



## Maths Policy

# **GOLDEN HILL SCHOOL MATHEMATICS POLICY**

## **Introduction**

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics' curriculum.

The National Curriculum 2014 and EYFS documents for mathematics describe what must be taught in each key stage.

This policy provides information and guidance for staff, members committee and other interested persons.

## **Intent**

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern 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.

The maths curriculum focuses on developing the skills and abilities of all our pupils. Staff are fully committed to ensuring the needs of our pupils are met both academically and in regard to their social, emotional and behavioural difficulties.

School staff aim to motivate and challenge pupils to want to achieve their best and to take learning risks without fear of failure. Our maths curriculum develops the skills of enquiry, creative thinking, reasoning, problem solving, information processing and evaluation across all aspects.

We seek to make our maths curriculum meaningful and relevant to all our pupils. We effectively use our local environment and the expertise within the school and the wider community to present interactive and engaging teaching and learning. Our aspiration and commitment is for our pupils to become independent learners, to learn through practical first hand experiences, creative opportunities, and engagement with school visitors. The maths curriculum is exciting and fun but systematically structured in order to develop the key skills our pupils need in order to achieve success.

At Golden Hill Primary School we aim to do the following (these work alongside our curriculum policy principles):

- develop a positive attitude to mathematics as an interesting and attractive subject in which all children gain some success and pleasure;

- have a sufficient understanding of and unconscious competence in prerequisite mathematical knowledge.
- develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
- encourage the effective use of mathematics as a tool in a wide range of activities within school and, subsequently, adult life;
- develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary;
- develop an appreciation of relationships within mathematics;
- develop ability to think clearly and logically with independence of thought and flexibility of mind;
- develop an appreciation of creative aspects of mathematics and awareness of its aesthetic appeal;
- develop mathematical skills and knowledge and quick recall of basic facts

### 12-week referrals

Due to the nature of our pupils, we find that the majority of children who attend Golden Hill on a 12-week referral are significantly behind age related expectations. It is therefore important that those children are provided with the best learning opportunities possible and leave Golden Hill having had an effective and positive learning experience. This will be done through the Red Rose Maths Mastery scheme of work.

### Implementation

#### Teaching Mathematics to Children with Special Needs

At Golden Hill School we aim to provide a broad and balanced education to all pupils. Many of our children are working below age-related expectations and it is our aim to improve their understanding and close the gap in their learning. Information from the mainstream school, and effective teacher assessment, ensure that the children access Maths at the right level for them. This may include working at a Year group which is lower than their actual year group.

We also recognise, and aim to make provision for, pupils who have a particular ability in mathematics and ensure that these children have access to deeper learning.

#### Teaching and learning styles

Golden Hill uses a variety of teaching styles to cater for the different learning styles of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class teaching as well as direct-group teaching. During these lessons we encourage children to focus on the idea that they can all achieve depth in their learning which can be accomplished by using key principles including representation and structure, coherence,

mathematical thinking, variation and fluency. They have the opportunity to use a wide range of resources from their kit boxes such as number lines, number squares, digit cards and small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning where necessary.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child through varied questioning effective pedagogies for modelling, concrete-pictorial-abstract approaches and effective use of manipulatives. We achieve this through a range of strategies – in some lessons through differentiated group work, and in other lessons by organising the children to work in pairs on open-ended problems or games.

Our teaching assistants provide appropriate support to individuals or to groups of pupils. Teaching assistants are viewed as an important ‘asset’ to our school and, as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding are constantly updated through involvement in school-based and LA led Inset.

### **Mathematics Curriculum Planning**

Mathematics is a core subject in the National Curriculum, and we use the Mathematics National Curriculum 2014 and the EYFS guidelines as the basis for implementing the statutory requirements of the programme of study for mathematics.

We use the sequence of learning provided by LANCS to support our planning in Mathematics. All staff in KS1 and KS2 use the six half-termly blocks of six weeks with focus areas of mathematics for each week. The units are designed to be cohesive and allow for application of learning and skills across the mathematics curriculum. We do not rely solely on a particular scheme of work due to the transient nature of our children. However, we have implemented Red Rose Maths Mastery to support staff with planning but also to address gaps in the children’s learning. This is currently being used in Y1, 2 and 3 and 4 and will be implemented to other year groups as the scheme is rolled out and if appropriate. Children complete activities from the appropriate year group to meet their needs. In some cases, the planning is slowed down so that the children have time to fully understand what is being taught before moving on to the next objective.

The head teacher and mathematics subject leader are responsible for monitoring the mathematics planning within our school.

### **Assessment**

Assessment has two main purposes:

- assessment of learning (also known as summative assessment);
- assessment for learning (also known as formative assessment).

#### **Assessment of learning (AoL) – summative assessment**

Assessment of learning is any assessment that summarises where learners are at a given point in time – it provides a snapshot of what has been learned. At Golden Hill School AoL is

used appropriately, e.g. to provide a Teacher Assessment grade at the end of KS1, to provide an assessment grade at the end of each term.

### **Assessment for learning (AfL) – formative assessment**

“Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to get to and how best to get there.”

Assessment Reform Group, 2002

At Golden Hill School we recognise that AfL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AfL depends crucially on actually using the information gained.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during ‘day-to-day’ teaching. These ‘immediate’ responses are mainly verbal and are not normally recorded;
- Using knowledge of pupils drawn from ongoing pupil tracking records and the progression document to inform ‘prior learning’ at the beginning of each unit of work to guide our planning and teaching;
- Adjusting planning and teaching within units in response to pupils’ performance;
- Use of ongoing teacher assessment and KLIP’s in order to identify gaps in attainment on a weekly basis and at the end of each full term using this information to grade a child’s attainment using the entering, developing and secure judgements.

### **Recording of work**

Those year groups using Red Rose maths record their work in a variety of ways. In EYFS and KS1 there is a bigger emphasis on using Seesaw to record their work due to the nature of the children and them not having the capacity to be able to formally record their work. In KS2 they use maths books to record as well as Seesaw where necessary.

### **The Foundation Stage**

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the Revised Statutory Framework for the EYFS (2017) and the Development Matters in the EYFS (2012). We give all the children ample opportunity to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about mathematics.

### **ICT**

The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we consider the following points:

- ICT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics;

- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it;

## **Resources**

There is a range of resources to support the teaching of mathematics across the school. Staff are encouraged to use practical and visual models to support children's learning in mathematics. All classrooms have a wide range of appropriate practical apparatus. A range of audio-visual aids are also available and a range of software is available to support mathematics work. All staff have a resource area in their classroom which is made accessible to the children to use when required.

## **Problem Solving and Reasoning**

Good problem-solving activities provide an entry point that allows all students to be working on the same problem. The open-ended nature of problem solving allows high achieving students to extend the ideas involved to challenge their greater knowledge and understanding. It also allows our less achieving children time to take a chance and explore maths in a different context. Problem solving develops mathematical power and enables them to explore mathematics within a problem context rather than an abstract one. Teachers must implement problem solving and reasoning into their maths planning, lessons and working wall.

## **Working Walls**

Staff are advised to have a maths-working wall that the children use on a weekly basis. An effective working wall for maths is one that can be referenced by both the teacher and pupils both during and outside of maths lessons. Teachers should be able to use it as a reference whilst teaching and pupils should find it useful when working on maths activities. The working wall should be purposeful, helpful, relevant and above all useful. The working wall should have problem solving and reasoning questions, logic and higher order maths questions.

## **Times Tables Rockstars (TTR)**

We have recognised that children at Golden Hill are struggling to have a secure grasp in some areas of mathematics due to their lack of understanding in times tables. We have identified that making progress in maths with our pupils is often hampered by poor recall of the times tables and having low maths confidence. Times Tables Rock Stars was implemented at Golden Hill to try to support children in both of these areas. Children initially begin TTR with a baseline assessment, which then leads onto regular practice on a carefully sequenced programme of work, ending with a similar assessment to the baseline for comparison.

## **Responses to Children's Work**

We recognise the importance of responding to children's work, whether orally or in writing. We seek to encourage children by acknowledging positive achievements. This could include praise for use of a viable method even if the results were incorrect. Children are frequently provided with next steps to support and enhance their understanding and make links between previous and future learning. Children are given opportunities and are actively encouraged to explain their work to others. They are encouraged to value and respect the work of others, (see marking policy).

Children's work is also recognised by a weekly certificate in the daily meeting for those children who staff think have worked particularly well that week, improved or overcome a particularly difficult area of maths. The child's work is then celebrated by displaying it on our 'Master of Maths' display board.

## **Monitoring and Review**

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the head teacher and link committee member supported by the subject leader.

The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

## **Impact**

- Within lessons, children are engaged in their learning and are keen to talk about what they have learnt. Progress in books is evident. Pupils are able to recall their current and prior learning and are positive about maths in general.
- Whole school assessments are carried out termly and for the majority of pupils, there is clear progress in mathematics. As these assessments are termly, the school population changes frequently so it is important to measure small steps via the IEP or end of unit assessments.
- Our children demonstrate confidence, independence and resilience, and have a real thirst for learning in mathematics. They are able to use mathematical vocabulary that supports them in their learning.
- Our children are able to form meaningful relationships based upon mutual respect and trust through participating and actively involving themselves in investigations.