St Catherine’s Maths Master Statement

Intent

At St Catherine’s we aim to ensure that all children become fluent in the fundamentals of mathematics, use mathematical reasoning, and can solve problems by applying mathematical knowledge and know-how in every day life.

Children learn basic skills and understanding of mathematical concepts through a combination of problem-solving activities and mental calculations. As we are committed to ensuring that children are able to recognise the importance of maths in the wider world and are able to confidently use these mathematical skills to navigate daily life, we use a maths mastery approach to learning. We want all children to enjoy mathematics and to experience success in the subject whilst developing children’s curiosity about the subject.

Implementation

The content and principles underpinning the 2014 mathematics curriculum and the curriculum at St Catherine’s reflect those found in high-performing education systems internationally, particularly those in Asian countries. Their principles and features characterise this approach and influence how our curriculum is implemented:

* teachers reinforce an expectation that all children can achieve highly in mathematics,
* the majority of children progress through the curriculum content at the same pace,
* differentiation happens through individual support and intervention,
* teaching is underpinned by methodical curriculum design and supported by lessons crafted through deep conceptual and procedural knowledge,
* practise and consolidation play a crucial role. Variation within this builds fluency and understanding,
* Teachers use repetition and precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention so that all children keep up.

Children study mathematics daily covering a broad and balanced curriculum including elements of number, calculation, geometry, measure and statistics. When children are introduced to a new concept for the first time, they are encouraged to physically represent mathematical concepts. Objects and picture are used to demonstrate and visualise abstract ideas, alongside numbers and symbols. Here at St Catherine’s, we use three methods to do this:

* Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.
* Pictorial – children then build on the concrete approach by using pictorial representations, which can then be used to solve problems and reason.
* Abstract – with foundation firmly laid with concrete and pictorial methods, children can move onto an abstract approach using number and written methods with confidence.

As a school which follows the principles of maths mastery teaching, we ensure that our maths lessons contain the 5 Big Ideas for mastery teaching. We use the Power Maths scheme to ensure our lessons include these elements through episodic teaching. Furthermore, within the Power Maths Scheme of Work, each National Curriculum objective is broken down into fluency, reasoning and problem solving. We also use extension challenges to extend and deepen the understanding of pupils within each year group. A mastery curriculum promotes a deep, long-term, secure and adaptable understanding of the subject, so that children become fluent in calculations, possess a growing confidence to reason mathematically and hone their problem-solving skills.

Since the first administration in 2021, a yearly multiplication tables check (MTP) will be required for pupils in year 4. This is to determine whether pupils can recall their times tables fluently; a core concept of current and future success in mathematics. It will also help schools identify pupils who have not yet mastered their times tables so that addition support can be provided.

Impact

Throughout each lesson formative assessment takes place. Feedback is given to the children verbally during the lesson and through marking to ensure they are meeting the specific learning objective. Teacher’s then use this assessment to influence their planning and ensure they are providing a mathematics curriculum that allows all pupils to progress. We also use interventions to ensure that all pupils achieve and make progress.

Summative assessment also takes place to help children familiarise themselves with their testing approach and to demonstrate their understanding of the topics covered. This, alongside formative assessment, is use to determine children’s progress and attainment.

The expectation is that the vast majority of pupils will move throughout the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the pupils’ understanding and their readiness to progress on to the next stage. Pupils who grasp concepts rapidly are challenged through being offered rich problems to deepen their understanding. Those who are not sufficiently fluent with earlier material should consolidate their understanding before moving on.