
Mathematics Curriculum



Intent:

At Copnor Primary School, we aim to offer an engaging learning environment whereby pupils are motivated to apply their mathematics across the breadth of the subject and beyond. Through a high-quality education, children are provided with 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.

We aim to ensure our children are confident to apply this knowledge in a range of applications:

- By demonstrating fluency in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time.
- Through solving problems with increasing sophistication, whilst building resilience when seeking solutions, and also, allowing pupils the opportunities to collaborate to develop their use of mathematical language and reasoning skills.

Through fostering pupils' curiosity, we aim to develop a lifelong love of learning both within mathematics and through other subjects.

Implementation:

To learn mathematics effectively, some concepts must be learned before others: we begin each year covering the foundational learning of place value before working with addition and subtraction, and then building on this within multiplication and division (using repeated addition as a model for multiplication). With this in mind, we have carefully crafted long-term maps which ensure that children build on their prior knowledge to support them in their success of learning mathematics.

To enable this, we use the White Rose Maths scheme to support our planning and teaching of Maths throughout school. White Rose Maths is a scheme that has been developed by a team of passionate maths teaching experts who are influenced, inspired and informed by the work of leading maths researchers and practitioners across the world.

The scheme's fundamental belief is that '**Everyone can do Maths!**' – a slogan we wholeheartedly agree with- and it is designed to teach to the 'mastery' of concepts, so pupils become confident and resilient mathematicians.

White Rose teaches children mathematical concepts through pictorial, practical and written methods to develop a deep understanding, confidence and competence in Maths and improve fluency. Fluency in Maths is about developing number sense and being able to choose and use the most appropriate method for the task at hand and be able to apply a skill to multiple contexts.

To support this fluency in EYFS and KS1, we provide children with daily 'Mastering Number' lessons, where we aim to secure firm foundations in the development of good number sense for all children. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future. This is then continued into KS2, where they are exposed daily to 'Flashback Four', a principle created by White Rose which allows children to revise the prior concepts learnt, helping children's learning become part of their long-term memory.

There is also a strong emphasis on learning times tables and related division facts, particularly in key stage 1 and lower key stage 2. We expect all pupils to be proficient in all four operations by the end of Year 5 in order that they have the time to focus on more complex skills. This is achieved with regular practice and testing, at home and at school, using Times Tables Rock Stars.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Impact:

By the end of Key Stage 2, we aim for pupils to be fluent in the fundamentals of mathematics, with a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. They will be able to independently solve a range of problems, including those in unfamiliar contexts and in real-life scenarios. Children will be able to reason mathematically to justify and explain their strategies and approaches.

“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.”

Purpose of Study, Mathematics National Curriculum, 2014 “If we really want to empower our students for life after school, we need to prepare them to be able to use, understand, control, modify, and make decisions about a class of technology that does not yet exist. That means we have to help them develop genuinely mathematical ways of thinking.”

(Cuoco, Goldenberg & Mark, 1996)