

Ettington Church of England Primary School

Learning for the Fullness of Life



*Ettington Church of England
Primary School*

Statement of Intent

VISION AND ETHOS

At Ettington C of E Primary School we deliver a Mastery approach to Mathematics lessons whereby children achieve deep and sustainable learning with the ability to build upon something that has already been mastered. This means spending greater time going into depth about concepts using a small steps approach to secure knowledge, fluency and understanding. We believe that all children can be successful at mathematics and it is our duty to ensure that our pupils have a deeper understanding of the content and skills and that they develop resilience and perseverance when reasoning and solving problems.

Our aim is to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. Children are encouraged to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

At Ettington Primary School we have been on a journey over several years in order to improve the teaching and learning of mathematics.

The three aims of the NC should be addressed every day (not just in the maths lesson) – Fluency – Reasoning – Problem Solving.

MATHEMATICS PLANNING

Whole class together – we teach mathematics to whole classes and do not label children according to ability. Lessons are planned based on formative assessment of what students already know and we include all children in learning mathematical concepts. At the planning stage, teachers consider the **scaffolding** that may be required for children struggling to grasp concepts in the lesson and **challenge** ‘depth’ questions for those who may grasp the concepts rapidly. *In line with NCETM advice and much academic research, one form of depth frequently used, during the first part of the lesson, is variation theory (conceptual and procedural). Variation is one of the five ‘big ideas’ at the heart of Teaching for Mastery. For example, a child who can produce a quick correct answer may be asked to solve the question using more than one other procedure, to represent the question in more than one way (such as the bar model or part whole), to write another question using the same numbers and operation. This ensures that the children have a deep understanding of the objective being taught.*

Longer and but deeper – in order to ensure children have a secure and deep understanding of the content taught, our plans have been adjusted to allow longer on topics and we move more slowly through the curriculum. **We currently use ‘White Rose’ to support us in our planning and delivery of the National Curriculum Aims. This was a conscious decision this year based on the facility to quickly switch to Home School learning as required in light of the COVID -19 pandemic.** Teachers adapt each lesson to meet the needs of their children and add extra questioning / tasks which will allow children to learn the content more deeply. The learning will focus on one key conceptual idea and connections are made across mathematical topics. To outsiders it may appear that the pace of the lesson is slower, but progress and understanding is enhanced.

Key learning points are identified during planning and a clear journey through the maths should be shown on flipcharts (also reflected on working walls). Learning points may appear to be very small but this is deliberate. For example, a whole lesson may be spent on adding the ones to a 3 digit number. The expectation is that every child will master the concept and some children will work more deeply on the same concept using variation theory and challenge tasks.

Questions will probe pupil understanding throughout, taking some children’s learning deeper. Responses are expected in full sentences, using precise mathematical vocabulary.

D – Do you agree? (Active argument)

E – Explicit use of misconceptions (i.e. what it is / what it is not)

P – Probing questions

T – The missing digits / symbols

H – Here’s the answer. What is the question? What do you notice? What do you know?

We are confident that learning at a steadier and deeper pace, benefits all children. This ensures no child is left behind as well as providing challenges to stretch and deepen children who grasp content quickly.

TEACHING AND LEARNING

The Mastery Approach to Mathematics ensures that where possible there will be fewer gaps in learning.

In lessons you will see:

- We are spending longer on one problem or concept.
- Whole class participation with pupils taught together, most of the time.
- Whole class targets of the concept to be mastered in this unit of work.
- Independent practise time where pupils apply their new knowledge in multiple ways.
- Pupils talking to each other to secure their learning and try out ideas.
- Teachers targeting questions to individuals to deepen their knowledge.
- Verbal feedback during lessons, self-marking by pupils and highlighting of correct work. In line with the marking policy, math’s marking is swift. This allows for quick identification of children who require ‘same day intervention’ in order to access new learning the following day.
- Pupils working in mixed ability classes.
- High expectations of pupil responses in full sentences (stem sentences) with mathematical terminology and explanations.
- Use of real life applications wherever possible to make learning relevant.

- Giving children who need it, additional support, over a short period of time.
- Challenges available linked to current learning to deepen understanding of children who grasp the content more quickly.
- Regular reviews of learning.

...the answer is just the beginning.

Exploration – instead of ‘Let me teach you...’ or giving a learning objective as a starting point, children are encouraged to explore a problem themselves to see what they already know. At the beginning of each lesson this exploration is referred to as the ‘anchor task’. During this time, the teacher and teaching assistant will spend time observing and questioning the children. The understanding of children who provide a quick correct answer will be probed further using questions based around variation theory.

Develop reasoning and deep understanding (contexts and representations of mathematics) – problems are often set in real life contexts – carefully chosen practical resources and pictorial representations are used to explore concepts. These pictorial representations will appear in books as children show their understanding, rather than answers to a series of calculations. The use of practical resources, pictorial representations and recording takes place in every lesson (the CPA approach).

Structuring – the teacher will organise the findings of the exploration, compare/contrast strategies and guide toward the most efficient strategy (or the one being learnt that day).

Step by step approach – journey through the mathematics (these steps may appear small, especially at the beginning of a lesson, there are points when suddenly a jump appears to have been made, or an extra challenge appears – this is normal).

Questions to challenge thinking – teachers use questioning throughout every lesson to check understanding – a variety of questions are used, but you will hear the same ones being repeated: How do you know? Can you prove it? Are you sure? Can you represent it another way? What’s the value? What’s the same/different about? Can you explain that? What does your partner think? Can you imagine?

Due to the episodic style of the lessons with frequent questioning, lessons may appear to move slower than in the past. There will be more talking and less recording in books. We do not want children to attempt independent recording until we believe they are secure with the concept. We do not want them to practise errors.

Discussion and feedback – pupils have opportunities to talk to their partners and explain/clarity their thinking.

Rapid intervention (same day catch up) – in mathematics new learning is built upon previous understanding, so in order for learning to progress and to keep the class together pupils need to be supported to keep up and areas of difficulty must be dealt with as and when they occur. We do this through same day interventions of 20 – 25 minutes in the afternoon. In addition, we still run intervention sessions outside of the maths lesson for some targeted children, eg: Success @ Arithmetic, Catch Up, pre or post tutoring, fluency groups...

Marking – the marking policy has been amended following the guidance of the NCETM. Current marking policy is that learning is ticked and a comment is only made if/when a teacher feels this is necessary to move learning forward. Gap tasks may appear for individual children in their books, but usually gaps are addressed through same day catch up and therefore will not be recorded in books. The most valuable feedback is given during a lesson.

SEN pupils – may be supported by additional adults, different resources, differentiated activities. They will also complete additional activities outside of the mathematics lesson.

NB: We do not label our children. We have high expectations of all children and strongly believe that all children are equally able in mathematics. Some may take longer to grasp concepts and may need careful scaffolding or extra time/support (guided groups, same day catch-up, additional homework, pre-teaching, intervention group, specific parent support).

ASSESSMENT

In line with the school Assessment and Monitoring Schedule, the children in Years 1, 3, 4 and 5 are formally assessed using **White Rose** Assessment materials at the end of Autumn 1, Spring 1 and Summer 1. Children in Years 2 and 6 are assessed using KS SATs material. Year 5 use a combination of curriculum and KS2 SATS material. Teachers are continually formatively assessing learning. Assessment judgements are recorded half termly. This data is analysed in order to ensure that children are making at least 'Good' progress. Where progress or attainment is deemed to be below our expectations, conversations will be held with the relevant staff to see whether further support is required.

CURRICULUM CPD

The school has been part of the Central Maths Hub Teacher Research Group (TRG). Both Mrs Crowe and Mrs Kemp have participated in the study and disseminated their learning across the school. As Maths Lead, Mrs Crowe has delivered staff training on teaching the Mastery Approach to Mathematics – working with teachers, teaching assistants and parents in supporting and extending the children's maths learning experiences. Lesson Study is used in the spring term in order for teachers to have the opportunity to share best practice and learn from each other.

Working with the Central Maths Hub, both Mrs Crowe and Mr Jones have researched Lesson Design. Mrs Crowe has also worked with the Central Maths Hub on Sustaining Mastery. This has informed the future whole school design of the Maths Curriculum at Ettington Primary School and influenced our own Curriculum Professional Development needs as we continue to refine and enhance our practice. Staff receive training linked to Maths termly. This year, we are focussing on Variation Theories and Narrowing the Gap.