

Mathematics Curriculum

At Crowmarsh Primary School, we are committed to providing our children with a curriculum that has a clear intention and impacts positively upon their needs.

INTENT

Why do we teach maths? Why do we teach it in the way we do?

The National Curriculum for Mathematics aims to ensure that all children:

- become fluent in the fundamentals of mathematics,
- reason mathematically using mathematical language, and
- can solve problems by applying their mathematics and persevering in seeking solutions.

Maths is a creative and highly inter-connected discipline that we use on a daily basis. It is an essential part of everyday life that helps us to understand and change the world, and solve the problems of tomorrow. We want all pupils at Crowmarsh to develop a curiosity and enthusiasm for maths that will stay with them throughout their lives.

At Crowmarsh, we take a mastery approach to the teaching and learning of mathematics, which builds progressively within and across year groups. We ensure that we deliver a maths curriculum that is both challenging and enjoyable. Our aim is to develop a positive culture of deep understanding in maths that produces strong, secure learning. We want our children to think like mathematicians, be confident to ask questions and have the courage to take risks. Through our growth mind-set ethos, children understand that their efforts are valued. They are not afraid to make mistakes, and use them as learning opportunities. We encourage children to identify what they've done well and how they can improve.

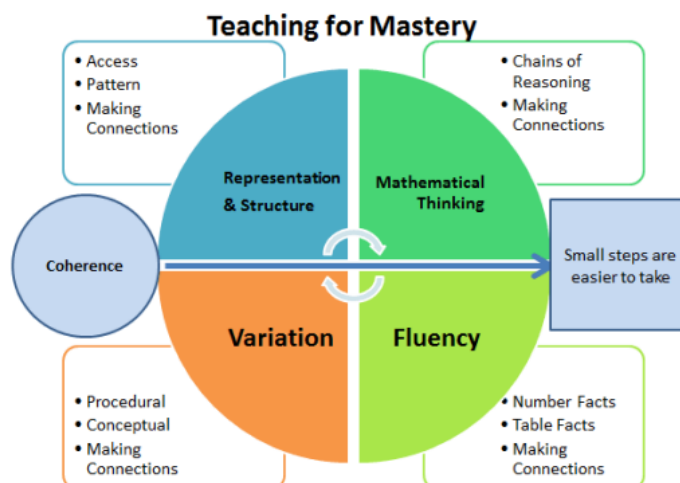
We want children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. In line with our school-wide focus on oracy, maths discussion provides children with an opportunity to gain deeper understanding through communication.

We intend for our pupils to be able to apply their mathematical knowledge to science, design technology and other subjects, by planning cross-curricular opportunities for them to develop their maths skills.

IMPLEMENTATION

What do we teach? What does this look like?

Central to our approach are the 5 big ideas which underpin mastery – Coherence, representation and structure, mathematical thinking, fluency and variation



White Rose

At Crowmarsh, every class from Reception to Y6 follows the White Rose Maths scheme of learning which is based on the National Curriculum and calculation policy.

White Rose Maths is a scheme, which allows for depth and breadth of learning within each strand of mathematics. By using a variety of additional planning resources, we aim to provide a teaching and learning experience that interests, informs and inspires our children. Maths lessons are engaging and well-resourced with the pupils acknowledging that the journey to finding an answer is the most important factor. Each learning session includes the opportunity to develop fluency skills, construct chains of reasoning using relevant knowledge alongside relevant terminology and solve increasingly complex problems in a systematic and coherent way.

Fluency sessions

As White Rose is a blocked scheme, certain strands of maths are not covered until later in the term. To ensure frequent revisiting of concepts, we plan and deliver additional sessions with a focus on fluency skills. In EYFS and KS1 these are delivered through the NCETM Mastering Number programme. We also use WhiteRose Flashback 4 from Yr 1- yr 6, to ensure that children are being given the opportunity to revisit previous learning.

Concrete Pictorial Abstract (CPA)

CPA is a fundamental part of mastery in mathematics for *all* learners. Concrete and pictorial representations scaffold, support and strengthen understanding and are widely used as a teaching and learning tool from EYFS to Year 6. We support children with their resilience in maths and encourage children to try to work through problems logically. To do this, children engage with a wide and varied range of manipulatives, including Numicon, dienes and counters (Concrete) When children have grasped a concept using concrete apparatus, images and diagrams are used (pictorial representations) prior to moving to abstract methodologies.



Vocabulary

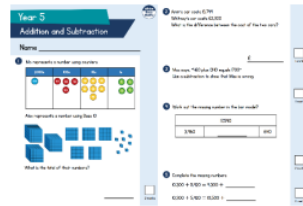
In our maths sessions, we ensure that explicit reference is made to mathematical vocabulary alongside the use of stem sentences. These stem sentences support and encourage all children to clearly communicate their ideas using accurate vocabulary. Children are given opportunities to develop their oracy skills and show their depth of understanding, through verbal reasoning, developing an argument, justification or proof using mathematical language.

Assessment

Formative Assessment: Teachers carry out formative assessment through AfL in each session and feedback is given to children verbally, through self/peer assessment and through marking. Teachers then use this assessment to influence their planning.

Interventions: Teachers believe that all children can achieve in maths, and focus on whole class teaching. Where prerequisites are not secure, timely interventions will be carried out.

Summative Assessments: Children complete Beginning and End of Block assessments for each phase of learning. Results are used to further inform planning and allow for tailored interventions groups to take place to ensure the objectives are secured.



Our Assessment Calendar also includes 3 key dates for capturing progress and attainment against National Curriculum Objectives. Assessments are carried out in Autumn, Spring and Summer terms.

EYFS

At Crowmarsh we understand the importance of early experiences of maths within our Early Years setting. There is a significant emphasis on developing a strong grounding in number – understanding that this is a necessary building block for children to excel in the subject.

In **FS1**, children develop a love of maths through games, songs, rhymes, and play using concrete manipulatives. Through the use of 'The One Project' children focus on the following counting principles; one to one correspondence, stable order and cardinal principle. Children's fine manipulative skills are a focus to develop 1-1 correspondence so children count each object only once.

In **FS2**, the children follow the White Rose mastery approach with an emphasis on studying key skills of number, calculation and shape so that pupils develop deep understanding and the acquisition of mathematical language. High quality learning environments and meaningful interactions with adults, support children in developing mathematical thinking and discussion. Pupils learn through games and tasks using concrete manipulatives and pictorial structures and representations, which are then rehearsed, applied and recorded within their own child-led exploration and in adult directed activities. These collaborative and practical mathematical experiences are carefully designed to help pupils remember the content they have been taught and to support them with integrating their new knowledge across the breadth of their experiences and into larger concepts. Teaching mathematics in such a kinaesthetic and practical way supports our children to become logical problem solvers that can demonstrate resilience and justification when learning. This approach to teaching maths ensures children gain progressive mathematical knowledge and skills as they continue their journey through KS1.

IMPACT

What will this look like? By the time children leave school they will:

By the time children leave Crowmarsh, they will be inquisitive, passionate mathematicians, who feel they have the skills and knowledge to tackle real life mathematical problems and attempt more sophisticated problems at their next stage of learning and beyond.

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| Impact | Pupil Voice | Evidence in Knowledge |
| | Through discussion and feedback, children talk enthusiastically about their mathematics lessons and speak about their enjoyment of the subject. They can talk about their learning and the maths being taught, and relate it to real life purposes. Children show confidence and believe they can learn about a new mathematical concept, applying their prior knowledge and skills. | Pupils know how and why maths is used in the outside world. They know about different ways maths can be used to support their future potential. Mathematical concepts or skills are 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. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times tables. |
| | Evidence in Skills | Outcomes |
| | Pupils use acquired vocabulary in maths lessons. They have the skills to show methods independently and show resilience when tackling problems, and the flexibility and fluidity to move between different contexts and representations of maths. Children show a high level of pride in the presentation and understanding of the work. They develop the ability to recognise relationships and make connections in maths lessons. Teachers plan a range of opportunities to use maths inside and outside school. | We expect that by the end of Y6 our children: <ul style="list-style-type: none"> • Become fluent in the fundamentals of mathematics • Reason mathematically, by following a line of enquiry, conjecturing relationships and generalisations. • Solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication. |