



Mathematics Policy



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Introduction

"Everything that is taught earlier paves the way for everything that comes later; and everything that comes later is made accessible to all children by what has been taught earlier."

Richard Dunne

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

Aims and objectives

Our main aim at Golden Flatts Primary School is to raise attainment and enjoyment in Mathematics across the school. To support us in achieving this aim, we use the '*Maths Makes Sense*' learning system in order to fulfil the requirements of the National Curriculum (2014).

Our aims in teaching Mathematics using this learning system are to:

- Ensure deep conceptual and procedural understanding through a carefully planned and coordinated learning system of concrete objects, exaggerated actions and special vocabulary – developing fluency, reasoning and problem-solving skills.
- Transform children's understanding and enjoyment, encouraging all children to excel and become excited about maths. As a result of these, we therefore aim that all children will:
- Enjoy the subject and study it with a sense of confidence and achievement.
- Achieve a high standard in Mathematics and gain a secure foundation of knowledge, skills and concept.
- Use the calculation skills consistently, with confidence and independence.
- Use and apply these skills with confidence and understanding in real life problems and within mathematics itself.
- Develop persistence through sustained work over a period of time.
- Develop an ability to think logically and to use mathematical language with confidence and understanding.
- Have an appreciation of mathematical pattern and relationships.
- Have a positive attitude towards mathematics as an interesting and creative subject.
- Gain experience of working independently, investigating their own ideas and developing their own mental and written methods.

Maths Makes Sense Curriculum

In Maths Make Sense, the curriculum is split into five key areas, with each being taught on a different day of the week. These are:

- Arithmetic 1
- Geometry
- Data and Measure
- Arithmetic 2
- Reasoning

The children sit in carefully planned pairs and there is a strong emphasis on partner teaching and partner working. The expectation for teachers is that they have a sound rationale for their organisation of the maths classroom and that it fits in with the Maths Makes Sense principles.

In each maths classroom, it is expected that there is a maths working wall that is current and useful to the learning of the children. In line with Maths Makes Sense advice, the working wall will contain at least some of the following:

- WAGOLL – ‘What a good one looks like’
- Extension tasks
- What I will see
- What I will hear

In addition to these learning displays in the classrooms, the maths leaders need to ensure that there is a range of high quality, published mathematical work in the corridor and entrance areas around the school. This is important as it shows that we value mathematics as a subject.

Teaching and learning

We teach Maths Makes Sense with a teaching cycle of instruction and assessment to help every child succeed and to help make sure no child gets left behind. The cycle consists of Direct Instruction, Guided Practice and Partner Teaching, with partner work embedded throughout.

During Direct Instruction, our teachers use big teaching to teach a new concept or idea to the class.

During Guided Practice, the children practise what they have been taught under careful guidance from their teacher.

Partner Teaching is a proven technique that works on the premise that the best way to understand if you really understand something is to try and explain it to somebody else. Children teach each other what they have learned and, in this way, they consolidate and deepen their own understanding.

Assessment is at the heart of this cycle; our teachers carefully monitor and assist children where necessary. Each teacher is expected to assess and indicate the level of support each child either ‘did need’ or ‘would have needed’.

As part of the Maths Makes Sense programme, there is a bank of lesson plans and resources that the teachers use to inform their teaching. Teachers are strongly encouraged to use these plans as a point of reference and need to adapt them and the resources to suit the needs of the children in the maths class. As such, teachers are expected to record the adaptations clearly on the Maths Makes Sense plan and to keep an organised record of these plans.

The National Curriculum (2014) has three key aims for teaching and learning

- Fluency,
- Reasoning
- Problem solving.

Our maths lessons meet these in the following ways:

Fluency: Maths Makes Sense, as a consistent learning system, ensures fluency through the ‘Daily Practice’ of maths facts and the rigour of precision teaching across all aspects of mathematics. Our teachers are encouraged to adapt the Daily Practice sections of the plans to support the children achieve conceptual understanding and fluency.

Reasoning: In addition to the strand that is specifically devoted to 'Reasoning', our teachers are expected to identify ways they can enhance the reasoning element to all lessons and to indicate as such on the plans. Big teaching, discussion time, plenaries, activities and feedback are all parts of the lesson that can be used to further develop pupils' reasoning skills. Teachers use a range of reasoning strategies, including 'What If?' and 'What If Not?' (WIFN).

Problem Solving: Maths Makes Sense is unique amongst Primary Maths programmes in that it has a consistent approach to supporting teachers to assist children in becoming fluent, confident and competent problem solvers. In effect, children use and apply what they know and they will need to draw on their reasoning skills to be able to do this. Children will record their work in appropriate ways for a variety of purposes, with a high emphasis on the quality of presentation with clear guidelines for all teachers to follow

Mathematics curriculum planning

Mathematics is a core subject in the National Curriculum, and we use the National Curriculum as the basis for implementing the statutory requirements of the programme of study for mathematics. '*Maths Makes Sense*' forms our scheme of work.

It is the class teacher who follows the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives and expected outcomes for each lesson or unit of study, and give details of how the lessons are to be taught. Each teacher is responsible for evaluating the maths lessons. The class teacher keeps these individual plans, and the class teacher and subject leader often discuss them on an informal basis.

We plan the activities in mathematics so that they build on the children's prior learning. While we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through the school.

Inclusion

Children with SEN and /or learning difficulties or disabilities

Where possible, through the use of appropriate support and differentiation, children with SEN will be working towards the same learning objectives as their peers. From time to time, those working well below the level of the whole class may be working towards related objectives chosen from the relevant progression MMS programme from an earlier year. They may also receive specific support from the teaching assistant during Maths lessons. Those children with special needs may have specific targets relating to mathematics, where appropriate. They may be given additional support or extra teaching in small groups to help them achieve these targets. The lower attaining pupils will have access to all practical resources from the MMS toolkit to help develop mathematical thinking and understanding.

Children who are gifted and talented

Children who are working well above the overall level of the class will be given a range of experiences designed to broaden or deepen their learning while working on the same learning objectives as their peers. This may be done by providing more demanding questions and investigations, often with a more open-ended approach. Where a child is exceeding the expected objectives for the end of the year group they are in, they will be given activities that will extend their understanding of the objective that the class are working on rather than being moved onto a different objective.

Monitoring and review

The quality of teaching and learning in mathematics is monitored and evaluated as part of the school's agreed cycle of monitoring. This policy will be reviewed annually

Review Date: November 2015

Next Review Date: December 2016

Reviewed by: Emma Bestford

This policy has been impact assessed with regards to disability, gender and race December 2015 – Reviewer S. Sharpe