Crowcombe and Stogumber Church of England Primary Schools

Mathematics Curriculum Policy

Take hold of instruction, do not let go. Guard her, for she is your life. (Proverbs 4:13)

Review Cycle	Date of Current Policy	Author(s) of Current Policy	Review Date
Annual	October 2023	Gemma Martin	October 2024

Ratification

Role	Name	Signature	Date
Chair of Governors	**Janis Dean**	Janis Dean	**November 2023**
Head Teacher	**Kate Lewis**	**Kate Lewis**	**November 2023**

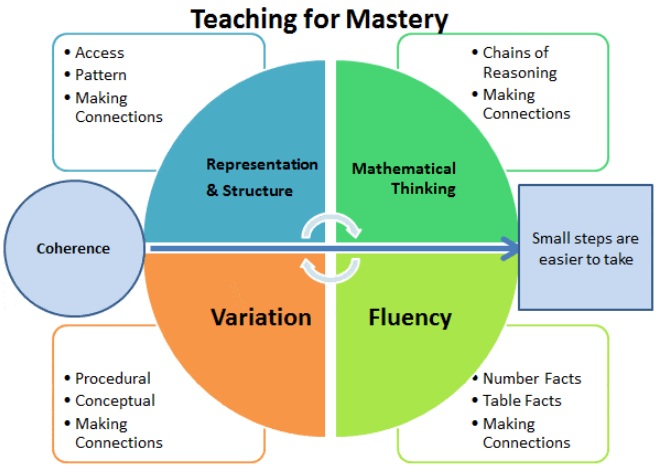
'Together, let us Love, Encourage, Achieve and Flourish'

In order to fulfil this vision we strive to build foundations to enable every child to become numerate, preparing them with the long-term knowledge and skills for adult life. The Mathematics teaching we provide should allow all children to fulfil their potential while giving them the knowledge to understand and use Mathematics in all its aspects. Developing and increasing pupils' recall of core mathematical knowledge and skills is core to our curriculum. The National Curriculum for Mathematics (2014) and the Framework for the Early Years Foundation Stage (2021) aim to ensure that all pupils become fluent in the fundamentals of mathematics, accurately recalling facts, methods and strategies from their long-term memory to calculate, solve problems, and reason. This policy will underpin our work to ensure that all pupils are confident in each of the areas of mathematics: Number and Place Value; Addition and Subtraction; Multiplication and Division; Fractions; Measurement; Geometry; Statistics and Algebra. It will ensure high standards are achieved, that mathematics is taught well and pupils make good progress at every stage.

Developing Mastery (Intent)

We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. Our Mathematics curriculum reflects a greater emphasis on mastery of the key skills of mathematics to ensure children have adequate time to develop their fluency, reasoning, and deeper understanding before moving onto a new concept. Assessment for Learning, an emphasis on investigation, problem solving and the development of mathematical thinking and a rigorous approach to the development of teacher subject knowledge are therefore essential components to the schools' approach to this subject.

Teaching for Mastery



Fluency involves:

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics

Representation & structure:

Mathematical structures are the key patterns and generalisations that underpin sets of numbers – they are the laws and relationships that we want children to spot. Using different representations can help children to 'see' these laws and relationships.

Variation:

Procedural variation – This is a deliberate change in the type of examples used and questions set, to draw attention to certain features.

Conceptual variation – When a concept is presented in different ways, to show what a concept is, in all of its different forms.

Mathematical thinking involves:

• Looking for pattern and relationships

• Logical Reasoning

• Making Connections

Coherence:

Teachers should develop detailed knowledge of the curriculum in order to break the mathematics down into small steps to develop mastery and address all aspects in a logical progression. This will ensure deep and sustainable learning for all pupils.

As a result of teaching and learning in mathematics, our aim is that pupils will be able to meet the key aims of the National Curriculum for maths.

- In our schools we aim to promote children's curiosity and enable them to safely take risks and learn from first-hand experience wherever necessary
- Our primary focus is to support the children to become fluent in mathematical understanding from the most basic level so that they can build upon their own understanding.
- We aim to enable our children to develop conceptual understanding, recall of number facts and patterns and apply their knowledge rapidly and accurately.
- We aim to promote children's ability to reason through opportunities to discuss their thinking and understanding. This emphasis may result in less written work but much deeper understanding.
- We promote problem solving and solution finding. This is not only true in mathematical learning but in almost all aspects of school life.
- We aim to support children to make progress at their own pace. Often misconceptions cause greater difficulties at a later stage of learning. We will promote smaller group learning opportunities whenever possible and encourage children to revisit their thinking to ensure they feel secure in their understanding and able to move confidently on to next steps and challenges.
- We aim to support our pupils to develop a positive attitude to maths, a high self-esteem and confidence in their mathematical ability.

Curriculum design:

EYFS:

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupil's interests and current themes and will focus on the expectations from Development Matters / Early Years Outcomes. Mathematical understanding can be developed through stories, songs, games,

imaginative play, child initiated learning and structured teaching. As pupils progress, they will be encouraged to record their mathematical thinking in a more formal way.

"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."

Statutory framework for the early years foundation stage.

KS1 and KS2:

To aid planning and teaching we follow the NCETM Curriculum Prioritisation materials which is an overarching framework from Year 1 – Year 6, from which our teachers use their expertise to enhance and adapt the content to meet the needs of their class, whilst ensuring a consistent approach to the use of models designed to support children in their understanding. We believe that this gives children of all backgrounds the best opportunity of success, developing and building upon their schemas from prior learning, especially those from disadvantaged backgrounds. The small steps to progression approach helps children to gradually develop their skills, allowing time and flexibility for children to fully master a concept before moving on. Our school progression document ensures that we cover all aspects of the requirements of Curriculum 2014.

We believe it is important that children are allowed to explore mathematics and present their findings not only in a written form but also visually; to that end the school has adopted the CPA approach: concrete, pictorial, abstract. The CPA approach to supporting the teaching of mathematics is embedded into our everyday lessons from reception to Year 6. This allows the children to experience the physical aspects of mathematics before finding a way to present their findings and understanding in a visual form, before relying on the abstract numbers. Age-appropriate manipulatives are available in every classroom to support this. It is important that manipulatives are carefully selected to teach a specific mathematical concept.

Assessment

Assessment takes two forms: daily formative assessment and summative assessment at key points through the year. During every lesson of Maths, teachers make informal assessments in order to plan, adapt and deliver the most effective learning. These assessments may be recorded as comments in children's books, or through discussion with the child. Where possible, teachers address misconceptions on the same day with small groups of children, or the next lesson if it is evident that a larger group need further practise and clarification. Children are expected to make corrections before they move on to the next small step.

Throughout the year at key points NCETM ready to progress assessments are completed alongside GL Primary Teaching Mathematics (PTM) assessments using the testwise platform. These assessments are used to support teacher assessment recorded on FFT, to build up a picture of progress and attainment in mathematics across the school. The maths subject lead and senior leadership team will use evidence from FFT, test scores, Pupil Progress Meetings, pupil conferencing, lesson

observations, book and planning scrutiny to monitor the progress of mathematics across the school.

In order to inform planning, teachers regularly track the children's progress. Formative assessment is used together with children's self-assessment to decide who is ready to move to the next concept and who needs to visit the concept again in another way. Children will be provided with feedback in accordance with the school's EYFS/KS1and KS2 Marking Policies.

Inclusion

Teaching maths for mastery is different because it offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils. Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for adaptation.

Taking a mastery approach, adaptations occur in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with higher attaining children, or those pupils who grasp concepts quickly, challenged through more demanding problems which deepen their knowledge of the same content. Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with intervention – commonly through individual or small group support later the same day where possible.

Where children make less than expected progress efforts are made to ensure relevant support is put in place to help support the child. No child will be denied a full curriculum however and concepts will be revisited throughout the year during challenge times or intervention times to help with long term understanding. This being said, in some instances, when agreed with the SENCo or an EHCP, individualised provision will be provided.

Parental Involvement

We encourage parents and carers to be involved in their child's mathematics education by:

- Inviting them into school twice a year to discuss the progress of their child.
- Providing parents with an interim report and a yearly report outlining their child's achievements.
- Delivering workshops to parents to support their child with mathematics
- Offering parent meetings to inform about the year 4 multiplication checks and the end of key stage tests.
- Sending homework activities in line with our homework policy to be completed by or with their child.

Monitoring and Review

The work undertaken will be monitored and evaluated by the curriculum leader with responsibility for Maths. This will be in line with the school's monitoring and evaluation practice e.g. sampling teacher's planning, samples of work, discussion with children and observations.

The work of the subject leader includes supporting colleagues in the teaching of maths, keeping up to date with current developments as well as providing a strategic lead and direction for the

subject. The Mathematics Subject Lead has termly update meetings with 'Mathstopia' –a local mathematics advisory service. The subject lead also meets with the Tone Valley Partnership of Schools in order to collaborate, moderate and share best practice. Additionally, we are participants in the 'Sustaining Mastery' work group which holds regular meetings to share best practise and collaborate with other schools to aid CPD.

All teaching staff have the opportunity to attend CPD in line with school policy and attend all in-house training. HLTAs and TAs are trained in house but also have access to external training where there is a need to do so. CPD delivered reflects the needs of staff and children within the school, based on conversation and data analysis.