Maths at St Cuthbert's Catholic First School

"The only way to learn mathematics is to do mathematics" Paul Halmos

Intent

Our aim at St Cuthbert's is to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. We also aim to instil in our children a love of maths; to be intrigued and to wonder about maths and to see the possibilities and creativity of maths all around them in their everyday lives.

As a school, we are at the beginning of our mastery journey, with the aim to improve teaching and learning of mathematics. Both teachers from Key Stage One and Key Stage Two will attend Teacher Research Groups, within the Berwick Partnership of schools and that will be supported by a Mastery Specialist. The Teaching for Mastery programme is run by the Great North Maths Hub. Using this approach, which involves breaking Maths learning into smaller steps using varied representations and structures, we are confident that both teachers and pupils can grow as mathematicians together.

Implementation

To achieve mastery and depth for all children, we use a concrete pictorial -abstract approach. All children are taught to visualise, to make connections and most importantly, to communicate their understanding both visually and verbally. We are currently focussing on the importance of children being able to explain their reasoning and thinking, with an emphasises on the teaching of the correct mathematical vocabulary expected at each key phase. Therefore, children are regularly exposed to tasks which allow them to use their vocabulary to clearly explain, reason and justify. As maths is a language, at St Cuthbert's we believe that it is important to teach children to speak it! Therefore, teachers take time to model and scaffold how to answer a question mathematically and ask children to respond in the same way through structured stem sentences.

Topics are taught in extended blocks in order to allow enough time for children to practise, refine and ultimately master concepts. They The lessons are carefully sequences so that skills and knowledge are continually revisited and applied through procedural and conceptual variation.

Although the development of fluency is important, lessons are also designed to include rich problem solving tasks for children to access. Teachers use assessment for learning to determine whether children need further guidance or independent practice. Although we have mixed aged classes in our school, children are taught concepts as a whole class. However, teachers refine their lessons so that the appropriate concepts for each year group are covered.

The school continues to use Calculation Time as an opportunity to develop instant recalling of facts, such as times tables and addition and subtraction of various number bonds.

Lessons include activities designed to build fluency, spot patterns and make connections. Reasoning style questions include Sometimes, Always, Never, What's the same, what's different, True or False, Odd One Out. These provide the children with good opportunities for mathematical thinking, reasoning and explaining.

Teachers use questioning throughout every lesson to check understanding and to dig deeper. As children are asked to explain their thinking, errors are valued as an opportunity to clarify misconceptions. Errors also help other children to explain peer to peer using talk partners.

Teachers use questions such as

- Can you draw a model to show how you solved it?
- Is there another way to solve this?
- Can you explain your answer to someone else?

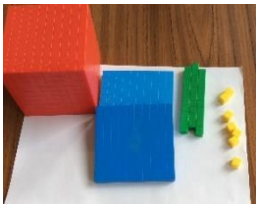
to provide opportunities for children to experience maths at a deeper level.

Children who grasp concepts quickly are given the opportunity to "go deeper" rather than to move onto the next year group objectives. Challenges can take several forms, e.g. writing a clear explanation of a problem, devising their own related problems; reversing a problem, finding a different solution.

To support children in their learning, we use a wide range of practical equipment which supports children in developing number sense and becoming secure in their methods of calculation.

We use;

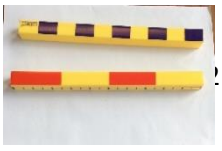
Dienes /Base Ten



Place Value Counters

Threaded Beads

Mini Counting Rods



Impact

At St Cuthbert's we want every child to develop a real passion for Maths which they can continue to build upon throughout their education. Through the mastery approach we want all children to become resilient learners who make connections between concepts, persevere when they first fail and delight when solutions to problems are found. We want our children to focus not on the answer to a problem but on the method, they use to answer it. We want our children to develop a deep understanding of mathematical concepts that are built upon year by year.