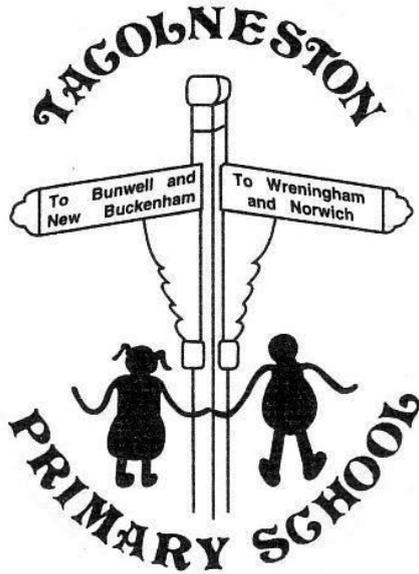


# Tacolneston & Morley CE VA Primary Schools Federation



*Work together, learn together, grow together...*

## **Maths Policy**

All policies at Tacolneston & Morley CE VA Primary Schools Federation should be taken as part of the overall strategy of the school and implemented within the context of our Safeguarding Policy and our vision, aims and values as Church of England Schools.

**Agreed: Spring 2021**

**Head Teacher:**

**Governor:**

**Review: Spring 2023**

## **Intent - Developing Mastery in Maths**

At the Tacolneston & Morley CE VA Primary Schools Federation, we firmly believe in the importance of maths for our children, both as a key to future learning and as a vital tool for use throughout their everyday lives. We believe that every child can master an understanding and love of maths with the right kind of teaching and support. So, we aim to provide a positive, stimulating environment where children feel confident to explore maths and develop their skills.

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of mathematics
- Are able to reason mathematically
- Can solve problems by applying their mathematics

We have an emphasis on developing depth of knowledge before breadth, with an overarching goal for children to develop their fluency, reasoning and problem solving skills while developing an enthusiasm for maths. Pupils will have access to the same curriculum content and are given the opportunity to deepen their conceptual understanding by tackling engaging, challenging and varied problems. Within our calculation strategies, children must not simply rote learn procedures but be guided to develop and demonstrate their increasing fluency through the use of concrete materials and pictorial representations. When planning, teachers identify ways to reinforce children's understanding and learning by challenging their understanding of concepts and exploring and discussing common misconceptions.

## Teaching for Mastery



1. We ALL start the journey TOGETHER

2. Some children will need a little additional support along the way

3. Some children, who feel confident, will be let loose. They'll be able to explore deeper into the woods, before returning to the group to continue on with the journey.

4. Children will not be racing off ahead on a different journey.

5. Children will not be left behind alone and isolated.

Martin Adsett  
Mastery Specialist

We're Going on a Maths Hunt

## Maths Mastery

See: The essence of maths teaching for mastery

Pupils are taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time, as happens in Shanghai and several other regions that teach maths successfully. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.

Concrete  
Pictorial  
Abstract  
Make sense  
Prove or disprove

Reduce cognitive overload  
Number facts  
Times tables  
Procedural fluency  
Fluency is tracked

1. What is the answer?  
2. Describe the method you used  
3. Why does the method work, what relationships are involved, what generalities or rules can we glean?

Make connections  
Sequenced journey  
Questioning  
Misconceptions  
Deep understanding  
Intelligent practice

From the simple to the more complex

Procedural variation

Procedural variation  
Conceptual variation  
(same idea, different problem)

Conceptual variation

224  
224 x 4 =  $\begin{array}{r} \phantom{0} \\ \phantom{0} \\ \phantom{0} \\ \phantom{0} \end{array} \times 4$

In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.

Intelligent practice

## Implementation - An Overview

The mastery model we are building incorporates these main points -

- All pupils are encouraged with the belief that by working hard they can succeed and that mistakes and the 'struggle' are what enable their brains to grow.
- Staff will use their maths skills, knowledge of common misconceptions and of their pupils to plan and deliver carefully sequenced lessons that use back and forth interactions to enable children to master the same content at the same time.
- Some children will have interventions to help build fluency and number sense or to reinforce concepts so that they are able to move forward with the whole class.
- Supported by high quality textbooks, teachers will use procedural and conceptual variation to deepen learning.
- Additional opportunities for developing fluency and reasoning are also built in during the week through the use of early morning work, times table rockstars, maths meetings or fluency sessions to ensure children are building on and retaining key knowledge.
- Children will use carefully chosen equipment to represent problems that expose mathematical structures and concepts; following a concrete, pictorial, abstract approach. It is important that structured models are used across the school to help children reason about mathematical relationships.
- Children will support each other's learning, talking about and explaining their mathematics.

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- Teachers plan and introduce sentence stems that express key concepts and enable children to communicate their ideas with precision and clarity; repetition of these help embed this knowledge.
- There is a strong and consistent focus on questioning that encourages and develops mathematical reasoning by, for example, asking children to explain how they solved a problem or worked out a calculation while considering and comparing different methods and their efficiency.
- Teachers plan cross-curricular opportunities to develop pupils' mathematical fluency.

### **Implementation - Inspire Maths**

We have chosen to use the Inspire Maths programme to guide our delivery of maths due to:

- Accessible Pupil Textbooks introduce concepts in a highly scaffolded way, enabling all children to develop critical thinking skills, make mathematical connections and become confident mathematicians.
- *Inspire Maths* is built on a Concrete-Pictorial-Abstract (CPA) approach, ensuring secure foundations and a deep understanding of mathematical concepts.
- *Inspire Maths* uses a spiral progression to develop fluency and reasoning, and builds strong conceptual understanding and problem solving skills for mastery.

The Inspire Scheme is a spiral curriculum which consists of 5 phases to be worked through from Year 1 - 6. The Inspire phases are not in line with each year group, but designed to be worked through as children develop their mathematical mastery. We use correlation documents to ensure we are covering the National Curriculum for Mathematics 2014 and this sometimes means that teachers will alter the order of the teaching whilst maintaining progression and meeting the needs of our children.

### **Implementation - EYFS**

In the (EYFS), we relate the mathematical aspects of the children's work to the Development Matters statements and the Early Learning Goals (ELG), set out in the

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EYFS profile document as number (ELG 11) and shape, space and measures (ELG 12). Maths development involves providing children with opportunities to practise and improve their skills in counting numbers, calculating simple addition and subtraction problems and describing shapes, spaces, and measures. We continually observe and assess children against these areas using their age-related objectives, and plan the next steps through a topic-based curriculum. Whenever possible, children's interests are used as a vehicle for delivering the curriculum; for example, an interest in dinosaurs may give rise to sorting, counting and recording the number of dinosaurs in small world play. There are opportunities for mathematical thinking throughout the EYFS (both inside and outside) – in planned activities, self-initiated learning and we recognise that children are just as likely to access the mathematics curriculum through building in the construction area or exploring in the outdoor area as from the self-selection of easily accessible quality maths resources.

### **Impact**

The impact of our policy will be monitored by the Maths Subject Leader to ensure that children are making good progress in developing their mathematical mastery. This will be guided by the Subject Leader Policy and the Assessment Calendar.

This will be done through:

- Monitoring achievement through formative assessments on Pupil Asset, use of data highlights, termly assessments, times table tracking and QLA to look for trends, strengths, areas for improvement and pinpoint children requiring intervention.
- Monitoring implementation through learning walks, work scrutiny and discussions with staff, pupils and parents.
- Liaising with the STEM team on priorities for development within school.