

Maths curriculum approach and lesson structure overview

School Vision

Through our Christian Faith, we acknowledge our responsibility to all, to enrich lives and show love and respect within our school. We believe in educating the whole child. We cherish everyone and encourage everyone to treat each other as unique individuals. We want the children of St Margaret's at Hasbury to be caring and respectful towards one another; learn to be confident and courageous in the face of challenges; be the best they can be.

'Live life in all its fullness' (John 10:10)

St Margaret's at Hasbury provides opportunities for children to develop as independent, confident, successful learners with high aspirations, who know how to make a positive contribution to their community and the wider society. We believe that childhood should be a happy, inquisitive, inspirational time in our lives where there are no limits to curiosity and new experiences.

Mathematics is a core subject. It enables children to make sense of the world around them through the development of fluency, reasoning and problem solving skills. It enables children to explore and understand patterns around them and to appreciate relationships in everyday lives.

At St Margaret's at Hasbury we believe that all children can succeed at mathematics and we ensure that we create independent, resilient, creative, emotionally intelligent and curious learners, who are confident and courageous in the face of challenges; be the best they can be and believe that,

'With God, everything is possible.' (Matthew 19:26)

Maths at St Margaret's

- Our Maths curriculum follows the National Curriculum Programmes of Study. Staff use the White Rose Scheme Version 3 along with the Ready to Progress Guidance. Maths teaching is responsive and adaptive. In the Early Years the principles of the EYFS framework will be followed, alongside the White Rose scheme.
- Our Maths curriculum is based on cognitive theory (Bruner, 1960). We believe that even the most complex material can be understood by young children if it is properly structured and presented.
- Staff know what children need to know in order to learn the next concept, which will result in an alternation to long-term memory. "If nothing has altered in long-term memory, nothing has been learned." (Ofsted, 2019). Children have opportunities to revisit previously taught content
- To support memory, retrieval practice is planned for and children experience distributed learning over time (Vlach and Sandhofer, 2012) where learning events are spaced out so that the forgetting curve is interrupted, thus supporting memory retention.
- Children are taught in whole-class groups where high quality first teaching is evident. All children work on developing knowledge together at the same time, allowing all children to access concepts before moving on to the next piece of knowledge in the curriculum progression sequence. This ensures that no child will be left behind. Children with SEND may need a curriculum or support that is additional to or different from others in order to support their individual needs.
- All staff review progress throughout a lesson, so that if a child is struggling to understand a concept, they can quickly intervene so that everyone is ready to move forward during the next lesson.

Our Mastery in Mathematics curriculum:

St Margaret's uses the teaching for mastery approach which focuses on 'the five big ideas':

- Representation and Structure
- Mathematical Thinking
- Fluency
- Variation
- Coherence

Children learn through the use of the CPA (Concrete, Pictorial, Abstract) approach. Children need opportunities to explore mathematical concepts using concrete and practical experiences and equipment, which link to pictorial representations in order to reason abstractly. This will develop an enquiring mind and thus hone investigative skills.

At St Margaret's at Hasbury, we believe that all children can succeed at mathematics. We foster a 'we can' attitude towards Maths and we believe that ability is not fixed. The teaching for mastery approach supports children learning together with appropriate scaffolding and challenge. Staff use their strong subject knowledge to challenge and engage all children so they develop a love of learning that enables everyone to achieve. All staff offer immediate feedback and intervention so that children have the opportunity to gain a deeper understanding and develop a broader understanding of mathematical concepts.

Our definition of Mastery:

Mastery is not simply memorising facts to answer test questions: it is about enquiry to develop an understanding in and manipulation of numbers to problem solve. It means using one's knowledge appropriately, flexibly and creatively and to apply it in new and unfamiliar situations.

Children are given opportunities to develop their fluency, reasoning and problem solving throughout lessons. Children are then challenged further to show a deeper understanding and prove that they have mastered concepts. Staff plan daily opportunities for retrieval practice so that learning is transferred from working to long-term memory.

Aims:

That all children:

- develop a positive attitude to mathematics so they gain success and pleasure;
- become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately;
- can solve problems by applying their mathematical skills to a variety of problems with increasing sophistication, including unfamiliar contexts and in real-life scenarios;
- can reason mathematically by following a line of enquiry – developing and presenting a justification, argument using mathematical language..

Lessons

- Throughout the school children are taught one Maths lesson a day which lasts between 45-60 minutes. Children in Reception, Y1 and Y2 also complete a ten minute Mastery Number session. This may be as part of the Math's lesson or taught at another time during the day.
- Staff explicitly teach appropriate age-related vocabulary expectations for their year group. Vocabulary are explicitly taught and reviewed daily with children. To support vocabulary development staff use STEM sentences which reinforce concepts.
- Lessons must include a flashback starter which provides opportunities for children to retrieve prior knowledge. This supports the transfer of knowledge from working to long term memory.
- Staff will provide feedback from the previous lesson which will highlight examples where children have, e.g. use the calculation pathway effectively or where a misconception has led to an incorrect answer etc. Vocabulary will be explicitly taught each lesson.
- Staff will use the I do, we do, you do modelling techniques to support children. This will also allow staff to identify where children may need additional guided practice for moving onto independent practice or where flexible groupings may be required. Staff will use metacognitive strategies where appropriate.
- Staff use on the spot assessment for learning opportunities to be responsive to the needs of all children. The lesson and learning opportunities can be adapted when needed

Lesson Structure

- **Flashback** – retrieval activity supports the transfer of knowledge from working to long term memory.
- **Feedback**– staff share whole class feedback. This is linked to misconceptions from the previous lesson.
- Children are **explicitly taught vocabulary** and opportunities to review vocabulary daily are planned for. Vocabulary should be shared with parents so they can revisit this at home with their child.
- **I do, we do, you do modelling** - the teacher **models a concept** to the whole class. Children repeat the concept with the teacher. The completed model stays visible for the whole lesson and can be stuck into books. This section of the lesson enables staff to identify children may require additional **guided practice**.
- **Independent practice** - children apply the model to a task. The teacher acts of a facilitator to learning. Guided and Independent practice and tasks will include opportunities for children to develop fluency, reasoning and problem-solving skills
- **Review** – staff concludes the lesson by either recapping the model, correcting a common misunderstanding identified in the pupil's models, setting a higher-order question as a discussion task or pre-teaching the new model for the next lesson.