Mathematics Policy

Clive Church of England Primary School and Nursery

Date for next review: **September 2025**

I will lift my eyes to the hills - Where does my help come from? My help comes from the Lord, The maker of heaven and earth.

Aim High

We are a small and very special school, with an overall caring Christian ethos. We strive together to reach the highest, both academically and socially, in a Christian context;

We strive to develop an understanding of the Christian faith as well as an understanding of other world faiths, cultures and customs.

Psalm 121

Respect, Responsibility, Resilience

Intent:

At Clive CE Primary School, we believe that given carefully sequenced learning opportunities and small steps of teaching, all children can be successful in mathematics. As a result of success in all aspects of number and shape, we wish that our children develop positive attitudes towards mathematics so as they foster a lifelong love of the subject.

We want all children to acquire secure declarative knowledge (number facts and bonds and key mathematical facts) to support efficient mental and written calculations. We aim that sufficient, carefully planned practice and rehearsal is provided for all children so as they can become proficient and fluent mathematicians who can apply mathematical skills in a range of contexts and articulate their thinking successfully.

Our rigorous calculation policy outlines the mental and written methods that children should develop. These methods are carefully planned to be sequential, so children build clear, progressive procedural knowledge. This can then be developed into strategic knowledge so as children can solve problems and routine tasks most effectively (conditional knowledge).

We seek to ensure that children understand the relevance of how, what they learn now, relates to what they learn next, and how these skills relate to their everyday lives.

Implementation:

Mathematics is a core subject: it is taught discretely in Key Stage 1 and 2, and as part of small group, adult-led, or child-initiated learning in the Early Years.

Our mathematics curriculum is designed to ensure core aspects of mathematics are taught and revisited in a cyclical approach to ensure that children master progressively sophisticated knowledge and understanding of mathematical concepts. An agreed long-term plan guides teachers through the content of the National Curriculum in a logical and sequenced way. Professional Development materials and the Curriculum Prioritisation Materials established by the NCETM support teachers in planning and resourcing for small steps in a lesson; examples of high-quality questions and related activities to ensure children's knowledge can be developed progressively.

We follow pedagogic practices that broadly keep the class working together on the same topic, addressing the need for all children to master the curriculum and for some to gain greater depth of proficiency and understanding. Challenge is provided by 'going deeper' rather than accelerating into new mathematical content. Support is achieved for lower attaining children through revisiting of core concepts and immediate intervention in lessons.

We believe children must have sufficient time to become fluent. In Reception and Key Stage One, all children take part in a daily 'Mastering Number' session. This

provides high-quality planning and resources to support all learners in acquiring and rehearsing number facts. Children in Year 4 and 5 take part in daily Mastering Number Sessions which build and secure multiplicative fluency and reasoning.

Teaching and Learning

Long and medium-term planning:

At Clive C.E Primary School, the objectives of the National Curriculum are organised into units that are taught across three terms. Structured medium-term planning breaks down learning into 'smaller steps' however teachers must always use their professional judgement to ensure that the sequence of teaching matches the specific needs of their class. Teachers should use summative assessment data, Ready to Progress materials, and their own formative assessments to make adaptations to unit plans to ensure they meet the needs of their children.

Short Term Planning:

Teachers should plan for individual lessons in a manner which works best for them, in order to support their workload. When planning daily lessons, we ask that teachers:

- Ensure a clear, coherent learning outcome is the base of any lesson;
- Resources are planned to help children develop secure mathematical knowledge and understanding
- Additional adults are planned for and are guided to know how they can best support.
- Lessons are sequential, coherent and clear. They are founded from the MTPs or CP materials.

Teaching Approaches:

We recognise that in order for children to develop mathematical mastery, the teaching of mathematics might be different to a 'traditional maths lesson' or series of maths lessons. Teachers plan for small steps of learning to ensure that the underlying mathematical structures relating to a specific objective are clearly exposed and understood by children. Carefully designed variation of concept and procedure within lessons should be used to strengthen mathematical knowledge, understanding and application (see appendix 1 for TfM 5 big ideas). Opportunities should be given for individual thinking time, then paired and group talk and discussion throughout the lesson.

High quality questioning must be used throughout all mathematics lessons to expose and challenge children's thinking. Teacher 'talk' and description should be limited, encouraging children to make sense of mathematics through experiences and observations. Question examples could include:

- What do you notice about…?
- What is the same and what is different?

- What is the link between ____ and _____?
- How could this calculation help to solve this calculation?

Differentiation should be achieved through questioning, scaffolding, individual support and immediate intervention when possible. Children who grasp concepts rapidly should be challenged through more demanding and sophisticated problems which deepen their knowledge further; or through chances to prove thinking in a variety of additional ways.

Children's recording in lessons

Recording by children in lessons will vary. When appropriate, children will record answers and working out within their books. At times, teachers may feel it more appropriate for children to work practically; to complete work physically; or to record on whiteboards or with other media. A focus on oracy and talk within mathematics lesson is prioritised.

Children from Y1 -6 should record one numeral per box within their maths book. Numeral formation should be reinforced in line with the Feedback Policy.

We recognise that sometimes, structured 'worksheets' can be used to help organise learning and provided prompts for children in lessons. These should not be overused however and priority should still be given to children recording numerals, number sentences, lines and shapes using the $1cm^2$ boxes in books.

Mathematics in the Early Years

During the Early Years, children will develop their skills, knowledge and understanding of maths through oral, practical and play activities. Continuous provision is planned for to enable children to start to make use of number and mathematics in different situations. Maths might develop as a result of a story, shared experience, visit or as part of daily classroom life.

Children will have chances to develop subitising, counting, comparison, composition of number, shape, space and pattern. They will have opportunities to explore, estimate and solve real-life problems in both the indoor and outdoor environment.

Within Reception, children access focused daily mathematics teaching through Mastering Number: a high-quality, structured approach to the teaching of early number. The focus of these sessions is to develop numerosity and a sense of composition and construction of numbers within 10.

Mathematical vocabulary

It is vital that consistent language and vocabulary is used within mathematics lessons for all children. Specific guidance for this can be found in the Calculation

Policy and within medium term planning. All school staff must model the same language during mathematics lessons.

Children should be taught to reason and respond in full mathematical sentences.

Assessment, reporting and progress:

We recognise at Clive CE Primary School that ongoing formative and summative assessment within mathematics is essential in order to plan and teach lessons that are relevant to children and that suitably build their knowledge and skills. Assessment of children's mathematical development will arise from:

- Observing, listening, talking and interacting with children
- Questioning throughout the lesson, during the mini and main plenary
- Feedback from written or practical work
- Dialogue through group activities
- Structured independent tasks linked to medium term planning
- Termly teacher assessments (NFER)
- Foundation Stage profiles; Optional Year Two and Year 6 SATs; Year 4 MTC (as of June 2020).
- Data obtained through Times Tables Rockstars or Numbots.

It is the responsibility of all class teachers to keep relevant information that supports the ongoing assessments made of children. Assessment information arising from testing must be recorded and should be available at all times.

Special educational needs & disabilities (SEND)

All mathematics lessons should be inclusive to children with special educational needs and disabilities. Lessons should be planned in small steps so as all children can begin to understand and access increasingly sophisticated mathematical content. Equipment that helps suitably expose mathematical structures and support understanding is encouraged for use by all.

For children who are not working within the age-related curriculum of their year group, it is the class teacher's responsibility to plan accordingly to ensure that suitable work is provided. Use of Curriculum Prioritisation materials and Ready to Progress materials are advised to support in this and to help ensure suitable challenge and coverage. PIVATs may be used to help identify specific areas of mathematical need with intervention planned outside of, or in addition to the main maths lesson. PIVATs assessments should provide an indication of the progress being made by children. In cases where children have specific needs, or targets as part of PCPs, targets may be worked upon within the lesson as well as on a 1:1 basis outside the mathematics lesson.

For children who exhibit consistently high attainment and depth of understanding, it is the role of the class teacher, with support from the mathematics coordinator, to seek additional activities which further enhance learning, not broaden then curriculum on offer

Monitoring

Mathematics will be monitored throughout the year by the mathematics coordinator and other members of SLT as appropriate. 'Drop ins' and lesson observations will be used to obtain an understanding of the teaching and learning within classes in school. Book scrutiny will be used to ascertain the level of work being completed by children; their progress and teacher's affinity to long and medium-term planning; Teaching for Mastery Approaches; and use of the calculation policy.

Pupil voice will be gathered throughout the year to help understand what children have learned and if they are 'knowing and remembering more'.

Feedback will be issued to staff individually or as a whole school dependent on the nature of the monitoring conducted.

Role of the subject coordinator

The role of the mathematics coordinator should be to:

1. Ensure teachers understand the requirements of the National Curriculum and help them to plan lessons when needed.
2. Prepare, organise and lead CPD and joint professional development.
3. Discuss and report regularly with the Executive Headteacher and appropriate link governor, the progress of implementing the National Curriculum for Mathematics in school.
4. Support teachers in teaching for mastery; introduce new school staff to teaching for mastery principles; and offer teaching and learning support for teaching for mastery.
5. Monitor and evaluate mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
6. Introduce, evaluate and refine new approaches or systems for teaching of mathematics from Nursery to Year 6.

Links to other policies

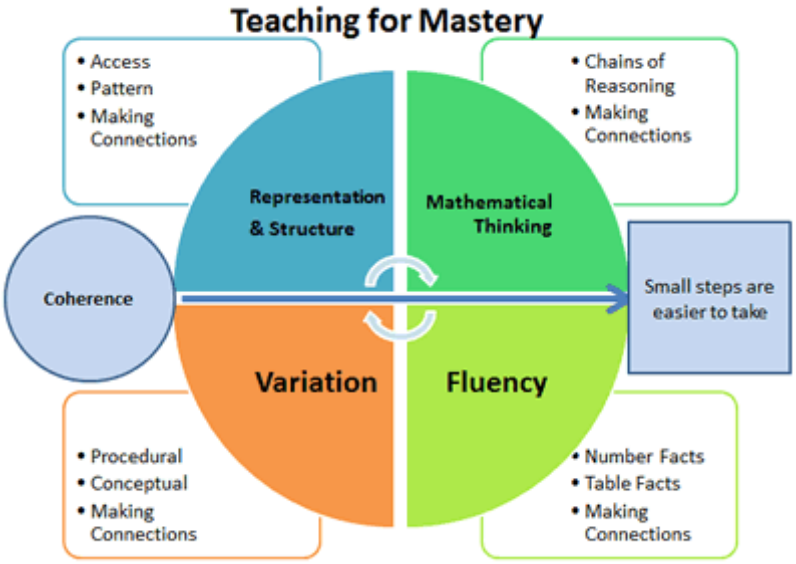
This policy should be used in conjunction with the following:

1. The Calculation Policy:
2. Feedback Policy;
3. Multiplication Facts Policy;

Appendix 1

Principles of Teaching for Mastery

In accordance with guidance from the NCETM, the following 5 big ideas should be focused upon when planning a series of mathematics lessons:



Coherence

1. Small steps are easier to take.
2. Focussing on one key point each lesson allows for deep and sustainable learning.
3. Certain images, techniques and concepts are important pre-cursors to later ideas. Getting the sequencing of these right is an important skill in planning and teaching for mastery.
4. When something has been deeply understood and mastered, it can and should be used in the next steps of learning.

Representation and structure

1. The representation needs to pull out the concept being taught, and in particular the key difficulty point. It exposes the structure. In the end, the children need to be able to do the maths without the representation
2. A stem sentence describes the representation and helps the children move to working in the abstract (“ten tenths is equivalent to one whole”) and could be seen as a representation in itself
3. There will be some key representations which the children will meet time and again
4. Pattern and structure are related but different: Children may have seen a pattern without understanding the structure which causes that pattern

Variation

1. The central idea of teaching with variation is to highlight the essential features of a concept or idea through varying the non-essential features.
2. When giving examples of a mathematical concept, it is useful to add variation to emphasise:
    a. What it is (as varied as possible);
    b. What it is not.
3. When constructing a set of activities / questions it is important to consider what connects the examples; what mathematical structures are being highlighted?
4. Variation is not the same as variety – careful attention needs to be paid to what aspects are being varied (and what is not being varied) and for what purpose.

Fluency

1. Fluency demands more of learners than memorisation of a single procedure or collection of facts. It encompasses a mixture of efficiency, accuracy and flexibility.
2. Quick and efficient recall of facts and procedures is important in order for learners' to keep track of sub problems, think strategically and solve problems.
3. Fluency also demands the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections and to make appropriate choices rom a whole toolkit of methods, strategies and approaches.

Mathematical thinking

1. Mathematical thinking is central to deep and sustainable learning of mathematics.
2. Taught ideas that are understood deeply are not just 'received' passively but worked on by the learner. They need to be thought about, reasoned with and discussed.
3. Mathematical thinking involves:
    a) looking for pattern in order to discern structure;
    b) looking for relationships and connecting ideas;
    c) reasoning logically, explaining, conjecturing and proving.