



Maths

Intent

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

National Curriculum Aims:

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solution

“Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.”

– William Paul Thurston

At St Hilary School we are committed to ensuring that children are able to recognise the importance of maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We have a drive and passion to ensure all pupils enjoy mathematics, and to see the purpose and relevance of their learning through ensuring individual success in the subject. We also aim to develop children's curiosity about the subject giving them plenty of opportunities to investigate, solve problems and reason mathematically in various ways.

We intend to:

- Ensure our children have access to a high-quality maths curriculum that is both challenging and enjoyable.
- Provide our children with a variety of thought-provoking mathematical opportunities, which will enable them to make deeper connections within the wider curriculum and beyond.
- Ensure children are confident mathematicians who are not afraid to take risks and are resilient when solving problems.
- Fully develop independent learners with inquisitive minds who have secure mathematical foundations and a keen interest in self-improvement.

Implementation

Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6. At St Hilary, we follow the national curriculum and use White Rose Schemes of Work as a guide to support teachers with their planning and assessment. However, we use many other resources (including NCETM, NRich and I See Reasoning) in order to enrich the children's mathematical experiences, scaffold and support learners and challenge children so their depth of understanding is thorough.

- At the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition.
- Most, if not all lessons, begin with a recap of previous content. This can be achieved through activities such as: 'Fluent in 5', Times Tables Rock Stars, Flashback 4 and quizzes.
- Lessons use a Concrete, Pictorial and Abstract approach to guide children through their understanding of mathematical processes.
- Clear modelling (using the CPA approach) is crucial as the mastery approach incorporates using objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.
- Resources are readily available to assist demonstration of securing a conceptual understanding of the different skills appropriate for each year group.
- Children move through the different stages of their learning at their own pace although the teacher will generally teach the whole class together before scaffolding or extending each child as necessary.
- Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking. Questioning is just one of the myriad of strategies used to deepen children's understanding further.
- Children who have shown their understanding at a deep level within the lesson or unit, will have opportunities to apply these skills in greater depth activities. These should be challenging and ensure that children are using more than just one skill to be able to answer the mathematical problems. Often, children will complete 'Dive Deeper' tasks where they use and apply their own knowledge. (An example of this can be seen below).
- Revise and Review consolidation lessons are used to revisit previous learning and ensure Maths skills are embedded.
- Homework is set to develop and review children's learning.
- Where possible, links are made with other subjects across the curriculum.
- The calculation policy is used within school to ensure a consistent approach to teaching the four operations over time.
- Children are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems / puzzles.
- A love of maths is encouraged throughout school via links with others subjects, applying an ever growing range of skills with growing independence.
- Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.
- Through our teaching we continuously monitor pupils' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our teaching. Summative assessments are completed at the end of each term; their results form discussions in termly Pupil Progress Meetings and update our assessment tracker - iTrack. The main purpose of all assessment is to always ensure that we are providing excellent provision for every child.

Impact

Pupil Voice - Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.

Evidence in knowledge - Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential. Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes the recollection of times tables.

Evidence in skills - Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems. They have flexibility and fluidity to move between different contexts and representations of maths. Children show a high level of pride in the presentation and understanding of the work. The chance to develop the ability to recognise relationships and make connections in maths lessons is strong. Teachers plan a range of opportunities to use maths inside and outside school.

Outcomes - At the end of each year, we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and intervention.

Mastery –children secure long-term, deep and adaptable understanding of maths which they can apply in different contexts.