



Cornerstone Academy Trust

Teaching of Mathematics Policy

The Teaching of Mathematics
Elements of Mathematics
Teaching of Calculation

Policy for the Teaching of Mathematics

The purpose of this policy is to set out how Cornerstone Academy Trust promotes high-quality mathematics teaching across the trust. Our approach supports pupils to become confident, fluent and well-rounded mathematicians who can reason, solve problems and apply their learning across a range of contexts.

Our approach to mathematics is rooted in Teaching for Mastery. This means children are given time to develop secure, connected mathematical understanding through small steps, precise modelling, high-quality discussion, carefully chosen representations, and regular opportunities to reason. Fluency is not seen as speed alone; it is the ability to use known facts, relationships and efficient strategies flexibly across different contexts.

Breadth of study

Careful planning and preparation ensure that throughout the school children engage in:

- practical activities and tasks using a variety of resources
- problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practice where time is given to apply and deepen learning
- open and closed tasks
- a range of methods of calculating e.g. pictorial strategies, the use of resources for concrete understanding, mental, pencil & paper, jotting, formal methods and using a calculator
- working with technology and devices as a mathematical tool

Through our project-based approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers planning and organisation

Teachers follow the NCETM Teaching for Mastery approach, using the Ready to Progress criteria, Curriculum Prioritisation materials and Mastery Professional Development spines to support coherent sequencing. Planning is structured around carefully chosen small steps so that pupils build secure understanding over time. Key concepts are revisited regularly and connections are made across number, calculation, reasoning and problem solving, enabling pupils to develop fluency, deepen understanding and apply their learning flexibly.

The National Curriculum for Mathematics, the current EYFS framework, Development Matters and the Early Learning Goals provide the long-term planning framework for mathematics taught across the trust.

Teachers work in year group teams (with the support of the Year Group Head) across the trust to plan and deliver lesson sequences based on the NCETM Curriculum Prioritisation materials and Mastery Professional Development spines. Shared planning supports consistency in mathematical models, vocabulary, representations and lesson structure, while still allowing teachers to adapt teaching responsively to the needs of their class. Ongoing professional dialogue within and across year groups is expected to focus on pupils' understanding, misconceptions, reasoning and the impact of chosen representations and practice tasks.

Timings

All classes have a daily mathematics lesson. Maths is also incorporated into other subject work, and specific practice times are used to strengthen fluency, number sense and recall of key facts. These sessions are not a substitute for conceptual teaching; they provide regular, purposeful practice so that children can draw on known facts and relationships when reasoning, solving problems and choosing efficient strategies.

Agreed fluency tools and routines, including Fast Maths, Fast Arithmetic, Magma Maths, mathematics challenges and Mastering Number sessions, are used purposefully to support current learning, address known gaps, strengthen recall of key number facts and help children develop efficient strategies. Teachers use these opportunities to build fluency that supports reasoning, so children can draw on what they know when explaining, solving problems and choosing appropriate methods.

Mastering Number sessions are used to strengthen children's number sense through short, regular and carefully structured practice. Sessions include clear modelling, choral rehearsal, partner talk and the use of rekenreks and other representations to help pupils see and explain number relationships. In the early years and KS1, the programme supports subitising, composition of number, comparison, cardinality, ordinality and early additive reasoning, helping children to explain what they notice, how they know and which known facts can support their thinking.

Resources

Manipulatives and representations are understood to be core tools in developing children's mathematical understanding. They are used deliberately to reveal mathematical structures, support explanation and help children move between concrete, pictorial and abstract representations. As children's conceptual understanding develops, teachers support them to choose efficient strategies and representations, while ensuring practical tools remain available when they support access, reasoning or explanation.

Each class has a stock of core resources that are age appropriate. These include, but are not limited to:

- Number lines and number squares
- 1:1 items such as beads, cubes, counters
- Numicon
- Dienes apparatus
- Fraction Walls
- 3D and 2D Shape Sets
- Coins and Money

Across year groups, teachers select representations carefully and use them consistently to support progression. Expected core representations include ten frames, rekenreks, number lines, bar models, arrays, part-whole models and place value counters. These representations are chosen because they make mathematical structures visible, support explanation and help pupils make connections between concepts, rather than simply acting as practical resources.

These resources are available in all classes across the trust. In this way, shared planning is possible based on equivalent resource availability.

Online Resources

Class teachers have received CPD and appropriate training on a range of online maths resources, including:

- Magma Maths
- Purple Mash
- ClickView
- Whiteboard

EYFS

The current EYFS framework, Development Matters guidance and Early Learning Goals provide the basis for planning, teaching and assessment in early mathematics. The two key areas within the Early Learning Goals are Number and Numerical Patterns.

In Nursery and Reception, children develop mathematical understanding through practical experiences, purposeful play, adult interaction, mathematical talk and carefully planned provision indoors and outdoors. Teaching supports children to explore number, pattern, shape, space and measure in meaningful contexts.

In Reception, the NCETM Mastering Number programme is used alongside the EYFS curriculum to strengthen children's early number sense, including subitising, composition, comparison, cardinality, ordinality and early additive reasoning. Ongoing observation and assessment inform responsive teaching and next steps so that children are supported to develop confidence, fluency and positive attitudes towards mathematics.

SEND / Able Pupils

Daily mathematics lessons are inclusive of pupils with Special Educational Needs and Disabilities. We believe that equity in mathematics means all pupils are entitled to access rich mathematical thinking, reasoning and discussion. Where required, children's My Plans incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters, and teachers use adaptive teaching, carefully chosen representations, scaffolds, vocabulary support and responsive questioning to reduce barriers within lessons. Maths-focused intervention supports children with gaps in learning and is delivered by trained support staff, overseen by the SENCO and/or the class teacher.

Within the daily mathematics lesson, teachers have a responsibility to provide appropriate support for children with SEND and sufficient challenge for pupils who are ready to think more deeply. In a mastery approach, challenge means depth, not acceleration. Pupils should not simply be moved on to new content; instead, they should be supported to explain, generalise, prove, represent ideas in different ways, identify misconceptions, make connections and apply learning in unfamiliar contexts.

Equal Opportunities

Positive attitudes towards mathematics are encouraged so that all children, regardless of background, gender, ability, special educational needs or whether English is an additional language, develop enjoyment, confidence and success in mathematics. The aim is to ensure that everyone makes progress and experiences lessons that are inclusive, accessible and ambitious. Lessons involving visual, oral and practical elements benefit all children, including those for whom English is an additional language.

Teachers model and expect precise mathematical vocabulary so that pupils hear and use the same language across year groups. Key stem sentences and vocabulary are introduced explicitly, revisited regularly and used in both oral rehearsal and written reasoning. For example, staff use language such as addend, sum, factor, product, dividend, divisor and quotient where appropriate, while also ensuring pupils understand the concepts these words describe.

Teachers use questioning, sentence stems and planned adult support to help pupils explain, justify and refine their mathematical thinking. Pupils are encouraged to respond to prompts such as “How do you know?” and to use precise vocabulary when describing strategies, representations and relationships. Learning objectives and success criteria are shared clearly, but the emphasis is on pupils making connections, reasoning aloud and explaining the mathematics behind their answers.

Lessons involve elements of:

- Instruction – giving information and structuring it well;
- Demonstrating/modelling – showing, describing and modelling mathematics using appropriate resources and visual displays;
- Explaining and illustrating – giving accurate and well-paced explanations;
- Questioning and discussing;
- Consolidating;
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

Pupils’ Records of Work

All children have a maths book in which the majority of their mathematics work is collected and evidenced. Children are encouraged to use their own jottings to support thinking across all year groups, alongside mental strategies, appropriate representations and formal written methods. Whiteboard, OneNote and other agreed digital tools may be used to support collaboration, capture evidence of learning and help pupils record thinking in ways that are appropriate to their age and stage.

Summative assessment results are recorded in a separate pupil records OneNote. This is only available to teachers and will collate information from the early years through the year 6, including twice a year PTM assessments results.

Marking

Marking of children's work is used to not only identify correct and incorrect answers, but also to signal the next step in their understanding. Work is marked against success criteria, in line with the trust marking policy, and includes next steps. Children are encouraged to self-assess their work and ideally given time to read teachers' comments and make corrections or improvements and to identify where they have made misconceptions and how to resolve them. Responses to marking are made as close to the work as possible, ideally at the start of the next lesson. Teachers may also provide challenge questions to extend the children's understanding and encourage them to apply the mathematical skill explored into a new context, this could be by providing an 'incorrect' sum for the children to correct, offering a word problem, or even encouraging the children to write their own questions, supporting the children to develop a relational understanding of the concept. Some pieces of work in mathematics may be marked by children themselves or their peers, exercises involving routine practice with support and guidance from the teacher – particularly in Years 5 & 6. Tools within OneNote and Office365 are also used as appropriate to snapshot evidence of learning or to match to children's individual targets.

Marking Virtually

Marking and feedback for children working virtually is achieved in a similar way as mentioned above. Work is marked against criteria in line with the trusts policy. Using assignments in MS Teams, teachers can create specific criteria and rubrics for a given assignment. Once they have had the assignment returned, teachers can provide children with tailored feedback and next steps which are immediately returned to the child to view.

Assessment and Recording

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make daily assessments through marking, analysing errors, identifying misconceptions, asking questions, listening to explanations, facilitating discussion and observing how pupils use representations and strategies. These assessments inform immediate adaptations within the lesson as well as future planning. Summative assessments in the form of PTM/NGMT will also be recorded twice a year from year 2 upwards.

Assessment and Recording Digitally

Assessment whilst learning virtually needs to be carefully managed and planned for. Teachers can accommodate for this through;

- Marking of assignments in Teams
- Using MS Forms to assess understanding regularly
- Tracking of Magma Maths participation and completion
- Reviewing the answers children provide in response to questions in interactive videos on ClickView
- Using Learning Accelerator: Maths Progress on Teams
- Providing opportunities for work to be uploaded to evidence me (EYFS)

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and evaluated in light of these assessments.

In line with the Trust's assessment calendar, pupils complete GL PTM and NGMT Maths tests twice a year to snapshot progress. This is reviewed both within year group progress meetings and subject lead meetings.

Role of the Maths Lead

The Maths Lead is responsible for leading the development of mathematics across the schools by supporting consistent implementation of Teaching for Mastery, monitoring the quality of planning, teaching and learning, analysing pupil outcomes and programme engagement, identifying strengths and next steps, and providing professional development that strengthens subject knowledge, pedagogy, vocabulary, use of representations and adaptive teaching.

Further detail about the progression of calculation methods is set out in the Trust Calculation Progression Guidance. This supports consistency in modelling, representations, vocabulary, efficient strategy choice and written methods across year groups.