



Mathematics Policy

2019-2020

Vision of the Subject

At Moorpark we enable children to 'reach' for their goals, 'explore', 'believe' in themselves and each other and therefore 'achieve'.

We know that our children start school with different levels of maths understanding. Our curriculum is designed to ensure that all children have access to progressive, creative and engaging opportunities in maths; preparing them for their future as a lifelong learner.

Specific language development and practical experiences in maths will enable them to become "deep thinkers" acquiring maths skills that can be recalled quickly and transferred and applied in different contexts.

The challenges presented in maths will enable children to become resilient, making clear connections across the areas of maths, using their knowledge in other subjects and in their everyday lives.

It is our aim to develop:

- A positive attitude towards mathematics and an awareness of the fascination of mathematics;
- Fluency, reasoning and mastery in mathematical knowledge, concepts and skills;
- An ability to solve problems, to reason, to think logically and to work systematically and accurately;
- Initiative and an ability to work both independently and in co-operation with others;
- An ability to communicate mathematics;
- An ability to use and apply mathematics across the curriculum and in real life;
- An understanding of mathematics through a process of enquiry and experiment.
- To follow the agreed methods of calculation for all four operations. (See calculation policies)
- Opportunities for all children within the school to develop their full potential in mathematics.

- **Equal opportunities / Inclusion**

Moorpark ensures that all children gain equal access to the mathematics curriculum regardless of gender, ethnicity, ability or individual need.

A variety of teaching and learning styles are employed, including concrete, pictorial and abstract representations of mathematics to ensure that all learners can make progress in mathematics. Furthermore, we enable all children to fully access the curriculum by making 'reasonable adjustments' to overcome any barriers.

When educational support staff are available to support groups or individual children they work collaboratively with the class teacher. The support teacher feeds back to the class teacher when appropriate to inform evaluations, assessment and future planning.

Teaching methodology and organisation

The expectation is that most pupils will move through the curriculum at broadly the same pace. Pupils who move through the curriculum quickly will be challenged through the platinum activities which endeavour to develop the children's reasoning skills which allow them to demonstrate their mathematical thinking. Those who are not sufficiently fluent will be given tasks and concrete (practical) resources to help consolidate their understanding.

Opportunities for the children to use and apply the mathematical skills they have acquired will be included within each of the teaching units. Where possible these experiences will be cross curricular, will include 'real life' situations and will be creative resulting in practical activities to enhance the teaching and learning of mathematics.

Children will be encouraged to investigate different ways of solving mathematical problems as maths is about making connections and communicating ideas.

Maths is not just about completing written calculations; it is about understanding connections by asking questions, using creativity and problem solving. The children will be encouraged to develop their own mathematical skills so that they can solve calculations using a variety of methods.

Homework is given to support mathematics through tasks such as the learning of tables and number bonds. Alongside this there will be opportunities for the children to consolidate their learning through well-chosen tasks.

ICT will be used in various ways to support teaching and motivate children's learning. ICT will involve the computer, calculator, and audio-visual aids. They will however only be used in the daily mathematics lesson when it is the most efficient and effective way of meeting the lesson objective.

We encourage the children to talk through mathematics. Precise mathematical vocabulary is used in mathematics lessons and the children are given opportunities to talk about and evaluate their mathematics during lessons.

Mastery Approach 2017 onwards.

Since September 2017 Moor Park Junior School has been part of the Mastery Work Group with the local Maths Hub. We are now approaching our maths teaching using a mastery approach. To this extent there will be elements of maths mastery teaching in all our classes. This could include mixed ability groupings, differentiation through questioning, support, apparatus or challenge. During lessons there has been a shift, when appropriate to on the spot marking. This means the teacher/ TA marking during the lesson to spot misconceptions instantly. This means these misconceptions can be dealt with more quickly.

Teaching of Mathematics.

To provide adequate time for developing mathematics, maths is taught daily and discretely. However we also provide opportunities for mathematical skills to be taught across a range of subject where appropriate.

Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their Numeracy Skills, e.g. there should be regular, carefully planned opportunities for measuring in science and technology, for the consideration of properties of shape and geometric patterns in technology and art, and for the collection and presentation of data in history and geography. Teachers use a range of teaching strategies to engage the children in maths and ensure progress is made by all children within a class; no set formula is used.

A typical lesson would include:

- Both teaching input and pupil activities,
- A balance between whole class, guided grouped and independent work, (groups, pairs and individual work).

Sometimes the focus for the session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. The focus of the session may vary for different children depending on their learning needs.

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able.

Teachers endeavour to differentiate learning appropriately for high attaining, middle attaining and low attaining pupils - possibly with individual work for an SEN pupil at one end of the achievement spectrum, to individual work for a gifted pupil at the other. Differentiation may also be shown through the use of rich mathematical tasks. These tasks have a low threshold but a high ceiling. Differentiation when following the mastery approach to teaching mathematics may be through questioning and outcome.

In addition to the daily mathematics lesson, pupils will complete an activity to increase their fluency of mathematical facts or strategies to encourage communication of mathematical ideas. This will be achieved through the use of daily mental mathematical strategy practise.

Once a week the children undertake dedicated problem solving activity to enable them to reason mathematically.

Planning

The National Curriculum Programme of Study for mathematics describes in detail what pupils must learn in each year group. Combined with the Moor Park Junior School's Primary Calculation Policy, this ensures continuity and progression and high expectations for attainment in mathematics.

Assessment, Record Keeping and Monitoring

Staff at Moorpark use the results of ongoing formative assessment to help them make informed decisions about the progress of individual children, set targets and inform planning.

Formative Assessment

- ❖ Observations of individuals or small groups while they work
- ❖ Record by video or annotated work.
- ❖ Marking against success criteria and learning outcomes.
- ❖ Questioning and discussion with pupil/s about their work.
- ❖ Annotated pupil drawings and labelled diagrams, tables and charts.
- ❖ Concept cartoons/ mind mapping at the start and end of half termly topics.

Summative Assessment

- ❖ Children will be continually assessed throughout the year. This will be reported at 3 key assessment points. See our separate assessment policy.
- ❖ Children will also be assessed at the end of each teaching unit, to ascertain how their fluency, reasoning and problem solving skills have been developed within each area of mathematics.
- ❖ Statutory end of Key Stage 2 testing occurs in Year 6 through the use of SATs and/or teacher assessment in reading, writing, spelling and grammar and mathematics.

Monitoring and evaluation

The subject leaders and senior leadership team take responsibility for the monitoring of the maths curriculum and the standards achieved by the pupils. Monitoring, to inform action planning and key priorities, takes the form of:

- ❖ Lesson observations
- ❖ Scrutiny of work and planning
- ❖ Formal and informal discussions
- ❖ Moderation of core subjects and cross-curricular links
- ❖ Pupil conversations
- ❖ Pupil Progress Meetings.
- ❖ Staff and pupil audits.

Record keeping

- ❖ Records are kept of individual pupils who achieve key objectives
- ❖ There are occasions when it is not necessary to record mathematics in a permanent form, but there are also occasions when it is both quick and convenient to carry out written calculations. It is also important to record aspects of mathematical investigations. Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording.
- ❖ Children are encouraged to use mental strategies before resorting to a written algorithm.
- ❖ Recording work may involve children making rough jottings first followed by recording actual answers for the teacher's attention. All children are encouraged to work tidily and neatly when recording their actual answers but jottings may take any form and are important evidence for the teacher. For presentation in maths books see the Presentation and Handwriting policy.

To be reviewed: September 2020.

