected over time with input from other teachers and teaching assistants in daily feedforward / feedback meetings, drawing on evidence from observations of pupils in class. Lesson designs set out in detail well-tested methods to teach a given mathematical topic. They include a variety of representations needed to introduce and explore a concept effectively and set out related teacher explanations and questions to pupils.

Teaching methods

Teachers are clear that their role is to teach in a precise way which makes it possible for all pupils to engage successfully with tasks at the expected level of challenge. Pupils work on the same tasks and engage in common discussions. Concepts are often explored together to make mathematical relationships explicit and strengthen pupils' understanding of mathematical connectivity. Precise questioning during lessons ensures that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts. There is no prioritisation between technical proficiency and conceptual understanding; in successful classrooms these two key aspects of mathematical learning are developed in parallel.

Pupil support and differentiation

Taking a mastery approach, differentiation occurs in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems which deepen their knowledge of the same content. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support later the same day: there are very few “closing the gap” strategies, because there are very few gaps to close.

Productivity and practice

Fluency comes from deep knowledge and practice. Pupils work hard and are productive. At early stages, explicit learning of number bonds and multiplication tables and inverse operations and commutative laws is important in the journey towards fluency and contributes to quick and efficient mental calculation. Deliberate practice leads to other number facts becoming second nature. The ability to recall facts from long term memory and manipulate them to work out other facts is also important. Communicating the importance of this learning to our children so they take ownership of their learning is key part of our mastery approach.

All tasks are chosen and sequenced carefully, offering appropriate variation to reveal the underlying mathematical structure to pupils.

Professional development and training of teachers

Providing the high-quality professional development is a constant goal for our school to ensure we are always improving the quality of our teaching and the children's learning. All our teachers have deep subject knowledge, and deep knowledge of how to teach mathematics. They engage in collaborative planning and are continually seeking to improve their effectiveness.