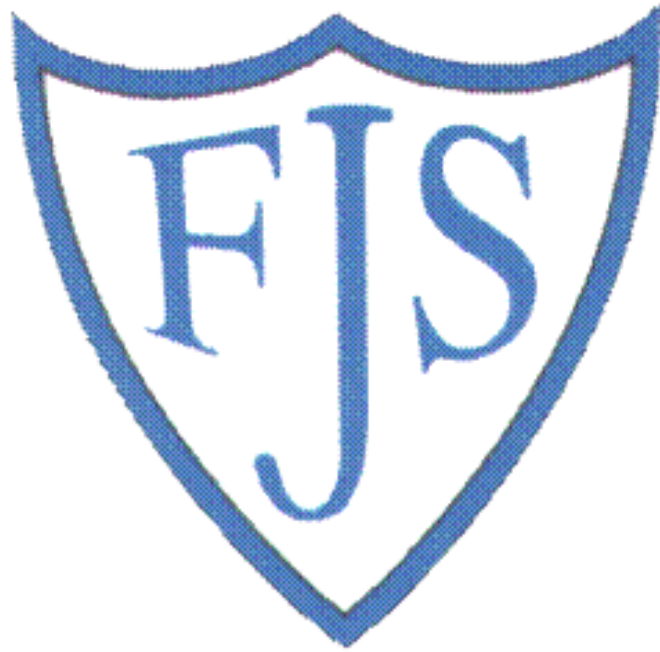


Forefield Junior School



Mathematics Policy

October 2021

Review 2024

Forefield Junior School Mission Statement

*Forefield Junior School is a **P.R.O.U.D.** school built on **Passion and Respect**, where **Opportunities** can be seized by **Unique and Determined** learners.*

We are passionate about learning in an environment where everyone is empowered to be themselves and to flourish. We respect and value each and every individual and cherish their unique qualities to create a sense of belonging. We are determined to support personal, social and emotional development by encouraging self-belief and providing opportunities for everyone to express themselves and grow in confidence.

By celebrating their diverse contribution to the life of the school and the wider community, each person will be encouraged to build on their foundations, to instil a belief in everyone that they have limitless potential and are always capable of achieving their best - throughout their lives. As a family we share each other's successes and take pride in them.

We will consistently promote the highest of standards in every aspect of school life, provide a vibrant, stimulating curriculum in a safe and happy learning environment, to foster excellent attitudes and behaviour. The inspirational opportunities we provide will fuel a passion for learning and a sense of pride in all we do.

This is what makes us PROUD:

Passion, Respect, Opportunity, Unique, Determined.

Aims

The mathematical curriculum at Forefield Junior School aims to:

- provide the opportunity for children to develop the practical skills and understanding as outlined in the National Curriculum for Mathematics
- develop the children's mental arithmetic skills and mental methods to help children observe the patterns and relationships of mathematics
- encourage the use of mathematical language in order to discuss, explain and express ideas and to interpret results
- develop the creativity and flexibility of mind to investigate and problem solve
- encourage children to work both independently and collaboratively and be able to select appropriate strategies, materials and equipment for tasks set
- help children develop their use of computing within the context of mathematics
- help children to experience success and enjoyment from mathematical study in order to develop a confident and positive approach to the subject.
- achieve their full potential.

Curriculum Intent

What are we trying to achieve through our curriculum?

1. An ambitious scheme of work that challenges all pupils

- Year group teams work together to develop a scheme of work that promotes reasoning, problem solving, perseverance and opportunities for collaborative learning.
- Opportunities to embed fluency are built in to all topics. Full curriculum coverage is ensured through monitoring and book scrutiny.
- Year group planning meetings are used to discuss the pitch of lessons for different ability groups.
- Pre-learning tasks inform the subject content and depth of future topics. We adjust the scheme of work for individual classes and the year group as a whole accordingly.
- Assessment for Learning questions and key vocabulary are included in lesson planning to inform pupil questioning.
- Co-coaching sessions are used to discuss the pedagogy of forthcoming topics. We share different strategies, resources and assessment for learning tools to ensure all teachers are constantly sharing and developing knowledge, skill and understanding.
- Transition meetings and cross phase lesson observations ensure KS2 starts where KS1 left off. This is monitored through monitoring and book scrutiny.
- Problem-solving questions are not restricted to worded problems.

2. Inspiring and exciting students

- We aim to make learning exciting.
- We encourage resilience by rewarding and celebrating perseverance rather than just the correct answer. Students develop perseverance as a result of regular exposure to low threshold – high ceiling tasks, opportunities to work collaboratively and a classroom culture that values making mistakes as a step towards new learning. This is monitored through learning walks and lesson observations.
- We promote independence by providing concrete materials and visual prompts that children can access without needing recourse to a teacher.
- Teachers give children thinking time when responding to questions.

3. Embedding the skills pupils have been taught

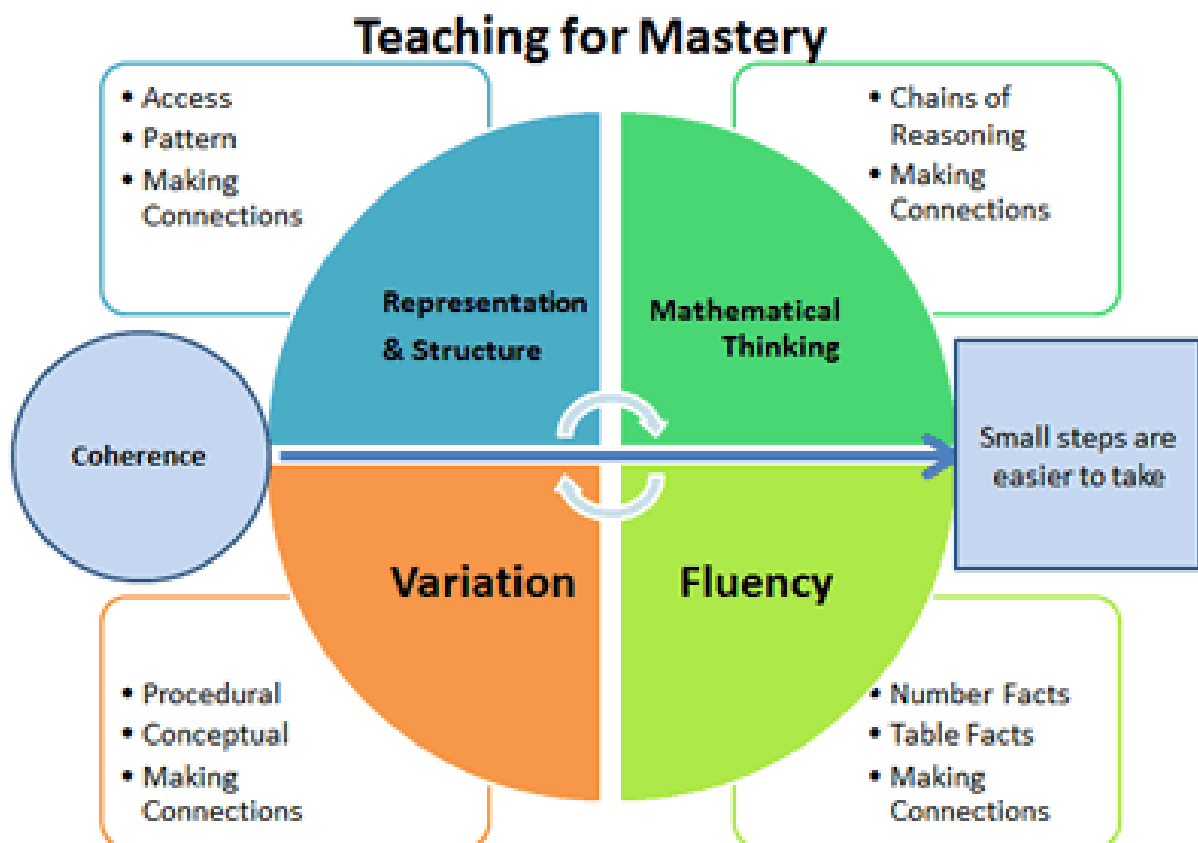
Opportunities are sought to embed mathematics in the wider curriculum. Some examples include:

- interpreting/drawing graphs
- investigating populations
- reading and interpreting problems
- presenting and explaining reasoning
- measuring using a range of measuring tools

interpreting scales and calculating distances
searching for and describing patterns

4. Expecting all pupils to master the Mathematics Curriculum

Our teaching for mastery is underpinned by the NCETM's 5 Big Ideas.



1. Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

2. Representation and Structure

Representations used in lessons are varied and designed to expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

3. Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.

4. Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

5. Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

Teaching for Mastery Principles

- It is achievable for all – we have high expectations and encourage a positive ‘can do’ mindset towards mathematics in all pupils, creating learning experiences which develop children’s resilience in the face of a challenge and carefully scaffolding learning so everyone can make progress.
- Deep and sustainable learning – lessons are designed with careful small steps, questions and tasks in place to ensure the learning is not superficial.
- The ability to build on something that has already been sufficiently mastered – pupils’ learning of concepts is seen a continuum across the school.
- The ability to reason about a concept and make connections – pupils are encouraged to make connections and spot patterns between different concepts (E.g. the link between ratio, division and fractions) and use precise mathematical language, which frees up working memory and deepens conceptual understanding.
- Conceptual and procedural fluency – teachers move mathematics from one context to another (using objects, pictorial representations, equations and word problems). There are high expectations for pupils to learn times tables, key number facts (so they are automatic) and have a true sense of number. Pupils are also encouraged to think whether their method for tackling a given calculation or problem is **Appropriate, Reliable** and **Efficient** (A.R.E).
- Problem solving is central – this develops pupils’ understanding of why something works so that they truly have an appreciation of what they are doing rather than just learning to repeat routines without grasping what is happening.

- Challenge through greater depth - rather than accelerated content, (moving onto next year's concepts) teachers set tasks to deepen knowledge and improve reasoning skills within the objectives of their year group.

Curriculum Implementation

Curriculum Design and Planning

- Staff use White Rose Maths Schemes of Learning as a starting point in order to develop a coherent and comprehensive conceptual pathway through the mathematics. The focus is on the whole class progressing together. Collaborative planning with year group colleagues is fundamental to ensure consistency.
- Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey is detailed in the scheme of work.
- Difficult points and potential misconceptions are identified in advance and strategies to address them planned.
- Key questions are planned, to challenge thinking and develop learning for all pupils.
- Contexts and representations are carefully chosen to develop reasoning skills and to help pupils link concrete ideas to abstract mathematical concepts.
- The use of high quality materials and tasks to support learning and provide access to the mathematics, is integrated into lessons. These may include White Rose Maths Schemes of Learning and Assessment Materials, White Rose Maths RPS questions, Abacus textbook activities, NCETM Mastery Assessment materials, NRICH tasks and challenges, visual images and concrete resources.
- Opportunities for extra fluency practice (instant recall of key facts, such as number bonds, times tables, division facts, addition and subtraction facts) should be provided outside mathematics lessons (morning starters or postlunch).

Lesson Structure

- Lessons are sharply focused; digression is generally avoided.
- Key new learning points are identified explicitly.
- There is regular interchange between concrete/contextual ideas, pictorial representations and their abstract/symbolic representation.

- Mathematical generalisations are emphasised as they emerge from underlying mathematics, which is thoroughly explored within contexts that make sense to pupils.
- Making comparisons is an important feature of developing deep knowledge. The questions “What’s the same, what’s different?” are often used to draw attention to essential features of concepts.
- Repetition of key ideas (for example, in the form of whole class recitation, repeating to talk partners etc) is used frequently. This helps to verbalise and embed mathematical ideas and provides pupils with a shared language to think about and communicate mathematics.
- Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and completion of short activities.
- Formative assessment is carried out throughout the lesson; the teacher regularly checks pupils’ knowledge and understanding and adjusts the lesson accordingly.
- Gaps in pupils’ knowledge and understanding are identified early and are addressed rapidly.
- Teachers discuss their mathematics teaching regularly with colleagues, sharing teaching ideas and classroom experiences in detail and working together to improve their practice.

Marking

- We have developed a marking system that clearly identifies areas of success and areas for development.
- All children have access to a copy of the code which is displayed in the classroom and in their exercise book.
- Children are expected to respond to the different elements of the code in different ways in response to the teacher’s feedback.
- Children are given sufficient time to respond to the teacher’s feedback.

Curriculum Impact

Assessment and Record Keeping

- Teachers use a range of assessment for learning strategies in every lesson to allow all children to demonstrate what they can do and to allow increased thinking time when responding to the teacher’s questions.
Strategies might include:

- ‘show me’ tools (individual whiteboards, numbers up etc)

- group discussions
 - talking partners
 - pre-learning and post learning tasks
 - targeted questioning
-
- In addition to the formative assessment undertaken in lessons, teachers will use termly summative assessments (NFER test) to reinforce their judgements and provide further opportunities to identify gaps in pupil learning and tailor future lessons.
 - Teacher judgements are then entered onto the class tracking spreadsheet each term and teachers talk through the progress of their pupils at termly pupil progress meetings: this ensures targeted support can be given to those who need it.

Inclusion and Special Needs

Forefield Junior School aims to meet the needs of all, taking into account gender, ethnicity, culture, religion, language, disability, age and social circumstances. The provision for children with special needs is detailed in the SEND Policy. Pupils may be supported by additional adults, modified and/or differentiated resources, modified and/or differentiated activities. They may also complete additional activities outside of the mathematics lesson or be taught in a smaller class size (Y4-6). We have high expectations of all children and strongly believe that all children are able to achieve in mathematics. Some may take longer to grasp concepts and may need careful scaffolding or extra time/support.

Home/School Links

At Forefield Junior School we encourage parents to be involved in the mathematics curriculum by:

- Providing parents with information about what is taught and when so that they can support at home. Pupils are provided with mathematics home-learning on a weekly basis which is linked to the content being taught in school.
- Using the school website to provide information about key learning in mathematics as pupils move through the school.
- Running curriculum evenings and workshops.
- Twice a yearly meetings between parents and teachers to discuss a child's progress.

- Reporting on mathematical progress in the end of year report.

Role of the Subject Leader

The subject leader:

- ensures teachers understand the requirements of the National Curriculum and supports them to plan lessons
- leads by example by setting high standards in their own teaching
- leads continuing professional development; facilitates joint professional development by providing coaching and feedback for teachers to improve pupil learning
- leads the whole-school monitoring and evaluation of teaching and learning in mathematics by observing teaching and learning in mathematics regularly; analysing assessment data in order to plan whole school improvement in mathematics; conducting work scrutiny to inform evaluation of progress; conducting pupil interviews
- takes responsibility for managing their own professional development by participating in external training, independent private study, engaging in educational research and scholarly reading and keeping up-to-date with Teaching for Mastery developments
- keeps parents informed about mathematics issues
- ensures that the school's senior leaders and governors are kept informed about the quality of teaching and learning in mathematics
- works in close partnership with the school's senior leaders to ensure the learning needs of all pupils in mathematics are met effectively
- keeps the school's policy for mathematics under regular review.