



Crowmarsh Gifford C of E Primary School

Care, Grow, Persevere, Shine

CGPS Approach to Maths

This guidance outlines the teaching, organisation and management of the Maths curriculum taught and learnt at CGPS. The implementation of these guidelines is the responsibility of all teaching staff

INTRODUCTION

Our overall aim at Crowmarsh School is for children to enjoy their learning journey. We put children at the centre of everything we do, ensuring they understand learning as an active process in which they play a central role. We are committed to an inclusive approach in which every child is valued, supported and challenged to achieve their potential, with learning adapted where appropriate so that all pupils can access, participate in and succeed within the curriculum. We teach children how to become effective learners by helping them to think about their own learning more explicitly, teaching them specific strategies for planning, monitoring and evaluating. They begin by learning how to be effective learners and, as they progress through the year groups, this develops into a strong work ethic that has a far-reaching impact on their secondary education and beyond.

SCHOOL VISION

‘A community supporting children to Care, Grow, Persevere and Shine’

INTENT

Also see:

- Subject Goals
- Subject Progression Map

Subject Intent Statement

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

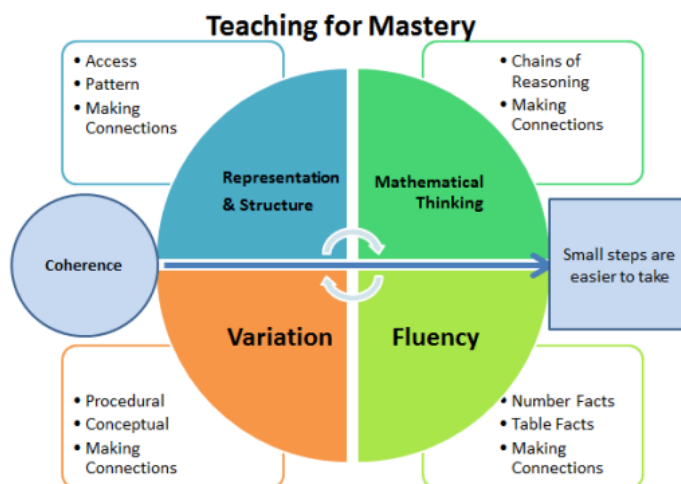
Also see: Appendix 1 Maths Non Negotiables



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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. In addition to Mastering Number in KS1 and Reception, Year 4 and 5 take part in KS2 Mastering Number each day which is based on consolidating multiplication facts. In Year 2 and 3 they complete 99 Club which is a quick recall activity to support multiplication.

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. This is embedded into the schemes we use at CGPS and classes are equipped to support this.





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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.

Our Assessment Calendar 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 Pre-school, children develop a love of maths through games, songs, rhymes, and play using concrete manipulatives. Through the use of Master the Curriculum resources which link with White Rose Maths, adult plan activities both adult led and independent to ensure a secure foundation of learning ready to progress to a deeper understanding in Reception.

In Reception, the children follow the Mastering Number 2026 approaches 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.

Subject Planning & Teaching

Through careful stages of planning and 'Quality First Teaching' each teacher differentiates their class' curriculum to meet the needs of the children they teach with the aim of developing independence and the child meeting his/her potential at whichever level they are working at. We acknowledge that children learn in many different ways and recognise the need to use a range of different teaching and learning strategies that will allow all children to learn in ways that best suit them.

In each lesson, children are guided towards the learning objectives (WALTs) through the use of success criteria.(WILFs) The learning objectives and success criteria are shared at the beginning of the lesson and reviewed by children at the end. They are subsequently used by the teacher during the assessment and review work of children's work and are used to identify individual target areas.

The Maths curriculum is mapped to ensure alignment with the national curriculum. Through teaching with a problem solving approach, children will learn to understand and apply information; consider what they know that



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will help them to solve problems, realizing what they need to know next; create systems and strategies, organizing information in a way that helps find patterns and ultimately solutions and to communicate and present their findings effectively.

As a result of their learning in mathematics and problem solving across the curriculum children will:

1. Be prepared for applying their skills effectively in everyday life situations, in their future learning and in the work place.
2. Have the building blocks in place and to provide a solid foundation to lead onto secondary, further and higher education.

CG Schemes

- White Rose Maths
- Mastering Maths

CG Supporting resources

- Classroom Secrets
- Master the curriculum

Subject Enrichment: See Teaching, Learning & Assessment Policy

Inclusion for all Children: See Teaching, Learning & Assessment Policy

EYFS Statutory Framework:

The EYFS framework promotes teaching and learning to ensure children's 'school readiness' and gives children the broad range of knowledge and skills that provide the right foundation for good future progress through school and life. Through this curriculum, children will be exposed to aspects of knowledge, skills and understanding that will be built upon once they enter the National Curriculum Programmes of Study.

Maths Curriculum Link to EYFS Framework:

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

IMPACT

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.

E	Pupil Voice	Evidence in Knowledge
	Through discussion and feedback, children talk	Pupils know how and why maths is used in the outside



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	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.	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 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.	Outcomes We expect that by the end of Y6 our children: • 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.

Standards of pupil work, assessment data and pupil feedback will help the subject leader and senior leaders review the impact of the Maths curriculum.

Standards of pupil work

The subject leader will ensure they monitor the teaching and learning and hence the standard of work across the school, matching the knowledge, skills and understanding to the curriculum overview and age-related expectations of the subject. Each leader will be expected to produce an annual report (Deep Dive) informing the senior leaders and governors of their findings.

Assessment

At CGPS we use Insight to support our assessment of Maths

The learning objectives and outcomes in each planned lesson show how the children might demonstrate what they have learnt. Assessment should inform planning so that children learn and develop skills appropriate to their abilities and understanding. Methods of assessment can include teacher observations, discussion with pupils, self-assessment and peer 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.

Summative Assessments: At the end of each half term, children will complete an NFER assessment. This data is then used to identify misconceptions within larger cohorts or groups. The results are entered into INSIGHT and used to support teacher judgements.

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. This may also include pre-teaching for those



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where this is essential to enable them to access learning within the lesson (children who require SEND support for example).

Pupil Feedback

As part of the on-going review and development of our curriculum, the Maths Subject Leader will hold learning conversations with children; this will be done in a variety of ways. Our teaching staff value pupil feedback and, within lessons, will informally seek the children's thoughts and ideas about their learning.

Role of Maths subject leader

- To ensure a high profile of the subject.
- To produce an agreed curriculum statement that outlines the intent, implementation and impact for maths within the CG curriculum.
- To produce an agreed progression of content and skills within a curriculum overview, that takes account of the EYFS curriculum and National Curriculum.
- To produce and maintain an annual subject action plan.
- To support colleagues by advising them on planning; appropriate resources; teaching strategies; approaches to assessment; changes and developments within the subject.
- To model the teaching of maths
- To ensure a full range of relevant and effective resources are available to enhance and support learning.
- To monitor the standards of learning, supported by Senior Leaders i.e. through books, lesson observations, learning conversations, data analysis and ensuring that key knowledge is evidenced in outcomes.
- To develop own skills and knowledge through relevant courses; reading; accessing other sources of information and expertise.



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Appendix 1 Maths Essentials

Maths Essentials				
Year Groups		EYFS to Year 6		
Time Allocation		Daily Maths lessons (1 hour – but shorter in EYFS)		
	Resources	In every topic	In Every Lesson	Where Appropriate
INTENT	- NC maths objectives (Insight) - Quality resources (White Rose, Classroom Secrets, Mastering Maths, Master the Curriculum)	- Plan according to the needs of the cohort - Adapt resources and lessons according to the needs of the cohort	- Learning appropriate to agreed CG subject progression map - Use of a range of well thought out resources/visuals - Focus on presentation - Exposure to appropriate vocabulary and understanding of new and unfamiliar words used in context - Skills in maths are developed - Children are encouraged to 'Think and speak like a Mathematician'	Daily arithmetic KIRFS
IMPLEMENTATION	- NC maths objectives (Insight) - White Rose - Classroom secrets - Mastering Maths, Master the Curriculum)	- Exploration of maths vocabulary - Shared problem solving - Modelled problem solving - Modelling of 'thinking like a mathematician' (as appropriate to lesson content) - Scaffolding used to develop independent problem solving - Unit specific word banks	- WALTs linked to National Curriculum - Success criteria (children involved in generating), adding to and developing each lesson - WALT and date, underlined using pencil. - I do, we do, you do - Key vocabulary, resources and current learning displayed on working wall - Discussions with children - In-lesson feedback, self and peer assessment, as appropriate - Children aware of their next steps - Modelling of the steps for success - Modelling thinking and speaking like a learner/mathematician - Learning displayed on working wall - Scaffolding used to develop mathematical skills and understanding, leading to independence - Collaborative learning	- Thumbs up (support) /down - Active Listening - My turn- your- turn - Shared and modelled problem solving - Choral response - Tell your partner/trio - Think-pair-share (higher order thinking) - Think time - Whiteboard responses - Sentence stems - Essential sheet based questions or scaffolded worksheets trimmed and stuck into books.



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IMPACT	• Insight tracking • Teachers AFL records/notes		• Questions to check understanding. • Scanning classrooms • Mini plenaries • Marking/feedback, where appropriate, in accordance with CG policy • Adapted planning for the next lesson. • Children's self and peer assessment • Teachers' AFL records/notes	• Peer evaluation • Self-assessment • Flexible groupings. • Children's peer assessments. • Testing • Quizzing
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