



Teaching of Mathematics

(Sept 2018)

Curriculum paper to read alongside Teaching and Learning policy

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 2014)

At Sutton in Craven CP we seek to provide an education in which children enjoy and succeed in their learning of Mathematics. We believe that children need to understand fully the concepts they are being taught, not just how to get the right answers, and that the use of visual models and images and concrete resources to show this is a key strategy.

At our school we had adopted a mastery approach to the teaching of mathematics.

In EYFS our work is built around mastery of number and shape, we use the Numberblocks scheme to support this. Provision is tailored to give lots of opportunities to explore and understand number, shape and measures.

Across the rest of school we use Maths No Problem as the basis of our planning and lesson delivery 4 out of 5 days a week with the other day being used for consolidation and assessment.

The mastery approach focusses on developing a deep understanding of concepts by using a concrete-pictorial – abstract approach. It helps children develop their understanding and apply it in a range of contexts. There is a clear emphasis throughout school on using concrete resources to support understanding.

In our maths lessons you will see the use of journaling to develop understanding. This is where pupils use jottings to help them solve problems in a variety of ways. This may be independent, paired or grouped work. It gives the opportunity for exploration of ideas and develops links between concepts. Journaling is done in the blue maths books, it may appear to be untidy but is a visual representation of pupils thinking and learning. Journaling is then used as the springboard for teaching in the rest of the lesson. It may or may not be marked depending on its purpose.

Lessons are taught to the whole class. The children sit in mixed ability group and often work with others; they all move at “broadly the same pace”. Any struggling learners are supported by concrete resources and quicker graspers challenged by in depth questioning. There is often opportunity to address any weaknesses before the next day's maths lesson. Understanding is shown by the pupils' completion of work in the workbook. In addition to this when, and only when, pupils have demonstrated a thorough understanding of the concepts being taught further challenges are given. These give pupils a chance to show a greater



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depth of understanding. They may involve explaining concepts visually, attempting greater depth mastery questions, applying information in a non-standard scenario. It will not involve moving pupils on to new content faster.

Alongside the work in Maths No Problem lessons there are daily opportunities to develop basic skills and fluency. Our blue maths books show some fluency activities, some mastery extension and the journaling that takes place during MNP lessons. Developing fluency in basic number facts is an essential. We send KIRFs (key instant recall facts) home on a half termly basis and test pupils on their recall regularly. We also have a variety of ways of developing their understanding and recall of number facts and times tables including the school times tables challenge weekly and the use of ICT resources such as Times Tables Rock stars.

Independent problem solving

Once a week a lesson is dedicated to developing problem solving. Using testbase/problem solving/reasoning/arithmetic materials we explore problems and reasoning together and give opportunity for pupils to attempt them independently.

Fixit time

Time for children to do corrections from work the day before – use green pen. Children write reminders of things that will help them in future. Those who have no fixit – they write reminders and then have new related challenge. Where possible misconceptions that are highlighted through marking and feedback are dealt with before moving on to new content.