

## Farncombe Church of England Infant School

### Subject Story for Mathematics

#### Intent

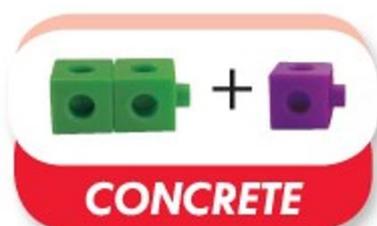
At Farncombe we believe that all children are able to succeed mathematically, and that one of our main priorities as maths teachers is to find ways of presenting, scaffolding and teaching concepts in such a way that every child will achieve. We want to inspire our children with the wonder of maths, so that they are engaged and motivated. Our children will be taught to be confident, successful and proficient mathematicians who can apply their maths to other contexts and situations.

#### The National Curriculum for Mathematics aims to ensure that all pupils:

- **Become fluent** in the fundamentals of mathematics so that they can develop their conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Reason mathematically**, including being able to develop an argument, justification or proof using mathematical language.
- **Solve problems by applying their mathematics to a variety of problems**, including breaking them down into a series of smaller steps, and persevering in seeking solutions.

#### Implementation

At Farncombe, we follow White Rose Scheme of Learning. Many of the principles of mastery underpin this scheme and our teaching. A whole class teaching approach is adopted, keeping the class working together and giving all pupils the chance to work on fluency, reasoning and problem solving tasks. Children are exposed to multiple representations of a concept, using **concrete, pictorial and abstract** representations to support the children's learning. Opportunities are also provided for all pupils to revisit and reinforce learning, including key concepts and from previous years, to help them truly develop their understanding and mastery.



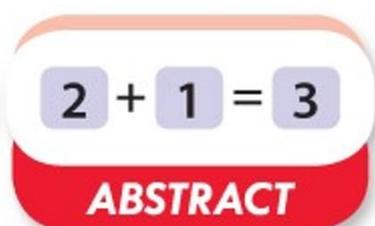
**CONCRETE**

**Concrete** is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life by allowing children to handle physical objects themselves.



**PICTORIAL**

**Pictorial** is the 'seeing' stage, using representations of the objects involved in maths problems. 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**

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

**In EYFS**, children work towards the Early Learning Goal for Number and Shape, Space and Measure. The White Rose materials are used where appropriate which has a strong focus on Number, ensuring children have a solid understanding of the numbers 1-10 and then the teen numbers. EYFS mathematics is taught through a combination of adult led activities, independent activities and child-initiated play. Materials from the NCETM are used to inspire and consolidate.

In the Key Stage One curriculum, the children build on their EYFS knowledge and focus on four areas across the course of the year: number, measurement, geometry and statistics.

**In Year 1** children will cover number and place value for numbers up to 50, addition and subtraction within 20, recognising 2D and 3D shapes, length and height, weight and volume, counting in groups of 2, 5 and 10, halves and quarters, telling the time (o'clock and half past) and recognising and adding coins.

**In Year 2** will continue to build on, deepen and secure their knowledge by covering number and place value for the numbers to 100, develop a variety of methods to solve addition and subtraction within 100, multiplication and division for the numbers in the 2, 3, 5 and 10 times tables, money including coins and notes, statistics, measurement, properties of 2D and 3D shapes, fractions, time (quarter past/to, 5 minute intervals). Children will develop a range of problem solving methods and be able to select the most efficient method to find the possible answers.

Mathematical language is crucial and modelled by teachers with the high expectation for children to use accurate vocabulary to enable them to embed the understanding and key concepts. Key vocabulary is identified at the start of the unit and recapped at the start of lessons, which is displayed on the class working wall.

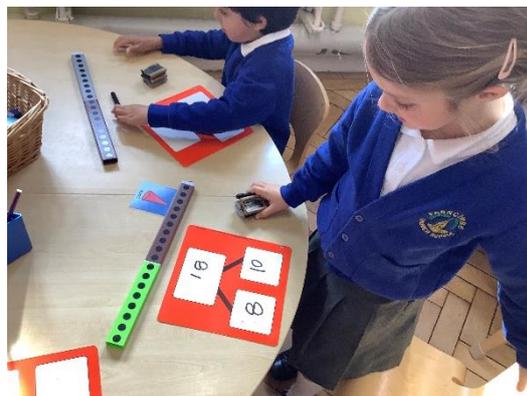
Throughout the lesson, multiple opportunities for 'Assessment for Learning' ensure that children have the chance to assess their learning and the teacher is able to identify next steps as well as additional intervention that may be needed. At the end of each unit of work, each child completes an end of unit check. This covers a range of concepts that have been covered to demonstrate their progress and understanding they have made over the unit.

Children are assessed formally on a half termly basis; this assessment is based on everything that has been covered so far within the term.

In order to increase fluency of arithmetic skills focusing repetition of the four basic operations children take part in a 15 minute 'Mighty Maths' sessions to practise and embed these skills.

**If you were to walk into a Maths lesson at Farncombe you would see:**

- ✓ Opportunities for children to recap previous learning.
- ✓ Engaged children working with concrete resources.
- ✓ Key vocabulary being modelled by adults and the expectation of children to use the correct mathematical vocabulary when explaining their understanding.
- ✓ Children exploring concrete, pictorial and abstract approaches to help understand a concept and deepen their understanding.
- ✓ Children being encouraged to explain how and why they have solved a calculation or problem.
- ✓ Adults working with a carefully, selected guided group to ensure progress.
- ✓ Adults using questioning to support and challenge children's learning



**Pupil Voice**

**Reception Pupil:** "It is interesting we use lots of different objects to help."

**Year 1 Pupil:** "My favourite part is working with a partner so they can help you when you are a bit stuck."

**Year 2 Pupil:** "I love maths, I like being a maths ninja!"

**Teacher Voice**

**Reception Teacher:** "White Rose is clear and user friendly for early year's teachers and pupils to access"

**Year 1 Teacher:** "The children are more confident using a range of resources and manipulating numbers using addition and subtraction, the range of presentation has secured understanding."

**Year 2 Teacher:** “The concrete to pictorial stage is really supportive for those children that feel less confident in maths to enable them to move to the abstract stage.”

### **Successes in 2021-2022**

- ❖ **To develop a consistent whole school approach to teaching maths through the use of White Rose scheme of learning:** Teachers are using the White Rose schemes of learning to plan and teach a small step approach to children’s learning journey through concrete, pictorial and abstract representations with adaptations for individual needs. All teachers have received White Rose Maths Training focusing on Concrete, pictorial and abstract approach.
- ❖ **Children are given regular opportunities to revisit and recap prior learning through the use of Flashback 4 tasks.** All teachers have used Flashback 4 as part of the maths lesson to revisit prior learning to increase fluency of skills. Children are able to successfully answer the questions with little or no support due to the consistent recapping of concepts to embed the knowledge or skills.

### **Priorities for 2022-2023**

- ❖ **To improve mathematics attainment for SEND and lower attaining pupils with rapid intervention:** Teachers will deliver pre-teach and catch up sessions to those who need additional support. All staff will be utilised to increase intervention capacity across the school.
- ❖ **To improve and consolidate assessment procedures:** Invest in Puma assessment for maths which will provide a more accurate individual diagnostic profile for each child to inform teaching and learning.

*Belinda Watson*

*Maths Subject Leader*

*June 2022*