We Care, We Aspire, We Belong

Milverton Community Primary and Pre-School

Mathematics Policy

Date: October 2021

Review Date: October 2022

Introduction

The National Curriculum states that:

"Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject."

At Milverton we see mathematics very much as a multi-discipline, cross curricular, interconnected subject which should encourage creativity. We want the children to see mathematics as being relevant to their world and applicable to everyday life as well as being something that they will need as they move on through their school life and ultimately to the world of employment. To that end, a high-quality, inter-related and creative mathematics experience should be one that develops the children's ability to think mathematically and one which allows them to apply the tools to which they have been exposed in a variety of ways.

Our emphasis is to ensure that all children:

- become **FLUENT**
- **REASON** and **EXPLAIN** mathematically
- can **SOLVE PROBLEMS**

This means that children need to be regularly exposed to opportunities involving increasingly complex problem solving which allows them to apply their Mathematics knowledge. In doing so they should be encouraged to develop an argument and line of enquiry which they can prove and justify using mathematical vocabulary. This includes the ability to break down problems, both routine and non-routine, into a series of steps.

Aims and Objectives

Our aim at Milverton Community Primary School is for all children to enjoy mathematics and have a secure and deep understanding of fundamental mathematical concepts and procedures when they leave us to go to secondary school. We want children to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

We want to teach mathematics in a way that:

- delivers mathematics in line with National Curriculum guidelines and the curriculum for the EYFS (Early Years Foundation Stage)
- ensures the delivery of mathematics is filled with cross curricular opportunities
- creates a lively, exciting and stimulating environment in which the children can learn mathematics
- promotes the concept that acquiring mathematics knowledge and skills provides the foundation for understanding the world around the children
- develops mental strategies
- encourages children to use mathematical vocabulary to reason and explain both verbally and in writing
- allows time for partner talk in order to stimulate and develop a curiosity for mathematics
- challenges children to stretch themselves and take risks in their learning
- creates a sense of awe and wonder surrounding mathematics
- ensures the EYFS children are given opportunity to develop sound mathematical understanding within their appropriate developmental milestone
- ensures children in Key Stage 1 are secure in their understanding of number and number relationships
- provides children with the opportunity for low entry-high ceiling challenges

Curriculum Design

At Milverton, we follow the White Rose Maths scheme of work to support our teaching and ensure that we cover all aspects of the requirements of Curriculum 2014 for mathematics and the EYFS curriculum 2021. This also supports our Mastery Approach to mathematics teaching and learning.

We believe it is important that children are allowed to explore mathematics and present their findings not only in a written form but also visually; to that end the school has adopted the CPA approach: concrete, pictorial, abstract. This allows the children to experience the physical aspects of mathematics before finding a way to present their findings and understandings in a visual form before relying on the abstract numbers. Our school Calculation Policy supports this process.

Planning

Teachers plan using the White Rose Maths scheme of work for all year groups from Reception to Year 6. Long and Medium term planning is available via the White Rose Maths website or the Shared Planning Google Drive. A variety of teaching methods are used across the school and within classes throughout the year, depending on what is most appropriate for the age and stage of the children. Whole class mastery lessons are embedded across the school and all children are encouraged to question and

explore. Staff also have access to a variety of extra resources to engage children in mathematics at a greater depth.

Across a range of lessons, children will engage in mathematical discussion (talk partner or group work), investigations, problem solving, practical experiences and written methods. To support pupils with fluency, we have built in an additional 10-20 mins daily session which revisits prior learning. This can include learning from the last lesson, the last week, the last block and the last year. 'Flashback 4' (White Rose) and 'No Nonsense Maths' provide ready-made questions for this and are available to all staff to support teaching of fluency on a whole class, small group or individual level as required. In KS1, the NCETM Mastering Number programme is used to support fluency development on 4 days per week.

Assessment

In order to inform planning, teachers regularly track the children's progress. Formative assessment is used together with children's self-assessment to decide who is ready to move to the next concept and who needs to visit the concept again in another way. This can then be used to update tracking information on FFT.

Termly, children in KS1 and KS2 will be assessed through the application of tests supplied by the White Rose Maths Hub. This summative assessment will be used in conjunction with all other formative assessment to track progress, identify next steps and therefore inform future planning.

Children will be provided with feedback in accordance with the school's EYFS/KS1 and KS2 Marking Policies.

Early Years Foundation Stage

Children in EYFS explore mathematical concepts through active exploration and their everyday play-based learning. Children are taught key concepts and develop number sense using a hands-on practical approach. EYFS practitioners provide opportunities for children to manipulate a variety of objects, which supports their understanding of quantity and number. Pupils explore the 'story' of numbers to twenty and the development of models and images for numbers as a solid foundation for further progress. The CPA approach is used when teaching children key mathematical skills. Practitioners allow children time for exploration and the use of concrete objects helps to support children's mathematical understanding. Mathematics in the early years provides children with a solid foundation that will enable them to develop skills as they progress through their schooling and ensures children are ready for the National Curriculum. White Rose Maths and the NCETM Mastering Number programme are

used to support adult led sessions and enhance small group work in the Reception Class.

Resources and Displays

Each classroom is well resourced with materials to support the delivery of mathematics with some larger, shared resources (particularly items supporting the teaching of volume, weight, measures, and geometry) being kept in the resource room. Maths working walls are used within the school to support children's understanding and development of concepts currently being worked on in class. As a school, we also hold a digital subscription to MyMaths to support homework and home learning.

Inclusion

In line with the School's SEND Policy, each child will have an equal entitlement to all aspects of the mathematics curriculum and to experience the full range of activities. Therefore, in delivering mathematics, care will be taken to ensure that a variety or learning styles are accessed and teaching methods adopted.

Intervention groups take place both within the lesson and outside of timetabled sessions. Intervention may be delivered by the teacher or teaching assistant and may involve individual or small group work. Intervention is for any learner that is deemed in need of support in a particular concept whether in order to 'catch up' or extend learning to a greater depth.

CPD

Weekly leadership time enables the Mathematics Subject Lead to keep up to date with the latest developments in best practise and ensure these are in place across the school. The Mathematics Subject Lead has termly update meetings with 'Mathstopia' – a local mathematics advisory service. The subject lead also meets with the Tone Valley Partnership of Schools in order to collaborate, moderate and share best practice. All teaching staff have the opportunity to attend CPD in line with school policy and attend all in-house training. HLTAs and TAs are trained in house but also have access to external training where there is a need to do so. CPD delivered reflects the needs of staff and children within the school, based on conversation and data analysis.

Please also refer to the School Calculation Policy