Robert Miles
Infant School

Maths Rationale

1. **Ensure children are fluent in Early Reading and Maths and are exposed to a rich vocabulary.**

We embrace the Mastery approach to teaching mathematics. We explicitly model, systematically teach and expect pupils to use a rich, varied and specialist mathematical vocabulary. Maths provides opportunities for pupils to practise and apply reading skills. We recognise the critical importance of children's earliest mathematical experiences and ensure fluency in those aspects of maths that correspond with later success in maths (for example pattern).

2. **Develop confident, caring children with positive attitudes to learning**

Our five attitudes to learning are embedded in maths teaching. Pupils are actively taught how to apply self-motivation, determination, resilience, willingness to learn and reflection to problem solving and reasoning challenges.

3. **Offer a balance of knowledge and skills that ensure fast-paced progression across and between each year.**

Our curriculum is broken down and we present new learning in sequences of simple, small steps. We only proceed when those are mastered. Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. Conceptual understanding is fundamental and our emphasis on practise is part of achieving that understanding. Our curriculum is designed to maximize the likelihood that children will remember and connect the steps that they have been taught previously. We encourage pupils to see the connections. We develop progression as pupils move through the school, with increasingly complex problems over time. Teachers are aware of the previous and next steps in pupils' learning. We use *Rosenshine's 10 principles* to inform our classroom practice and limit cognitive overload to ensure pupils are storing learning in their long-term memory.

4. **Ensure that children are offered opportunities to develop fluency, problem solving and reasoning to ensure that knowledge is transferred to long-term memory.**

We strive to give pupils the understanding and the ability to recall and apply knowledge rapidly and accurately (Fluency) through varied and frequent practice. We teach and expect pupils to move fluently between CPA representations of mathematical ideas *(Bruner's constructivist theory)*. We present problems where there is not a standard procedure to follow. We expect pupils to appreciate the patterns of maths and reason mathematically. They develop an argument or justification and prove it using mathematical language, concrete, pictorial or abstract resources. We use variations in a sequence of questions to lead pupils to make generalisations about the structure of maths. Pupils apply the language and models of reasoning to other subjects, for example historical enquiry.

5. **Be creative and flexible, responding to children's interests and needs, including first-hand, meaningful experiences that engage them in their learning.**

We want our pupils to understand maths as a creative subject. Decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Teachers are creative and flexible in how they plan, deliver and adapt maths teaching. We use concrete and pictorial resources in every lessons. We address misconceptions rapidly. We want to give pupils the foundation for understanding the world.

6. **Be accessible for all children regardless of their background, needs or abilities.**

We embrace the Mastery approach to teaching mathematics. We set very high expectations and expose pupils to the same curriculum. The expectation is that the majority of pupils will move through our maths scheme of learning at broadly the same pace as research *(EEF 2018 & Zwitzerlood 2015)* shows that pupils experiencing setting make less progress than pupils taught in mixed attainment classes. It is an adventure that the whole class are on together. We strive to develop a great sense of curiosity and enjoyment in maths from all our pupils. We provide adaptations that are different from and additional to general provision, to ensure the majority of maths lessons are accessible for all children. We use specialist assessments to identify potential causes of lack of progress or attainment in maths.