



MATHEMATICS POLICY

MELLERS PRIMARY SCHOOL

January 2017

MATHEMATICS POLICY STATEMENT

WHY TEACH MATHEMATICS?

‘Pure mathematics is, in its way, the poetry of logical ideas’

- Albert Einstein

In essence, maths is beautiful and creative subject that provides opportunity to explore the world around us through pattern and relationships. The teaching of mathematics enables us to explain our understanding and make sense of the way it is presented through a range of abstract procedures and conventions.

At Mellers, we are passionate about the teaching of mathematics and aim for all of our pupils to become competent mathematicians. We want them to savour success whilst developing resilience; ask questions as well as answer them; experience moments of awe and wonder rather than fear.

AIMS

The mathematics teaching at Mellers Primary is aspirational as we aim equip all pupils with the skills required to not only be successful during their time at school but also within the wider world.

In line with the National Curriculum (revised 2104), we expect all pupils to:

- Become fluent in the fundamentals of mathematics
- Reason mathematically
- Solve increasingly sophisticated problems

We also expect that the majority of pupils’ progress through the curriculum at broadly the same rate.

PLANNING

We have developed a mastery approach to the curriculum and use this as a basis for planning. The key ideas of a mastery curriculum include:

- Coherence - small steps of coherent development are planned for within lessons.
- Representation and structure – mathematical concepts and problems are shown through the use of concrete, pictorial and abstract representations and attention is drawn to patterns and relationships.
- Variation – questions asked within a lesson are structured carefully to draw attention to the patterns and relationships
- Fluency – planning enables pupils to become fluent by making sense of mathematical concepts rather than simply learning facts
- Mathematical thinking – lessons are planned with opportunities for pupils to reason, solve problems and work collaboratively

Planning is supported by the use of the ‘Maths No Problem’ textbook which uses an approach first developed in Singapore. The scheme addresses the aims of the mastery curriculum and provides lessons that have been carefully crafted as a result of mathematical research.

The mastery approach is based on pupils being taught longer units of work over the course of the year to ensure that they have the time to cover the different areas of mathematics in more depth.

- Our long term planning sets out the length of each unit of work and where it will be taught within a year.
- The medium term planning ensures that all objectives have been covered from the curriculum and allows us to use assessment data to ensure the needs of the pupils are being met.
- Short term planning is carried out weekly and shows in greater depth the concepts that will be taught and practised over the course of a lesson. It should be clear how pupils are challenged and supported within the lesson and how progress will be assessed.

Teachers are expected to reflect upon lessons and adapt planning when appropriate. Planning is monitored by the maths leader annually.

CROSS-CURRICULAR LINKS

The teaching of mathematics is more effective when developed in a holistic way. There are clear links to how maths can be developed in other subjects for example science and design technology. We also encourage that the concept of time is on a daily basis with adults drawing pupils' attention to time at varying intervals during the day. Pupils across all year groups should be given opportunity to develop skills of working collaboratively to solve problems and to ask questions in all areas of learning.

TEACHING METHODS AND APPROACHES

The teaching of mathematics must contain the following:

- An anchor task - used to present a problem, usually in a real life context, at the start of a lesson. This engages the pupils, facilitates discussion and provides a useful assessment opportunity for teachers.
- Let's learn – used to focus the pupils attention on the key concepts and strategies that will be developed in the lesson.
- Guided practice – questions to work collaboratively on to apply the skills and strategies.
- Challenge – an opportunity for pupils that's have grasped the concept quickly to deepen their understanding
- Support – identification of how struggling learners will be support to meet the expectations of the lesson
- Journaling – a recording activity that encourages pupils to reflect on what they've learnt in the lesson.
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THE SCHOOL ENVIRONMENT

We strive to ensure that our school environment reflects our passion for good quality mathematics provision. There are opportunities around school that celebrate the progress of pupils throughout the school. Every class should have a high quality maths display board, which celebrates pupils' achievements in maths and shows the expectation of work from that class. In addition, the pupils should be able to access high quality resources to support them in achieving the objectives for their age group.

ASSESSMENT

At Mellers we are continually assessing our pupils and recording their progress. We see assessment as an integral part of the teaching process and endeavour to make our assessment purposeful, allowing us to match the correct level of work to the needs of the pupils, thus benefiting the pupils and ensuring progress. Assessment is carried out on three levels.

- Short-term assessments are an informal part of every lesson and are closely matched to the teaching objectives. These are recorded by a marking code on the day's learning objective.
 - √ Objective fully met
 - ↑ Objective partially met, additional work needed
 - ← Objective not met
- Pupils also have the opportunity to self-assess their learning at the end of every lesson using a traffic light system
 - - Green I understand the work and feel confident so no help needed
 - Orange I understand parts of the work but need a little bit more help
 - Red I don't understand the work. I feel confused and I need more help
- Medium term assessments are carried out at the end of every unit of work using 'Learning Ladders'. Pupils are assessed on whether they have achieved the objectives for the unit of work. In order to fully complete the objective, there must be evidence of them demonstrating their understanding on three occasions. This equates to three ticks on their individual ladder. Class teachers are expected to report on pupils' progress in maths each half term.
- Long-term assessments are carried out towards the end of the school year when pupils' attainment is measured against school and national targets in the Summer Term. In Years Two and Six, this assessment is in the form of a Standard Attainment Test (SAT). In other year groups, the class teacher assesses each pupil against the curriculum.

All parents receive an annual written report on which there is a summary of their child's effort and progress in mathematics over the year. Parents will also be invited to hold a structured conversation with their child's class teacher to discuss their progress in maths.

RESOURCES

We value the use of high quality resources in maths and carefully choose manipulatives that enable all pupils to develop a conceptual understanding. We believe that the 'Maths No Problem' scheme matches our ethos and resource our classes according to their philosophy.

Resources for the delivery of the maths curriculum are stored both centrally and in classrooms. Everyday basic equipment is kept in classrooms. Additional equipment and topic-specific items are stored centrally. There are central stores in the corridor areas.

ROLE OF TECHNOLOGY

Technology is used in a variety of ways to support teaching and children's` learning. This will involve the use of computers, interactive white boards, calculators and audio visual aids in a daily maths lesson when it is the most efficient way of aiding learning.

EQUAL OPPORTUNITIES

As a staff we endeavour to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account cultural background, gender and language differences, both in our teaching attitudes and in the published materials we use with our pupils.

CHILDREN WITH SPECIAL EDUCATIONAL NEEDS

Wherever possible we aim to fully include SEND pupils in all mathematics lesson so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods.

Where necessary teachers will, in consultation with the SENCO, will make additional provision for a child. If a child's needs are particularly severe they will work on an individualised programme written in consultation with the appropriate staff. When planning, teachers will try to address the child's needs through simplified or modified tasks or the use of support staff.

CHILDREN WITH ADDITIONAL LANGUAGE NEEDS

We support pupils with additional languages needs in a variety of ways. All lessons contain opportunities to work in a visual way with images in addition to words. The teachers will also model concepts using a range of concrete apparatus and pupils will then also be able to use resources to support their learning. We put a lot of emphasis on the development of new vocabulary for all of our pupils and ensure that there is plenty of opportunity to rehearse and use new words. Some pupils may also benefit from one to one support from a specialist teacher.

GIFTED AND TALENTED

All pupils are encouraged to achieve their highest potential. Where possible differentiated work will be set to challenge the pupils and extend their learning.

HOMEWORK

Children are given mathematics homework at least once a week. The amount of homework set is about 10 minutes in KS 1 and about 15-30 minutes in KS 2. Not all homework is written work, which needs marking. Homework develops and extends techniques and strategies undertaken in school lessons and is a valued activity.

Compiled by: L Dermody

Approved by Governors:

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