Folly View Primary School

Maths Policy

Intent

The Maths curriculum is rooted in **practical experiences** to ensure a solid sense of early number and Maths. We recognise the importance of developing children's understanding and use of **mathematical vocabulary and language,** and this plays an integral role in our mathematics curriculum across the school. We want all children to enjoy Mathematics and to experience success in the subject.

The 2014 National Curriculum for Maths aims to ensure that all children: become **fluent** in the fundamentals of Mathematics, can **reason** mathematically, and can **solve problems** by applying their Mathematics.

These skills are embedded within Maths lessons and developed consistently over time through a mastery approach. We aim to support our children to **make connections** within Maths allowing them to have a deep understanding of mathematical concepts and to apply their learning to other areas.

The use of our **learning muscles** encourages all children to become **confident** and **resilient** mathematicians, who can use mathematical vocabulary, reasoning skills and knowledge in a variety of contexts.

We are committed to ensuring that children can recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts.

Implementation

In the Early Years Foundation Stage mathematics is taught through a practical, hands-on approach, exploring numbers, counting, shape and pattern. The children are able to access mathematical activities on a daily basis through the continuous provision that is delivered in the Reception and Pre-School classes. Children also have mathematical inputs and complete adult-initiated activities, using the White Rose Maths Early Years Scheme of Learning as a basis for delivering mathematical knowledge that is part of the whole school progression.

Maths is taught using the White Rose Maths 3.0 Scheme of Learning in Key Stage 1 and Key Stage 2 that breaks down the Maths curriculum specified by the National Curriculum, into small steps. The children learn about Maths concepts in 'Blocks' that focus on particular areas of mathematics. For example, a block that concentrates on place value, a block that explore addition and subtraction and many more. Each block gives children a chance to become immersed in that aspect of mathematics and gives them the opportunity to revisit and build on the skills acquired through each small step of learning. Teachers are encouraged to plan in year group teams for mathematics and adapt the White Rose Maths 3.0 Scheme of Learning resources and planning guidance in order to meet the needs of the children in their classes.

Children are taught mathematics through the 'Concrete, Pictorial and Abstract' mastery approach to ensure children gain a deep understanding of mathematical concepts, as demonstrated in the diagram below:

This starts with the concrete where children use maths manipulatives to explore and represent learning practically; before progressing onto pictorial representations such as place value charts, number lines and pictures; followed by the abstract which involves learning and understanding number sentences, equations and number facts represented by numerals and symbols. By exploring different representations children can develop variable fluency which they can then apply in reasoning and problem-solving activities. It also enables children to learn and make decisions about which strategies and different methods of representation they prefer or are appropriate when engaging in problem-solving activities.

Through the use of the 'Concrete, Pictorial, Abstract' approach all children across the school are given the opportunity to access the concepts and small steps being taught in Mathematics. This approach means that children are able to challenge themselves further as they progress from the concrete representations to the pictorial and then abstract representations, or they may continue for a longer period of time in the lesson with concrete, physical representations and possibly pictorial representation to help reinforce and embed the mathematical concept, so they feel secure. Children's individual needs in mathematics lessons are also catered for through adaptive teaching to provide scaffolding, support, and challenge.

As a school we understand the importance of developing mathematical knowledge for everyday life and, as a core subject, it is taught daily to ensure children have the time to learn and develop their knowledge of mathematical concepts ready to apply.

As a school we follow the Calculation Policy as developed by White Rose Maths. This explains the progression of mathematical knowledge related to addition, subtraction, multiplication, and division that children develop throughout primary school from Year 1 to Year 6. It explains in detail each of the different representations, how they are represented using concrete, pictorial and abstract representations and has a glossary explaining the mathematical vocabulary and terminology used.

Using a 'Quality First Teaching' approach, all teachers will have knowledge and incite of children's acquisition and retainment of mathematical knowledge which they will use to inform their teaching and the children's next steps for learning. This will be through:

- A secure understanding of year group expectations and/or pre key stage expectations.
- The use of a range of strategies that are clearly modelled to children and practised so that children are secure and able to use them independently.
- The use of concise formative and summative assessment, prior learning, maths talk and questioning.
- Adapting teaching and learning based on knowledge gained about children's understanding through Assessment for Learning.
- The effective deployment of additional adults to help support and scaffold learning.

Where appropriate, the use of assessment, both formative and summative, is used to inform where children need additional support with mathematical concepts and additional maths booster interventions in small groups are provided at other times of the day to help children develop their knowledge and confidence.

Key vocabulary is introduced and revisited regularly. This ensures that mathematical vocabulary knowledge is embedded, understood, and applied not just in mathematical lessons but in other subjects where there may be cross-curricular links.

A love of mathematics is promoted not just with children but in the wider school community through mathematics workshops for parents, mathematical themed days, the school website and the sharing of ideas and concepts through the Folly View Primary School Maths Newsletter. By engaging the wider school community in appreciating the importance and love of mathematics, we are aiming to enable parents, staff, and volunteers to be positive mathematics role-models.

Where opportunities present themselves, we endeavour to show how Mathematics can link to the wider school curriculum, through cross-curricular links. Here are just a few examples of the many cross-curricular links that can be made in school:

Science	Computing	History	Geography	Design and Technology
• Collecting data, taking measurements accurately during experiments. • Presenting data through graphs and tables to show the results of science experiments. • Interpreting, explaining, and understanding what the data and information collected in science experiments is indicating.	• Investigating and learning about famous mathematicians who influenced the development of Computing such as Ada Lovelace and Alan Turing. • The collection and representation of data using databases and spreadsheets. • Programming – using skills such as logic, problem solving, and concepts such as position and direction when using programmable robots, or programming characters on apps such as Scratch Jr, Scratch, Python.	• Understanding of time • Links to days of the week, months of the year, years, and dates. • Understanding and using Roman numerals.	• Developing an understanding of position and direction – compass points, grid references. • Measuring and collecting data as part of field work.	• Measuring length for materials such as wood, paper, card and fabric accurately when designing and making Design and Technology projects. • Measuring the capacity and volume of liquids in cooking. • Measuring the mass of ingredients required for a recipe in cooking.

Impact

The impact of the delivery of Mathematical learning will be measured and monitored in a number of ways by the Mathematics Subject Leader and the Senior Leadership Team:

- Through the collection of attainment data that helps monitor progress and achievement such as:
  - End of Key Stage national SATs assessments in mathematics.
  - Teacher Judgement as to whether children have met, exceeded, or are working towards the Early Learning Goal at the end of the Early Years Foundation Stage.
  - Teacher Assessments against the age-related expectations for each year group at the end of each long term in December, March, and June in each year group.
  - White Rose End of Term assessments for Each Key Stage 1 and 2 year groups in Autumn, Spring and Summer.
  - Through White Rose Maths assessments at the end of each block of work.
  - Through assessment for learning during Maths lessons where teachers monitor support and challenge that pupils require and adapt lessons accordingly.
- Through monitoring activities by the subject leaders such as:
  - Learning walks to check the consistency of teaching and learning approaches.
  - Pupil voice questionnaires and surveys to monitor children's retention of knowledge and their opinions about mathematics teaching and learning.
  - Book looks/ scrutinies that look at the quality of learning and pupils' work completed during Maths lessons.

These monitoring assessment and analysis activities enable the school to check the retention of learning to ensure that the learning 'sticks' and is not forgotten. It also enables the Mathematics Subject Leader to understand the school community's views and opinions of the teaching and learning of mathematics in school so that the experience of teaching and learning can be developed further to promote a love of mathematics.

The Mathematics Subject Leader also liaises closely with the Mathematics Link Governor to ensure that the Governing Body is kept up to date with the provision of mathematics teaching and learning; the lessons learned from monitoring activities; the school's strengths in mathematics; and areas of development or improvement for mathematics at Folly View Primary School.

Mathematics Policy Written by Miss C. Cossey, Maths Subject Leader, February 2023

Next review: February 2024