Blessed is the one who trusts in the Lord, whose confidence is in him.
They will be like a tree planted by the water that sends out its roots by the stream.
It does not fear when heat comes; its leaves are always green.
It has no worries in a year of drought and never fails to bear fruit.
Jeremiah 17: 7 - 8

MATHS POLICY

Introduction

At our federation, the Mathematics Curriculum has been developed so that every child can achieve and reach their full potential. Children can experience a sense of awe and wonder as they solve a problem, discover different solutions and make links between different areas of mathematics through rich and diverse learning experiences. It provides pupils with a deep understanding of the subject through a concrete, pictorial and abstract approach giving pupils opportunity to reason and solve problems and allows them to develop a fluent conceptual understanding in each area.

Intent

We aim to plant mathematics firmly in the real world and challenge the pupils to think about how they could apply concepts taught to everyday life problems. We adopt an approach which prepares children for mastering mathematical concepts and encourages children to embrace mistakes and take risks within an inquisitive and questioning environment. At the root of our mathematics teaching and learning, we aim to develop a positive mathematics mind-set in all children and a life-long love of the subject. Our core aims are to provide a Mathematics curriculum that builds on pupils' previous learning, individual talents and uniqueness and empowers our children to be:

ASPIRATIONAL RESILIENT RESPECTFUL

We believe that by having these three aims at the root, will equip our pupils to **LIVE FRUITFUL LIVES** and to **LEARN, LOVE and GROW.**

We believe that these are the three fruits that we would like to give our pupils to help them to succeed as life-long learners and children of God. The 'giving' of these fruits are what drives the curriculum at our Federation. We want our children to be happy mathematicians who are confident, reflective, and resilient.

The aims of our Mathematics curriculum We aspire for children to:

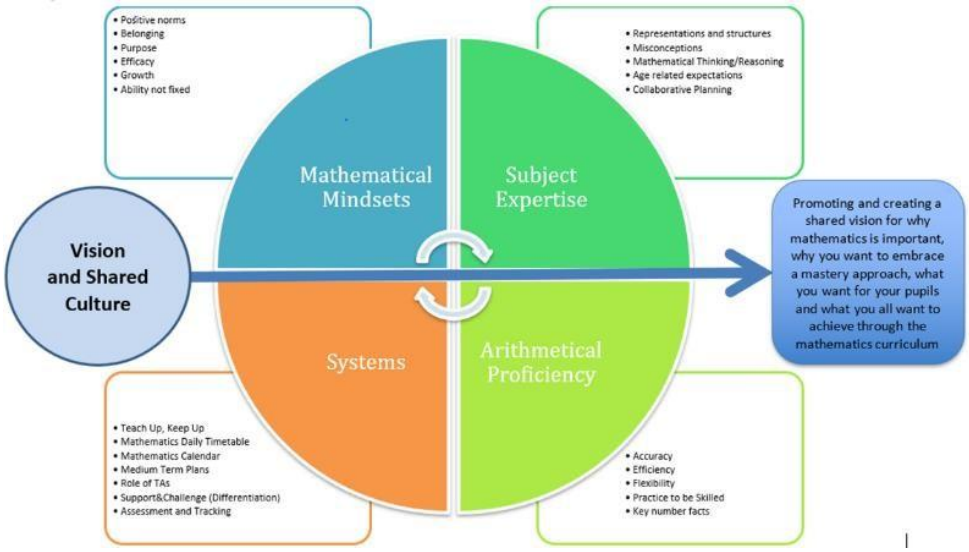
- Have a positive view of maths due to learning in an environment where maths is promoted as being an exciting and enjoyable subject in which they can investigate and ask questions.
- Learn in an environment where mistakes and struggles are praised and explored.
- Develop a positive mathematical mind-set ad not be afraid to take risks.
- Recognise relationships and make connections in mathematics.
- Show confidence in believing that they will achieve.
- Become happy mathematicians: confident, resilient and independent
- Be fluent in recalling mathematical facts and concepts without thinking, number sense, flexibility of thinking and appropriate and efficient responses to problems.
- Understand and apply their mathematical skills and knowledge to solving real life problems.
- Be confident in answering reasoning and problem solving questions using appropriate vocabulary and stem sentencing.
- Be reflective learners. Reflect upon their own learning and progress and feel a sense of pride in what they have achieved. (Positive mind-set)
- Enjoy being challenged and to explore a range of different strategies and approaches to solving a problem.

Implementation

The Mastery Approach

Fluency and understanding of key skills is a high priority at the Federation. Every lesson is focused on a small step approach to understanding mathematical skills and concepts. We encourage fluency by modelling the use of a range of practical equipment and representations to ensure a deeper understanding of knowledge and skills taught. This occurs in all year groups from EYFS to Year 6 and develops children's ability to explain and engage in 'maths talk' with a greater confidence and understanding.

The teaching for mastery approach is being adopted across our Federation and aims to provide all children with the opportunity to learn the basic foundations of mathematics earlier on in their school lives and then build on these and gain a deeper understanding of all concepts throughout their academic journey in school. We are currently working towards a long-term goal of implementing and modifying the teaching for mastery approach, undertaking much training and development, in order to deliver an even better education for our children. Our Maths Subject Leader has completed the four year Teaching For Mastery Programme and engages with the Yorkshire Ridings Maths Hub.



Teaching for Mastery approach

Fluency

We have a whole school approach on developing fluency and arithmetical proficiency, for example, with number bonds, addition and subtraction facts, division facts and times tables. Fluency is not just the ability to recall a fact quickly; it is the ability to show a deep understanding through representing, drawing, visualising and explaining a strategy, method or process. It is about having 'number sense', making links to areas of maths the children know and being able to spot patterns and explain and reason about what they are noticing and learning. We implement the Mastering Number programme daily across Key Stage 1 and 2 to secure firm foundations in number sense and times tables knowledge and understanding. **In EYFS**, the Mastering Number programme forms the core daily mathematics curriculum. We deliver daily multiplication sessions structured around the Clare Christie times tables approach to secure conceptual understanding and automaticity.

At our federation. we ensure a consistent approach to teaching calculation. Please see Calculation Policy for teaching and learning calculation in the Federation.

Effective Learning

We acknowledge that children learn in many different ways and we recognise the need to develop strategies that allow all children to learn in ways that best suit them most effectively. We take into account the different ways that children learn when planning and teaching in order to ensure all children access a full and varied curriculum.

We offer opportunities for all children to learn in different ways in Mathematics as outlined in our teaching and learning policy.

Pupils will work independently, in pairs, small groups and larger groups in structured and unstructured ways. Our Mathematics curriculum encourages children to take responsibility for their own learning, to be involved as far as possible in reviewing the way they learn and to reflect on how, what helps and what makes it difficult for them. We

aim to give children lifelong skills that will play a major role in their learning both at school and in the wider world. Please see Teaching and Learning Policy.

Curriculum Design

We use the Mathematics National Curriculum and Key Stage expectations to plan our curriculum. Our curriculum aims to ensure that all pupils: explore a wide range of mathematical concepts; access reasoning and problem solving activities; become competent at using the four operations; understand a range of methods to complete a calculation; have a comprehensive understanding of place value; have a deep understanding of shape, position and direction; are able to understand fractions and what they represent; use a range of techniques to present data and statistics; are able to use a range of measures to represent different quantities; are able to tell the time which is presented in a range of ways; can use algebra to work out unknown quantities; can use manipulatives and drawings to independently support their learning as well as showing deeper thinking.

At the centre of the mastery approach to the teaching of mathematics at the Federation, is the belief that all pupils have the potential to succeed. Children should all have access to their age-appropriate curriculum content and, rather than being extended with new learning, they should deepen their conceptual understanding by tackling varied and challenging problems. Similarly, with calculation strategies, pupils must not simply rote learn procedures but demonstrate their understanding of these principles and concepts through the use of concrete materials and pictorial representations to ensure fluency and depth of understanding.

Please see Progression in Calculation document that links to the White Rose Scheme of Learning we use:

Calculation-policy.pdf

How does the school ensure curriculum coverage?

As a Federation, we follow the White Rose Hub sequences of learning.

The Mathematics Subject Leader is responsible for developing the school's curriculum intent and ensuring that it is implemented consistently and effectively and is having an impact across the school. Planning ensures all children's needs and abilities are catered for within their year groups. This is stored on Microsoft Teams weekly.

Please see progression in Mathematical skills documents and learning overviews for all year groups.

Vocabulary

Developing pupil's vocabulary is an essential root to the mathematics curriculum and is an integral part of the daily mathematics lesson. Children are encouraged to explain, reason and talk about mathematics using the relevant vocabulary. They are provided with stem sentences to support this and children use these in mathematics talk and in their maths books to describe and explain.
Please see progressive vocabulary document: Vocabulary Progression.docx

Resources

Children will have the opportunity to use a wide range of resources to support their learning in mathematics. Practical resources are accessible for all children to collect independently in classrooms. These are situated close to the Maths Working Wall, which also provides visual support for children.
Children have access to resources such as number lines, place value counters, base 10, Numicon, counters, multilink, tens frames, clocks and measuring equipment. Rekenreks are also available to support children's learning across both schools.

Digital Learning

In addition, teachers plan to use a range of online resources making good use of the school laptops and IPads. A range of apps and websites will help the children develop their knowledge of mathematics as well as being fun. Children have access to Sumdog and the one-minute White Rose Maths app to support their learning and fluency.

Health and Safety

We must be alert to any possible dangers when working in school. It is very important that children are aware of the safe handling and storage of any tools and equipment. Risk assessments are carried out prior to any visits or visitors attending the school.

Equal Opportunities and Special Education Needs and Inclusion

All children are given opportunities to access the National Curriculum requirement. All children regardless of ability, ethnicity, religion or gender, will be given equal opportunity to access all aspects of the Mathematics Curriculum. Any child experiencing difficulty in accessing part, or all, of the curriculum, will be supported with the time, materials and equipment to access the activity at their own level where this is practically possible. Planning, resources and displays will reflect positive images of all communities represented in our society.

Impact

Assessment and feedback

Assessment informs the teaching and learning sequence. At our federation, assessment is an integral part of the teaching process. The assessment of children's work is ongoing to ensure that understanding is being achieved and that progress is being made. Teachers take time to review pupil knowledge and use these assessments to inform and adapt future planning. In the mathematics lesson, children are given verbal feedback and misconceptions may be addressed in the following lesson.

Feedback is given to the children as soon as possible and marking work will be guided by the school's Marking Policy.

Formative assessment within every lesson helps teachers to identify the children who need additional support to achieve the intended learning outcome. Times tables assessments are carried out weekly/fortnightly.

In addition to this, progress in Mathematics is also checked termly using the PUMA test in Years 1-6. This enables teachers to reliably benchmark performance and track progress against national averages in maths. It also provides a useful gap analysis and standardised score, which informs next stages of planning. We use Insight Tracking to monitor pupil progress and attainment in mathematics, informing targeted intervention and curriculum planning.

In EYFS, a baseline assessment is completed in the Autumn Term and further assessments are carried out throughout the year. Please see EYFS Policy.

Subject Leaders monitoring

The subject leader reviews standards and monitors the impact of the mathematics provision whilst also ensuring training and resources are up to date. The Maths Subject Leader has a clear role and responsibility for the progress of all children and key data is analysed and regular feedback is provided, to inform on progress and further actions.

Monitoring and review

We are aware of the need to review the school Mathematics Policy regularly so that we can take account of new initiatives, pupil needs, changes in the curriculum, developments in technology or changes to the physical environment of the school.