Whitstable & Seasalter Endowed Church of England (Aided) Junior School

Mathematics Policy

This policy reflects our school's vision

LET YOUR LIGHT *Shine*

Matthew 5:14-16

Love ★ Joy ★ Goodness ★ Resilience ★ Trust

Reviewed:	**September 2021**		
Date of Next Review:	**September 2023**		
Reviewer:	**Ed Baker**	**Signed:**	.....
Headteacher:	**Ellen Taylor**	**Signed:**	.....

This policy was ratified by the Governing Body on

Intent

At Whitstable Endowed we understand that our learners come from a variety of backgrounds with varying exposure to mathematical concepts and practical experience. We also understand that our learners require a variety of approaches in order to help all of them achieve maths confidence. As a result, they require robust and clear progression through mathematical concepts and support with learning. The goal of our Maths teaching is to deliver the core aims of the National Curriculum – both in the mathematics lessons and across the curriculum as a whole. Our children will be taught to be confident, successful and proficient mathematicians who can apply their Maths to other context and situations. We want our children to leave Primary school 'Secondary ready', with excellent foundations for future learning.

Implementation

At Whitstable Endowed, we use White Rose Maths schemes of learning that can be supplemented to extend learning further by a variety of mastery schemes, including Deepening Understanding. This ensures a comprehensive and expertly designed journey though the world of Mathematics. White Rose is based on small steps approach that aims to keep all learners school, we can ensure consistency of the mathematical elements and comprehensive coverage of the curriculum. We believe that this approach will facilitate consistent delivery of Mathematics across the school and across the inevitable ability range within year groups. It is also designed to support mathematicians who require more time and visual representation to grasp fundamental concepts and those who require challenging further to achieve Greater Depth.

To aid those learners that are not yet ready to achieve the same learning objectives as their peers, we use the 'Ready To Progress' criteria that teachers can access through Deepening Understanding to help fill the gaps.

White Rose Resources support us to provide:

- CAP (Concrete / Pictorial / Abstract) representations of different mathematical concepts.
- A variety of conceptual and procedural understanding.
- Logical and effective small steps that build towards a deep understanding of concepts.

- Vocabulary.
- Manipulative usage.

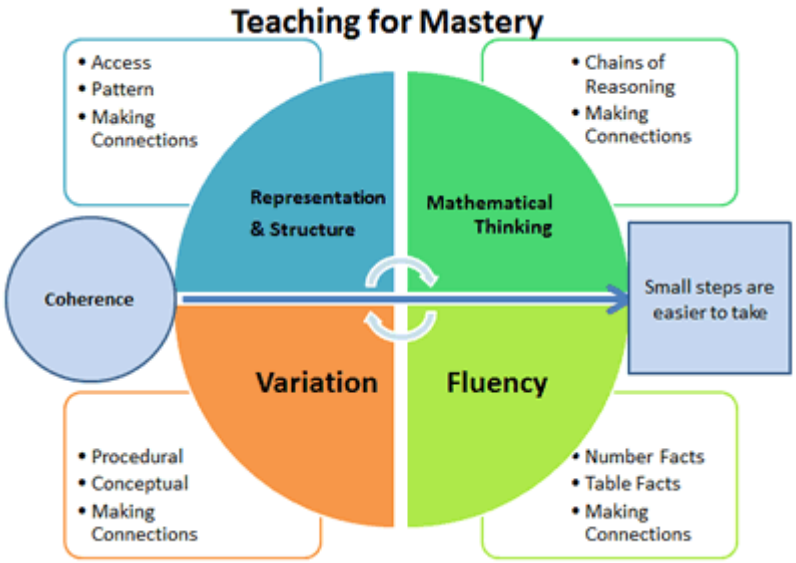
White Rose Resources support:

- All learners through a whole class learning approach.
- Visual representation designed to show concepts clearly.
- Re-visiting of concepts.
- Bar models and part whole models for problem solving.
- Clear progression of calculation.
- Fluency of calculation and concept.

Manipulatives are:

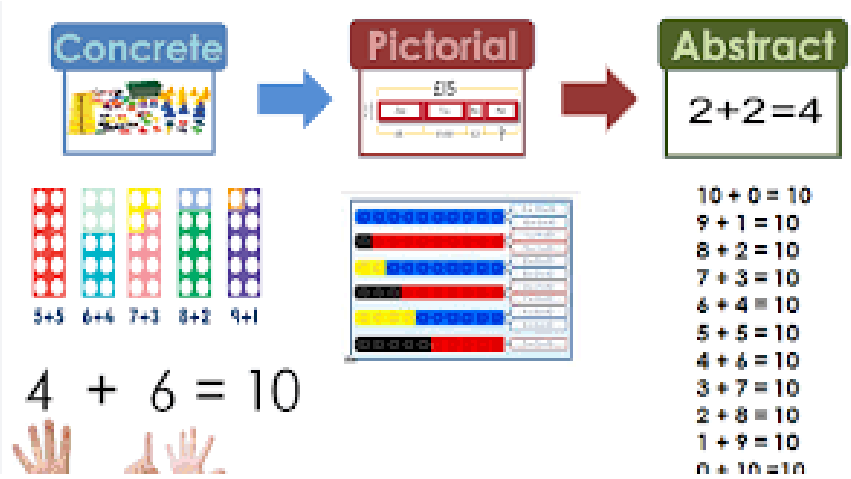
- Used purposefully and appropriately to help support and deepen learning - building a mental picture of a mathematical concept.
- Manipulative use develops through concepts as the learner moves from Year 3 to Year 6.

White Rose uses the Teaching for Mastery model as illustrated below. This has been developed by the NCETM.
NCETM ' Teaching for Mastery'



Concrete – Pictorial – Abstract Teaching Strategy

Children are encouraged to solve problems each day through the use of concrete resources such as place value counters and Base 10, pictorial representations such as bar models and abstract thinking. (Outlined below)



- **Concrete** is the 'doing stage', using concrete objects to solve problems. It brings concepts to life as children have the opportunity to be hands on and use physical objects to aid them ion developing their understanding.

- **Pictorial** is the 'seeing' stage, where representations of the objects are used to support learning. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding, by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem.

- **Abstract** is the 'symbolic' stage, where children are able to use abstract symbols to model and solve Maths problems.

Lesson Structure

- 'Mini Maths' (10 minutes)
  Opening 10 minute to focus on recollecting number facts, with a particular focus on multiplication facts. This can be delivered using a variety of strategies including games, songs, chanting and online platforms including Times Tables Rock Stars.

- Main Teaching (40 minutes)
  - Lesson progression is guided by White Rose structure and small steps.
  - Lessons will be planned using the White Rose teaching slides and adapted to suit the needs of the class.
  - The short date, the date in Roman Numerals and the lesson enquiry will be on the first slide.
  - Initial 'warm up' questions to be completed on mini whiteboards.
  - All children should have access to manipulatives when appropriate to help support and deepen learning.
  - Children will be provided with extension and challenge tasks if they complete learning that will follow the mastery approach.

- Feedback/Plenary (10 minutes)
  - Self or peer marking to be completed in lessons alongside teacher 'live' feedback.
  - Misconceptions should be addressed before the end of the lesson.

- Presentation
  - The lesson enquiry (small step), short date and Roman Numeral date to be underlined at the top of every lesson's work. When a piece of work is being continued on from the previous lesson, only the two dates are required.
  - Number formation should be clear and only one digit should be written in each square.
  - Pencils should be used for writing and rulers should be used to draw lines and representations.

Monitoring and Evaluation

The following elements will be monitored:

- Children's books
- Pupil conferencing and classroom practice visits through Learning Walks.

This monitoring will be fed back to staff and governors.

Learning Walks will be used to monitor classroom practice – including:

- Learning walls
- Pupil voice
- Delivery of learning
- TA provision and the best use of all adults to support and deepen learning for all children.

Impact

- By the end of Year 6, we aspire that all our children talk enthusiastically about Maths and will approach secondary school with Maths confidence.
- They will have developed a bank of efficient and accurate mathematical skills that can be used to calculate confidently and effectively.
- These will have been underpinned by the concrete, pictorial, abstract process so children understand rather than just do, which ultimately will allow children to identify when answers do not make mathematical sense.
- Children will be able to apply these calculation skills and understanding of other areas to become confident and resilient problem-solvers with the ability to reason and articulate their ideas mathematically and apply their mathematical skills to everyday life.