

Monksmoor Park CE Primary School

Maths Policy

Vision

At Monksmoor Park we are developing a mastery approach to the teaching of mathematics. Our aim is for all children to enjoy mathematics and have a **secure** and **deep** understanding of fundamental mathematical concepts and procedures which are taught through small achievable steps. At the centre of this approach is the belief that all pupils have the potential to succeed, which links closely to our vision 'Nurturing all to flourish and aspire'. All children should have access to the same curriculum content and, rather than being extended with new content from other year groups, they will deepen their conceptual understanding by reasoning and problem solving.

Aims and intentions

- To develop a growth mindset and positive attitude towards maths
- To become confident and proficient with numbers, including fluency with mental calculations and looking for connections between numbers
- To create problem solvers, who can reason, think logically, work systematically and apply their knowledge of mathematics
- To develop mathematical language which children can use appropriately
- To help children to become independent learners and to work cooperatively with others
- To give a real life context to learning in Mathematics

Legislation and guidance

We have embedded the three aims of the National Curriculum into our teaching: fluency, reasoning and problem solving. We believe that all three of these are equally important to develop well-rounded mathematicians.

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 non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

To support our planning we use high quality resources that address these aims. These include:

- Power Maths
- White Rose Schemes of Learning
- NCETM Mastery documents
- NCETM Ready to Progress

- **Number Sense**

Roles and responsibilities

The governing body will approve the maths policy, and hold the Headteacher to account for its implementation.

The Headteacher is responsible for ensuring that this policy is applied consistently across the school and for ensuring staff have the skills, resources and training required to implement the policy successfully.

Staff are responsible for:

- Applying the policy to their everyday teaching
- Identifying their own developmental and or training needs in relation to the policy
- Adapting the policy to meet the needs of their children
- Giving feedback regarding the impact of this policy

The subject leader has responsibility for the following key areas:

- Strategic direction and development to ensure high standards of teaching and learning
- Policy development
- Leading and managing staff in their subject area, including auditing and supporting colleagues in CPD.
- Ensuring efficient and effective deployment of staff and resources.
- To carry out subject specific monitoring activities in order to evaluate provision. This may include: analysing assessment data; visits to lessons; looking at children's work; speaking to pupils.

Planning and Teaching

- Staff use Power Maths Schemes of Learning as a starting point in order to develop a coherent and comprehensive conceptual pathway through mathematics. The focus is on the whole class progressing together.
- Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey should be detailed and evident on flipcharts or PowerPoints to reduce the need for teachers to produce detailed paper plans.
- Difficult points and potential misconceptions are identified in advance and strategies to address them are planned for.
- 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. Representations and methods are set out in the **calculation policy. See appendix 1.**
- Fluency skills are taught to develop children's rapid recall of key number facts. Each year group teaches specific skills as set out in the **Fluency Progression Document. See appendix 2.** Extra opportunities for this rapid recall should be provided outside mathematics lessons i.e. in morning work or after a break.

- Daily Number Sense sessions are taught in addition to the daily maths lesson. These sessions offer a systematic and structured programme to develop number sense and number fact sessions from EYFS through to the end of KS1.
- Staff in EYFS provide subitising and number sense opportunities through the daily maths session and in the continuous provision.
- All children have been signed up to Numbots which they will use both in school and at home to develop their understanding, recall and fluency in mental addition and subtraction. Year 1 and above will also have access to Times Table Rock Stars which is a programme designed to help pupils master the times tables.
- 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.
- Stem sentences are planned for and taught to the children to help them understand key concepts i.e. **'The one means one ten and the 3 means 3 ones.'**
- Reasoning sentences are encourage when pupils answer questions i.e. **'I know because..'** **'I think that** **' and 'I have noticed that...'**
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning and to move onto the next year group. The **Ready to Progress** objectives are planned into the curriculum to ensure that sufficient time is spent embedding these key skills.
- Maths is taught daily with 1 lesson a week being a focus on developing fluency.

Lesson Structure

Flexibility is built into the curriculum meaning that teaching can be paced according to the needs of the class. While some children will need to spend longer on a particular concept (through interventions or additional lessons), others will reach deeper levels of understanding. The class will however move forward together through the termly schedules.

Lessons follow the structure set out in Power Maths.

- Lessons begin with a **Recall session**, using either Flash Back 4's or teacher devised questions based on teacher assessments. These recall sessions reinforce key skills that have been taught in previous lessons.
- **Discover** offers a real life problem to arouse curiosity about the new learning. Children will be given opportunities to work with a partner and use manipulatives to solve the problem. Digging deeper opportunities are offered in the discover stage to offer a further challenge.
- **Share** is a teacher led part of the lesson that follows the problem from the discovery stage and highlights key strategies and representations. Mistakes are reflected on and used to strengthen understanding.
- **Think Together** offers pupils the chance to work on different problems where they can apply the new skills. Pupils are encouraged to make connections and spot patterns between different concepts.
- During the **Practise** stage pupils work independently or in small groups to practise and embed the new learning.

- **Reflection** is done at the end of the lesson and allows teachers to check how deeply the pupils have mastered the key concepts. Spot the mistake type questions are used for checking misconceptions.

Early Years Foundation Stage

Children in EYFS explore mathematical concepts through active exploration and their everyday play-based learning. Children are taught key concepts and develop number sense using a hands-on practical approach. EYFS practitioners provide opportunities for children to manipulate a variety of objects which supports their understanding of quantity and number. Pupils explore the 'story' of numbers to twenty and the development of models and images for numbers as a solid foundation for further progress. The CPA approach is used when teaching children key mathematical skills. Practitioners allow children time for exploration and the use of concrete objects helps to support children's mathematical understanding. Mathematics in the early years provides children with a solid foundation that will enable them to develop skills as they progress through their schooling and ensures children are ready for the National Curriculum.

Assessment

- Teachers offer assessment opportunities within lessons with high quality questioning and through the independent practise stage. Same day intervention will be offered where possible to further teach and consolidate concepts with pupils that may need some extra support.
- End of unit assessments will take place and be analysed to identify if pupils are ready to move on to the next unit. Attainment of each pupil will be tracked in order to monitor progress and recorded on Learning Ladders.
- Termly reasoning and arithmetic tests will be carried out and analysed to inform future planning.
- Teachers will use both these assessments to provide further feedback or re-teach concepts where necessary to close gaps and ensure pupils have mastered the curriculum content at that point.

Inclusion

In line with our mission statement, we believe every child should have equal opportunity to achieve their full potential and access an ambitious and coherent curriculum that leads to deep learning. We have high expectations of all children and strongly believe that all children are able to achieve in mathematics regardless of race, gender, cultural background, ability or Special Educational Needs or Disability. Some may take longer to grasp concepts and may need careful scaffolding or extra time/support.

SEN children may be supported in the following ways: further use of representations, different resources and carefully directed questioning. They may also need additional time outside of the maths lesson. We will ensure specific barrier to learning are removed to enable each child to focus on their mathematical learning.

Monitoring

Monitoring and evaluation of Mathematics teaching and learning in the school is carried out by the Mathematics Co-ordinator, phase leaders and SLT. When possible, discussion with children will take place along with scrutiny of work.

Links with other policies

- Marking and Feedback
- SEN
- EAL
- Assessment
- Curriculum