Mundy C of E Junior School
Math Policy
2021 - 2022

‘Let love and kindness be the motivation behind all that you do.’ (1 Corinthians 16:14)

Curriculum Intent

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.

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 develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- 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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Here at Mundy CofE Junior School, we understand the critical role that maths plays in the every-day life of our children and why is essential that all of our students receive a high-quality mathematical education that provides them with a strong foundation of understanding which will follow them throughout their life.

Outcomes

At Mundy CofE Junior School we hope to instil our children with

- A sense of enjoyment for the different aspects of maths
- An appreciation of how maths allows them to gain a deeper understanding of the world
- The ability to approach problems systematically and make flexible use of acquired knowledge when appropriate
- A solid foundation of knowledge that can be used as tool in our wider curriculum
- Problem solving and reasoning ability
- Confidence in their own ability as an individual
- A relational understanding of the different areas of maths and their connection to our wider curriculum

Programme of study

Lower KS2

During Year 3 and 4 there is a strong focus on helping our children to increase their overall fluency with place value, the four operations and recurring number facts. Children will also begin to make use of efficient written methods and apply this learning to increasingly large numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. Throughout this process, children have the expectation to correctly use their growing mathematical vocabular.

By the end of Year 4, children are expected to be able to recall all multiplication tables up to and including the 12 times tables in timely and effective manner.

Upper KS2

In upper KS2, children will extend the understanding of n umbers they have built up and work with increasing larger integers. Our students will grow their understanding of the interconnected relationship of the 4 operations and how this knowledge can be applied to the subjects of fractions, decimals, percentage and ratio.

The children are introduced to a much wider range of problems which call for more efficient forms of written and mental methods to solve efficiently. This will occur alongside the further progression of the children's problem solving and reasoning skills while making use of their ever-growing bank of mathematical vocabulary

By the end of Year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, in working with fractions, decimals and percentages.

Teaching and Learning

Mundy CofE Junior School's approach to the teaching of mathematics is based on:

- A mathematics lesson being taught every day
- The use of mathematical language and terms being used throughout the wider curriculum
- A lesson structure that contains instructional teaching, interactive inputs (allowing for AFL) and bespoke learning activities for both the whole class and smaller focused groups.

The maths curriculum is delivered by class teachers with work being differentiated appropriately to meet the diverse needs of our children. As this is a three-form entry school, maths is planned by one teacher for upper KS2 and another teacher for lower KS2. The maths subject lead's role includes supervision of both sets of planning to ensure high quality teaching and learning is taking place. We make use of the Abacus scheme to inform our medium-term planning with some adjustments made to cater for our mixed year group classes. This medium-term plan in turn informs weekly planning which contains details of learning objectives and gives appropriate differentiated activities to aid all child in meeting these objectives. Class teachers will make daily adjustments based on the individual needs of their class identified during lessons.

Special Education Needs

Children with specific learning needs will have them met through differentiation of the work in conjunction with the current class objectives. This is carried out by the class teacher using agreed provisions set by the school SENCO. Extra supported TA time is planned for and provided in relation to the identified needs of the individual child.

Cross Curricular

As well as discrete learning in our maths lessons, children our given opportunities across our wider curriculum to continue to hone their maths skills. In Science, we make use of statistical data analysis as well as a range of measurements. In Computing, we use our problem-solving abilities to aid us in complex coding issues. In Geography, children will need to analyse different statistics which will call upon their data handling skills. In Art, children will have to use their measurement skills to create grids whenever they need to draw an image with realistic proportions. In PE, children make use of their time keeping and measurement abilities when looking into the progress that they have made in different sports. They may also use data analysis to help them gain a deeper understanding of a chosen sport. We have also arranged maths treasure hunt activities which require our students to run and solve a multitude of clues scattered around our school grounds. Children are also encouraged to make wide use of their technical vocabulary whenever appropriate.

Resources

All classrooms have access to a range of appropriate practical resources which are used as tools throughout the learning process. We have number of physical resources such as

Cuisenaire rods, place value counters and dienes to help children better conceptualise the place value of numbers before moving on to more abstract forms. We make use of wide number of fluency board games so that children can practise and progress their knowledge of maths is an enjoyable environment.

Each child is registered with a TTRocktar account for their own use, to increase overall fluency and help to increase their enjoyment for the subject. Children also have access to ActiveLearn where they can use a range of Abacus resources and activities to push the learning further.

Displays

Every class has a maths display area relating to the current maths topic. The maths display is used by the teachers and children as a 'maths working wall' to build as a whole class so children can use this as an asset during their learning. All teachers are aware what a working wall should consist of during a learning sequence:

- Key vocabulary for the current maths topic
- Definitions of new key vocabulary
- Current learning objectives
- Examples of the methodology modelling different possible variants
- Step-by-step guides of how to perform the correct method (this is made alongside the children to assess their understanding of the method in question).
- Possible misconceptions
- Open ended questions to challenge children and further learning

Implementation

All areas are covered by our long term, medium term and short-term plans for children's mathematical learning. Continual assessments are carried out by class teachers and reasonable adjustments are made to ensure that needs of all individuals are met. There is a consistent approach throughout the school under the guidance set out in our calculation policy.

Assessment

1. Children are assessed regularly, and data is entered into our ITrack system
2. Data analysis occurs and children with additional support required to attain good progress are identified for staff to dimmish the difference
3. Children's understanding is assessed using "Read to Progress Criteria" set out by the DfE
4. Year 4 Children's times table fluency is tested in the MTC Test
5. Sticky Learning is embedded into lesson structures to help inter-connect subjects and allow for further AFL.
6. TTRS teacher accounts allow children to monitor which times table facts may need more focus in class both for the whole class and for any individual child.