Wessex Learning Trust Maths Strategy

'Pure mathematics is, in its way, the poetry of logical ideas.'

Albert Einstein

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

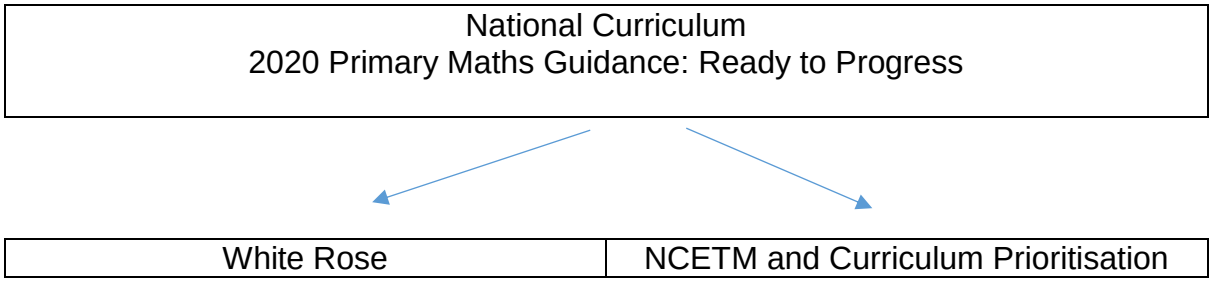
<u>At The Wessex Learning Trust our Intent is to:</u>

- develop a love for mathematics, first and foremost, and ensure every child feels valued, confident and able to participate unbounded in every Maths Mastery lesson
- raise levels of achievement and increase the appreciation of the power and wonder of maths
- instil mathematical learning behaviours so pupils have fluency and flexibility to make connections and build a deep conceptual knowledge and understanding

<u>Implementation</u>

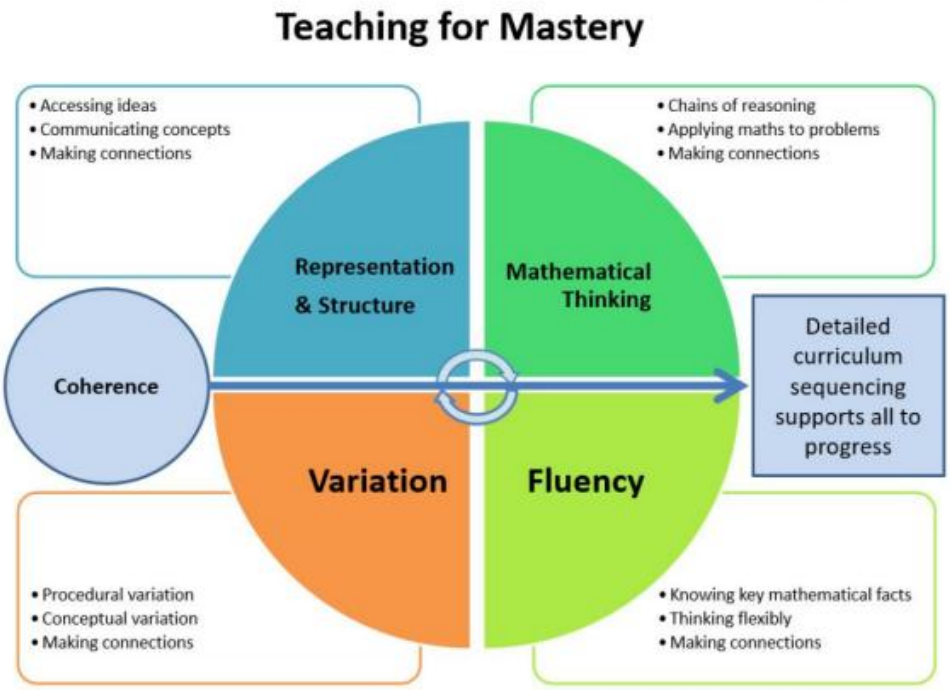
The National Curriculum underpins all school's maths delivery within our Trust. This is supported by the 2020 DfE Primary Maths Guidance and Ready to Progress materials.

We have adopted a Maths Mastery approach throughout our schools, delivered mainly through the Curriculum Prioritisation materials and White Road Maths in the remaining schools. In schools with mixed aged classes, we use White Rose as a vehicle for curriculum sequencing and delivery, supported successfully by the NCETM resources.



To ensure a Maths mastery approach is adopted in all our schools we understand the Five Big Ideas, see below, which underpin all our Maths Mastery work.

Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase ‘teaching for mastery’ describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that’s been taught to enable pupils to move on to more advanced material.



Coherence

Teaching is designed to enable a coherent learning progression through the curriculum, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply in a range of contexts and in small steps build upon prior learning.

Representation and Structure

Teachers carefully select representations of mathematics to expose mathematical structure. The intention is to support pupils in 'seeing' the mathematics, rather than using the representation as a tool to 'do' the mathematics. These representations become mental images that students can use to think about mathematics, supporting them to achieve a deep understanding of mathematical structures and connection. For example, the part whole bar model and ten frames.

Mathematical Thinking

Mathematical thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning,

and generalising. Pupils should actively engage in mathematical thinking in all lessons, communicating their ideas using precise mathematical language and creating their own lines of enquiry. This is drawn out through high level questioning to promote oracy.

Fluency

Regular routines enable efficient, accurate recall of key number facts and procedures is essential for fluency, freeing pupils' minds to think deeply about concepts and problems, but fluency demands more than this. It requires pupils to have the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections, and to choose appropriate methods and strategies to solve problems.

Variation

The purpose of variation is to draw closer attention to a key feature of a mathematical concept or structure through varying some elements while keeping others constant.

- Conceptual variation involves varying how a concept is represented to draw attention to critical features. Often more than one representation is required to look at the concept from different perspectives and gain comprehensive knowledge.
- Procedural variation considers how the student will 'proceed' through a learning sequence. Purposeful changes are made in order that pupils' attention is drawn to key features of the mathematics, scaffolding students' thinking to enable them to reason logically and make connections.

The CPA Approach

We enable this delivery by following the CPA approach; by ensuring pupils of all ages have access to concrete, pictorial and abstract resources, in any year group, to aid their procedural and conceptual understanding.

Concrete – using physical objects to solve maths problems

Pictorial – using drawings to solve maths problems

Abstract – solving maths problems using only numbers

Maths talk and Vocabulary

By following the Mastery approach, we place emphasis on staff and children using correct, ambitious, higher-level maths vocabulary to articulate their Mathematical knowledge and understanding.

This approach is aimed at giving children the language and terminology to be able to reason accurately and for them to know exactly what is happening in their learning before any formal recording takes place.

To support the pupils in this, we use stem sentences, alongside our WLT SLC approaches such as talk partners, to enable children to confidently articulate their thinking in a structured approach.

Vocabulary is explicitly taught, supported by the WLT teaching principles of…

‘I do’	‘We do’	‘You do’
‘I say’	*‘We say’*	*‘You say’*

Supporting all pupils

Schools within our Trust adopt Adaptive Teaching strategies in all lessons, enabling targeted support for our pupils based on accurate formative assessment to ascertain prior learning.

Meeting the needs of all pupils without differentiation of lesson content requires ensuring that both when a pupil is slow to grasp an aspect of the curriculum, he or she is supported to master it and all pupils should be challenged to understand more deeply; 'keeping up' not 'catching up'.

This is achieved by:

- Ensuring that any pupils having more difficulty in grasping any particular aspect of curriculum content are identified very rapidly and provided with extra support to help them master that content before moving on to new material, this may include pre-teaching of content or vocabulary.

- Same day intervention can provide the necessary support to secure learning before the next lesson. This requires rapid formative assessment and mechanisms for enabling pupils to access support as soon as the need has been identified.

- Incorporating skilful questioning within whole class teaching. Deeper understanding can be achieved for all pupils by questioning that asks them to articulate **HOW** and **WHY** different mathematical techniques work, and to make deep mathematical connections. These questions can be accessed by pupils at different depths.

Assessment

Schools use NCTEM or White Rose assessment questions, tasks and activities to ascertain the degree in which pupils have mastered the curriculum, and these are mapped out against the key topics of the Primary and Secondary National Curriculum for maths.

Schools complement these assessments with Testbase papers or SAT papers to support summative judgements three times a year, as outlined in the Wessex Assessment Calendar. Additional assessments are also undertaken by our pupils in transition years with agreed standardised papers.

We collate our summative judgments on Insight three times a year.