Mathematics at Temple Herdewkye Primary School

Intent

At Temple Herdewyke Primary School, we recognise that Mathematics is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment.

We aim to provide a high-quality mathematics education with a mastery approach so that pupils will:

- Become fluent in the fundamentals of mathematics;
- Are able to reason mathematically;
- Can solve problems by applying their maths

(National Curriculum 2014)

At Temple Herdewyke, these skills are embedded within maths lessons and developed consistently over time. We are committed to ensuring that pupils are able to recognize 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 want all children to enjoy maths and to experience success in the subject, with the ability to reason mathematically.

Implementation.

At Temple Herdewkye, we use Maths No Problem in Years 1-6 (approved by the Department for Education) which has been written to support teachers in all aspects of their planning whilst delivering Singapore Maths Mastery methods effectively. This programme is designed progressively. The principles and features of this programme characterise this approach:

- Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics
- The large majority of pupils progress through the curriculum content at the same pace.
- Differentiation is achieved by emphasising deep knowledge and through individual support and intervention
- Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge
- New concepts are explored using concrete materials, visual representation and abstract form
- Practice and consolidation play a central role
- Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts
- 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, where possible.

Typically, maths lessons follow the following format. New concepts are shared within the context of an initial related problem, which pupils are able to discuss in partners. This initial problem-solving activity prompts discussion and reasoning, as well as promoting awareness of maths in relatable real-life contexts. New concepts are often explored using manipulatives (concrete materials).

Concrete, pictorial, abstract!

All pupils, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach. Pupils are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.

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 this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads pupils through strategies for solving the problem, including those already discussed. Independent work provides the means for all children to develop their fluency futher, before applying their learning in different situations.

Impact

The majority of pupils will achieve

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of maths
- The ability to recognize relationships and make connections in maths

A mathematical concept or skill has been 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.

Mrs M Godfrey

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