Clarice Cliff Guide to Maths

Intent - The Why

At Co-op Academy Clarice Cliff, we believe that Mathematics is not just a subject, but a foundation for life. The skills, knowledge and pedagogy of Mathematics underpin so many of the abilities needed to thrive in an ever-changing world. Mathematics empowers children to make sense of the world around them, nurturing curiosity, precision, and the ability to calculate, reason and problem-solve with confidence. It helps pupils to recognise patterns, form connections, and communicate ideas clearly, equipping them to engage with the challenges and opportunities of everyday life.

We are deeply committed to raising Mathematical standards across our school. Our aim is to provide every child with a safe, supportive and stimulating environment where they can flourish. We recognise the vital role that strong early foundations in Mathematics play in shaping not only future learning, but also the wider possibilities and aspirations of life. Through carefully designed provision, we equip children with the tools, resilience and skills to unlock their true potential and achieve success in all aspects of Mathematics.

Our curriculum is ambitious and inclusive. It ensures that all pupils, including those who are disadvantaged, gain the knowledge, skills and cultural capital they need to succeed both academically and beyond the classroom.

At Co-op Academy Clarice Cliff, our aims for Mathematics are to:

- Foster a love of Mathematics and promote a culture where children are proud to share their success.
- Inspire curiosity, creativity and enjoyment through exploration, discussion and practical activity.
- Encourage initiative, independence and the ability to collaborate effectively with others.
- Develop confidence, competence and fluency in mathematical knowledge, concepts and skills.
- Secure a deep conceptual understanding of Mathematics so that children can make connections, apply knowledge flexibly and build on prior learning.
- Enable children to see the value of Mathematics by applying it across the curriculum and in real-life contexts.
- Develop resilient problem-solvers who can reason logically, think critically and persevere through challenge.
- Empower children to communicate mathematical ideas with clarity and confidence in a range of ways.

Implementation – The How *(*including how/when we assess)*

What do we use to support our curriculum delivery?

The Mathematics curriculum at Co-op Academy Clarice Cliff is carefully designed and sequenced in line with White Rose Education. Each small step is meticulously planned to ensure that pupils experience a rich, high-quality mathematical journey; an enriching diet of maths that nurtures curiosity, confidence and deep conceptual understanding. Lessons are built on the principles of mastery, incorporating the Concrete, Pictorial and Abstract (CPA) model to secure fluency, develop reasoning and enable children to apply their knowledge with confidence across all key stages.

Our curriculum is ambitious and inclusive. All subjects are coherently planned, sequenced and delivered to a consistently high standard, enabling pupils to transfer and apply their knowledge

across the wider curriculum with confidence and fluency. Teachers are empowered to adapt the curriculum effectively to meet the needs of all learners, including those with SEND, ensuring equity of access and success for every child.

Every pupil has an equal entitlement to experience the full breadth of mathematical learning. Teaching reflects a variety of learning styles and approaches so that all children can thrive, building fluency, problem-solving skills and a love of mathematics, underpinned by strong conceptual understanding.

Within this framework, Core Knowledge and Times Tables sessions play a central role in strengthening arithmetic fluency and times tables recall. These sessions provide children with secure foundations in essential mathematical concepts, ensuring readiness for the next stage of learning. Core Knowledge and Times Tables are deliberately structured to:

- Close existing learning gaps through targeted support.
- Build confidence, competence and conceptual understanding of fundamental skills.
- Equip children with the knowledge needed to access increasingly complex mathematics.
- Prepare pupils for the end of KS1, the MTC and for success in the KS2 SATs and beyond, supporting their long-term mathematical progression.

Our practice is underpinned by the following principles:

- Meeting the diverse and complex needs of every learner is embedded in all we do as a staff team.
- It is the responsibility of the school to ensure each child can access, engage with and make meaningful progress through the curriculum.

Daily

- Each lesson will:
    - Begin each Maths lesson with the counting stick approach to secure fluency in times tables and number facts.
    - Be planned in line with the White Rose Education scheme and the National Curriculum for Mathematics, with adaptations made where necessary.
    - Make daily use of the CPA (Concrete, Pictorial, Abstract) approach as part of the mastery model to secure deep conceptual understanding.
    - Include carefully designed and scaffolded pathways, enabling all pupils to access and achieve the intended learning objectives.
    - Provide daily challenge for all children, with scaffolding where appropriate to support success for every learner.
    - Explicitly reinforce STEM sentences and mathematical vocabulary, strengthening reasoning and communication skills.
    - Actively address misconceptions through live marking, verbal feedback and immediate intervention, ensuring no child is left behind.
    - Incorporate opportunities for collaborative learning, encouraging discussion, reasoning and peer support.

Weekly

- Core Knowledge sessions run three times per week to strengthen arithmetic and fluency (e.g. place value, addition, subtraction, multiplication and division).
- Teachers use ongoing formative assessment to identify misconceptions, address gaps during Core Knowledge sessions and adapt teaching.
- Teachers use AfL effectively to adjust support and challenge where needed (e.g. additional scaffolding, greater depth strategies) to ensure progress for all learners.

Half termly/Termly

- Half-termly book monitoring is carried out by the Maths Lead and SLT to ensure consistency, high standards and alignment with the academy's expectations.
- Half-termly planning scrutiny ensures that lessons are coherently designed in line with the mastery model and reflect the school's vision for Mathematics.
- Half-termly learning walks are conducted by the Maths Lead and SLT to evaluate the quality of delivery, ensuring that all pupils experience Quality First Teaching. These walks also check that lessons are appropriately adapted and scaffolded so that every child can access the year group objectives.
- Termly staff and pupil voice activities are undertaken to capture confidence, engagement and attitudes towards Mathematics. This provides the Maths Lead with a clear picture of strengths and areas for development across the school.
- Termly assessments are completed by class teachers to measure progress, identify gaps in learning and highlight emerging trends in strengths and areas requiring further support.

Assessment for Learning

- Formative assessment takes place daily through the AfL techniques outlined in the Teaching and Learning Framework: Establish Expectations, Active Observation, Think–Pair–Share, Show Me Boards, Everybody Writes, and Cold Calling. These strategies enable teachers to identify misconceptions, adapt teaching in real time, and ensure that all children are fully engaged and supported.
- Termly summative assessments (Autumn, Spring and Summer) are administered, providing a robust measure of progress and attainment across the year.
- Information from assessments directly informs future planning, interventions and provision, ensuring that all pupils are challenged, supported and able to achieve ambitious outcomes.

This structured approach ensures that assessment is continuous, purposeful and effective in securing both progress and equity for all learners.

What this looks like in Early Years

In EYFS at Clarice Cliff, children develop strong mathematical foundations through a balance of structured teaching, daily routines, and play-based exploration. In Nursery, our bespoke curriculum, built on Maths Trajectories and White Rose, ensures children develop early number sense through activities such as counting classmates at registration, learning the days of the week, and engaging with number songs and rhymes. In Reception, children follow the White Rose curriculum supplemented by NCETM Number Mastery, progressing to more advanced concepts such as number bonds, doubles, and reasoning. Across both year groups, maths is woven into daily routines and continuous provision, with opportunities indoors and outdoors to explore counting, subitising, shape, measure, money, and problem-solving. Children use a wide range of equipment to investigate real-life mathematical concepts, play games to develop fluency, and practise writing and ordering numerals. Reception pupils also complete a weekly 'maths superhero challenge' to consolidate prior learning, with evidence captured in maths journals. This integrated approach ensures that children build confidence, fluency, and enjoyment in maths from the very start of their school journey.

Where will you see and find evidence of our learning?

- Maths is taught daily from 9:30-10:45 am across both key stages.
- Children record their outcomes in Maths books.
- All Maths planning can be accessed on Clarice Cliff's Google Drive and is planned in unit blocks.
- Half termly data will be available on Arbor.
- Regular interventions will take place in order to close identified gaps.
- Tracking sheets for Core Knowledge (including times tables)==

What is our approach to SEND and Greater Depth?

SEND

Our provision for pupils with SEND in mathematics is built on adapting both the delivery of the curriculum and the learning environment so that every child can access, understand, and enjoy maths. This includes the use of concrete and visual models, step-by-step explanations, revisiting key vocabulary and methods, multi-sensory experiences, and responsive, adaptive teaching.

Drawing on the provision outlined below, our maths teaching ensures that pupils with SEND learn within the same ambitious, well-sequenced curriculum as their peers. Purposeful scaffolds, tailored support, and carefully planned adaptations enable all learners to tackle rich mathematical problems, develop fluency and reasoning, and engage confidently with the depth of challenge embedded across our curriculum.

Subject challenges for SEND	Provision for SEND
Explaining a mathematical concept or giving reasons for a solution	Use stem sentences and structured reasoning frames to model how to articulate mathematical thinking clearly. Provide worked examples and shared modelling to reinforce mathematical language and logical steps. Offer sentence starters for reasoning (e.g. "I know this because…", "The pattern shows that…").
Recalling key mathematical facts (e.g. number bonds, multiplication facts, place value knowledge)	Plan daily retrieval practice focused on core knowledge such as number facts, vocabulary, and methods. Begin lessons with targeted recap tasks, informed by gap analysis, revisiting objectives children are not yet secure with. Use low-stakes quizzes, counting-stick routines, flashcards, and manipulatives to strengthen fluency and long-term memory.
Reading, interpreting, or accessing mathematical problems, representations, or word problems	Provide shorter, simplified problem texts using clear sentence structures and dual coding to clarify meaning. Present information in multiple formats (oral explanation, diagrams, models, videos) to reduce cognitive load. Use digital tools such as virtual manipulatives or simplified online resources to support understanding when physical representations may be overwhelming.

Understanding subject-specific mathematical vocabulary	Teach and revisit mathematical vocabulary explicitly at the start of every lesson using dual-coded word banks and concrete examples. Regularly model the use of precise mathematical terms within explanations, discussions, and worked examples. Provide vocabulary mats that remain accessible on desks and in intervention sessions.
Expressing their thinking or strategies orally or in writing	Use stem sentences to structure responses so children can clearly articulate their strategies and reasoning. Offer alternative methods of recording, such as whiteboards, iPads, talking tins, or verbal reasoning captured through audio tools. Allow processing time with strategies like stop and jot, giving pupils time to think, note ideas, then share.
EAL learners finding written mathematical language or instructions challenging	Break tasks into small, simple steps supported by visuals and modelling. Use dual-coded resources, diagrams, and clear examples to reduce reliance on extended text. Provide additional modelling, paired practice, and structured vocabulary support to build confidence and understanding.

<u>Greater Depth</u>

Our maths curriculum is carefully sequenced so that key knowledge and skills develop progressively and with increasing sophistication as pupils move through the school. Clear end-of-year expectations, outlined within our progression documentation, identify what secure and advanced understanding looks like in each year group.

As pupils gain confidence with fundamental concepts and methods, they are able to apply them flexibly, make their own strategic choices, and refine their approaches to solving problems. At greater depth, pupils independently adapt methods, justify their reasoning, compare strategies, and suggest improvements to their solutions.

Through a focus on mathematical talk, reflection, and evaluation, pupils develop the language and metacognitive skills needed to critique the efficiency, accuracy, and elegance of their chosen strategies- drawing on established success criteria and the expectations of high-quality mathematical reasoning.

Impact – The So What

- Mathematics is taught daily across the school.
- In all year groups, Maths takes place in the morning, with the following exceptions:
    - Year 5 on Wednesdays, where Maths is taught in the afternoon.
    - Nursery and Reception, where Maths is taught in the afternoon and through continuous provision.
- Children record their outcomes in their Maths books, providing a clear record of progress and achievement.
- All Maths planning is stored on Clarice Cliff's Google Drive and is structured in carefully sequenced unit blocks.
- Half-termly assessment data is available via Arbor to support monitoring and evaluation.
- Regular interventions are delivered to close identified gaps and accelerate progress.
- Tracking sheets for Core Knowledge and times tables are maintained to monitor fluency and recall over time.

Cultural Capital and Enrichment

At Co-op Academy Clarice Cliff, we believe that Mathematics provides more than academic knowledge; it equips children with the cultural capital they need to thrive in modern life. Our approach ensures pupils gain the skills, experiences and understanding to see mathematics as a powerful tool for making sense of the world.

Parental Engagement: We actively involve parents through workshops and resources that explain the models and strategies used in school. This enables families to support learning at home and builds confidence in mathematics both for children and adults.

Cross-Curricular Application: Mathematics is deliberately embedded across the wider curriculum. In History, pupils analyse timelines, chronology and historical data. In Geography, they interpret maps, scales and statistics to understand human and physical processes. In Science, they measure, record and present data to explore patterns and draw conclusions. Across subjects such as DT, Computing and PE, mathematical thinking is continually applied—strengthening pupils' ability to transfer knowledge and appreciate its relevance beyond discrete lessons.

Real-Life Financial Education: Through the PSHE curriculum, pupils engage with authentic financial contexts, learning about the value of money, budgeting, financial risks, and where to access advice. This prepares them to make informed and responsible decisions in later life.

By embedding mathematics across the curriculum, linking it to authentic real-world contexts, and creating meaningful partnerships with families and the community, we ensure pupils leave Clarice Cliff with both a strong mathematical foundation and the cultural capital to flourish in education, employment and life.