

# Meriden CE Primary School



## Mathematics Policy

**Our Vision – Real- life, Enjoyable, Fluent.**

<b>Approved by Governing Body</b>	March 2022		
<b>Signature of Chair</b>		<b>Date</b>	14.3.2022
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Through a positive and educational environment, we provide every child the opportunity to reach their full potential. We embrace Christian values and ensure all children are prepared for their next steps.

Mathematics is a creative and highly interconnected 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 Meriden we know that assessment for Learning, fluency, investigations, problem solving and the development of mathematical thinking and reasoning are essential. Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. Meriden's vision for math – **Real-life, Enjoyable and Fluent** - ensures pupils understand that mathematics is integral to all aspects of life and we endeavor to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them. We ensure continuity, progression and high expectations for attainment in mathematics. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning.

### **1 The Meriden aims of teaching mathematics:**

We aim to provide the pupils with an exciting mathematics curriculum and high quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and concrete resources so that pupils can move fluently between representations of mathematical ideas.

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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- can 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.

Our pupils should:

- have a well-developed number sense.
- know by heart their key instant recall facts (KIRFs\*) (see separate documents)
- calculate accurately and efficiently either mentally or written.
- Use strategies and skills to make sense of number problems so they can tackle and solve problems efficiently.
- recognise when it is appropriate to use a calculator and be able to do so effectively.
- the ability to work systematically where the task requires a careful accurate approach, as well as the ability to show imagination, initiative and flexibility when appropriate.
- explain their methods and reasoning, using correct mathematical terms.
- judge whether their answers are reasonable and have strategies for checking them.

## **2 Teaching and learning style**

Meriden follows the WhiteRose Maths scheme of learning for a natural progression as well as using other resources to support teaching of mastery. Our principal aim is to develop children's knowledge, skills and understanding. During our daily lessons we encourage children to ask as well as answer mathematical questions. They are taught to use a wide range of concrete resources as well as learn pictorial and abstract methods to be able to calculate accurately.

Mathematical vocabulary and KIRF\* documents are available for each year group to support teachers, pupils and parents. At Meriden our weekly timetable is designed so that there is more time focused on maths to embed key skills and knowledge. We have SODA, Flashback Fridays and KIRF time as well as daily maths lessons.

ICT is used in mathematics lessons for independent activities, modelling ideas and methods. We encourage the children to apply their learning to everyday situations through problem solving and investigative lessons. We use Maths.co.uk, Numeracy IDL and Times Tables RockStars apps to support number sense and calculation.

## **3 Mathematics curriculum planning**

Mathematics is a core subject in the National Curriculum, and we use WhiteRose Scheme to sequence our planning. We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National curriculum gives a detailed outline of what we expect children to achieve.

**3.1** Our medium-term mathematics plans give details of the main learning overview for each term. They ensure an appropriate balance and distribution of work across each term. These include opportunities for Flashback Friday to revisit prior learning.

**3.2** The class teacher completes the weekly plans for the teaching of mathematics. Daily planning can take a variety of forms while maintaining key agreed principles

## **4 The Foundation Stage**

In the Early Years Foundation Stage, all aspects of children's mathematical learning and understanding follows the DFE Development Matters (Non-statutory curriculum guidance for the early years foundation stage) and Early Learning Goals (ELG). The ELG's are split in to two areas of learning, Number and Numerical Patterns. Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children are given opportunities to count confidently and develop a deep understanding of the numbers to 10; the relationships between them and the patterns within those numbers. By providing these opportunities to build and apply this understanding, children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. The curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships and spot connections. We continually observe and assess children against the two areas and plan the next steps in their

mathematical development through a topic based curriculum and the White Rose scheme of work.

## **5 Contribution of mathematics to teaching in other curriculum areas**

### **Science**

The teaching of mathematics is closely related to science. It contributes to planning, recording and analysing in science for such activities:

- Collecting data
- Drawing and reading charts and graphs
- Representing data.

### **Computing**

Computing enhances the teaching of mathematics significantly, because it is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software and apps to present information visually, dynamically and interactively, so that children understand concepts more quickly. All children are given opportunities to use ICT to communicate results, produce graphs and tables, creating repeating patterns, to aid homework and reinforce learning. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships

### **English**

The teaching of Mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during plenary sessions. In English lessons, too, maths can contribute: younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

### **Personal, social and health education (PSHE) and citizenship**

Mathematics contributes to the teaching of PSHE and citizenship. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We encourage discussion time where children can discuss methods and how they solved problems related to real life,

### **Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. We look for opportunities for mathematics in the real world helping to raise aspirations in a variety of careers. Additionally, we seek opportunities for children to develop spiritually as they grow their appreciation for the beauty of mathematics.

### **Mathematics and inclusion**

At our school we teach mathematics to all children. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those identified as gifted and talented and those learning English as an additional language, and we take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Our Assessment Tool allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is supports the child's needs.

### **Assessment for learning**

Teachers assess children's work in mathematics from three aspects (long-term, medium-term and short-term). End of block assessments are used as well as end of term assessments to help support teachers judgements. Short-term assessments are closely matched to the learning intention and success criteria. The feedback policy is followed which enables teachers to give verbal feedback and identify children who are off track, this can then be used to inform future plans.

We use the national tests for children in Year 2 and Year 6 which are then used to support pupil progress through the next Key Stage.

### **Monitoring and review**

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school. The mathematics subject leader keeps samples of children's work for moderation. Teachers meet regularly to review individual examples of work against the national exemplification materials produced by the DfE.

The headteacher allocates management time to the subject leader so that s/he can review samples of children's work and plan curriculum improvement.