



# Maths Policy

## **Introduction:**

*Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.*

(National Curriculum 2014)

## **Beliefs:**

At Gorse Hall Primary and Nursery School, we believe that, through the study of mathematics, children make sense of their world and enrich their understanding of it. This policy sets out the framework in which the mathematics curriculum will be taught. Through this curriculum, children will become fluent in the fundamentals of mathematics by:

- Developing conceptual understanding.
- Recalling and applying knowledge accurately.
- Reasoning mathematically- through identifying patterns and relationships between numbers and through articulating mathematical thinking.
- Solving problems by applying mathematical skills to a variety of routine and non-routine problems and through the breakdown of mathematical problems, into a series of simpler steps, with an emphasis of seeking solutions.



## **We aim to:**

At Gorse Hall school we aim to...

- Develop a positive mind-set towards mathematics, with a self-belief of 'if I work hard at maths, I can achieve.' We aim for all children to feel a sense of enjoyment and achievement in maths.
- Raise confidence in order for children to overcome difficulties in maths and become masters of mathematics. For children to explore mathematics through understanding the metacognition of how they learn best and to take ownership to become actively involved in maximising their own learning.

Teaching and learning reflects a 'mastery maths' approach and structures are carefully planned in light of engaging and inclusive teaching and learning. Teaching and learning also reflects the CPA (concrete, pictorial and abstract) approach to learning. We aim for our children to thrive in maths, learning in a way in which is meaningful in developing contextual understanding.

- Encourage children to develop fluency skills and the fluid mental recall of maths through the daily practise of the 'Top 10.'
- Enhance children's reasoning skills through observing and discussing patterns and relationships between numbers. This will take form through the use of number partners, whole class discussions and the use of stem sentences to develop mathematical thinking. Children are encouraged to understand and use mathematical language to explain mathematical thinking and contextual understanding. We aim for our children to develop cognitively, socially and linguistically upon their mathematical journey.
- Provide opportunities for children to achieve and maximise learning, through carefully planned interventions with a view to support, develop and challenge learning.
  - Ensure that children are progressing well in mathematics upon their learning journey at Gorse Hall School. That learning is continuously assessed and assessment is used to inform future planning, teaching, learning and progress.
- Ensure all children are making progress towards achieving and this is reflective year upon year. That children are prepared with the mathematical, skills, knowledge and



pedagogy and are able to demonstrate their understanding of maths at the end of each key stage, and that children are 'Secondary ready' on leaving Year 6. Mathematics is integral to all aspects of life and with this in mind we endeavour to ensure that all children develop a positive and enthusiastic mind set towards mathematics, which will stay with our children once they leave Gorse Hall and upon their next steps, upon their educational journey.

### **Entitlement:**

The Department for Education (DFE) 'National Programme of Study' provides statutory guidance of the curriculum entitlement in England. At Gorse Hall school we adapt this programme of study in which is taught via the 'White Rose Scheme of learning.'

### **Planning:**

- At Gorse Hall, planning and lesson sequence is set in line with the 'White Rose.' Teachers use professional judgments to adapt and amend teaching and learning in accordance to supporting and enhancing pupils needs.
- Planning ensures opportunity for support, challenge and consolidation of learning.
- Planning highlights the learning objective, key questions, paired, guided or independent work and opportunities to enhance reasoning and problem solving skills.
- Planning provides opportunities for children to learning in an engaging way, with varied structures to enhance teaching and learning.
- Planning takes into consideration different learning styles and allows learners to learn through a concrete, pictorial and abstract approach to understanding mathematics.

### **Books:**

All maths books will follow the same structure from Year 1 - Year 6 in that:

- Demonstrate a range of concrete, pictorial, and abstract approaches to mathematics.
- Show a range of approaches to teaching and learning, such as practical work, written work, reasoning and problem solving.
- Demonstrate problem solving in which links to understanding math's in real life contexts.
- Work set out in math's books will be set out in pencil.
- Corrections and consolidation of learning will be presented in green pen.



- The short date for each piece of work will be evident, along with along with the learning intention.
- All marking will be set out in line with our school marking policy.

### **Marking:**

Marking will be set out in line with the schools marking policy.

- Marking assessed by the teacher will be presented in red pen.
- Self-assessed marking or peer marking will be presented in green pen.
- Corrections or consolidation of learning will be presented in green pen.
- There will be evidence of pupil's reflection of learning via comments or the RAG(red, amber, green) traffic light system.
- A red tick will indicate the correct answer.
- A c in a circle will indicate that the question/calculation needs correcting.
- 'P, I, G,' will indicate whether the work demonstrated was P (paired work) I (independent work) or G (guided work).
- Books will state verbal feedback given.
- A challenge a child completes will be under the title 'challenge.'

Books will reflect children being involved in the learning journey of reflecting upon, consolidating/challenging their own learning. Children will respond to marking and will comment on their own learning. They will consolidate learning by completing any corrections and set goals by adding their own comment. The traffic light colour/face system will also be used as a tool for children reflecting upon their learning.

### **Cross-Curricular Links:**

Mathematics is mainly taught as a separate subject, but at Gorse Hall School every effort is made to link mathematics with other areas of the curriculum. We try and identify the mathematical possibilities across the curriculum at the planning stage. We also draw children's attention to the links between maths, other curricular work and the real world so children can apply their mathematical knowledge in a variety of contexts.



### **Teaching Methods and Approaches:**

At Gorse Hall we have adapted the 'mastery maths' approach to teaching and learning. Both teaching and learning is demonstrated through a concrete, pictorial and abstract approach to learning. Lessons are carefully planned and structured for children to learn in a way in which is purposeful and meaningful to them. We recognise the significance of children being actively involved in their own learning journey and the importance of developing a positive 'mind-set' towards learning.

Children have lots of opportunities to engage in learning through a variety of structures. In line with the 'mastery maths' approach to teaching and learning, we encourage 'number partners' in maths. We also ensure that children are provided with a range of learning structures such as guided or independent.. At Gorse Hall we ensure that teaching and learning is engaging. We encourage children to participate in verbalising and reasoning their understanding and to be actively involved in problem solving. At Gorse Hall we link learning to everyday concepts whenever possible to make learning more meaningful and current to everyday life.

- Pupils engage in: the development of mental strategies, written methods, practical work, investigational work, problem- solving, mathematical discussion and consolidation of basic skills and routines.
- Children engage daily with the 'Top 10' fluency facts. This is set per year group in line with curriculum expectations. It allows children to practise mathematical skills and mental recall. This can be found on our school website.
- Each half term children reflect upon their learning via the maths knowledge mats. At this point they are encouraged to discuss what they know or have previously learnt and are encouraged to set personalised, future goals for progressing forward in maths. The maths knowledge maths can also be found on our school website.

We endeavour to set work that is challenging, motivating and encourages the pupils to talk about their learning.

### **Assessment & Record-Keeping:**

At Gorse Hall 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 tend not to be recorded because they are for the teacher's immediate attention and action.
- Formative assessment in which can take place in the form of observations, verbal feedback, teacher/pupil assessment, questioning, quizzes, notes, discussions etc.
- Summative assessment- These take place half-termly. The purpose of these assessments is to review and record the progress the pupils have made in relation to Age Related Expectations (ARE). Children's progress towards ARE is recorded on class records and School Pupil Tracker Online.
- Long-term assessments are carried out towards the end of the school year when pupils' attainment is measured against school and national targets. This is done by drawing on class records, Age Related Expectations and any supplementary notes that have been made. In line with the school's assessment procedures the assessment of maths will be as follows:
  - Ongoing formative assessment.
  - Verbal assessment.
  - Tests to inform teacher assessment during half- termly assessment weeks.
  - Half termly assessment towards the maths knowledge mats.
  - Weekly times tables test- years 1-6.
  - Weekly mental maths tests-year 2-6.
  - End of key stage tests-year 2 and year 6.

We believe that our children should fully immerse and engage in their own assessment for learning. Children are encouraged to reflect upon their learning, correct and develop their learning and set targets (next steps) in relation to their learning. Children are also encouraged to understand the metacognition and awareness of how they learn best in maths. We encourage children to be aware of different learning styles and to adapt a concrete, pictorial, or abstract approach to working. We provide a classroom culture in which nurtures the importance of children being active learners and learning in a way in which they believe works best for them, in order to consolidate conceptual understanding and to challenge and maximise learning.



### **Reporting:**

All parents receive a mid-year report at each parents evening which give a summary of their child's progress so far and clear next steps to work towards to further enhance progress. Parents also receive an annual written report on which there is a summary of their child's achievement and progress in mathematics over the year. At the end of Key Stage 1 and Key Stage 2 each pupil's achievement against national standards is included as part of their annual written report. We communicate with parents regarding learning objectives for each half term through...

- Maths knowledge maths.
- Curriculum matters.
- Top 10 fluency facts.

These can all be found on our school website.

### **Resources:**

Resources for the delivery of the maths curriculum are stored both centrally and in classrooms.

Each classroom is resourced with a maths area in which has mathematical resources to support the everyday teaching and learning of maths with additional maths challenges to enhance learning. This approach co-insights with our 'mastery maths/CPA' approach to teaching and learning.

Gorse Hall uses 'The White Rose' scheme to facilitate learning but recognises the need for the teaching of maths to be 'scheme assisted not scheme driven.' Materials are constantly updated, as new and relevant items become available. The maths team audits resources in consultation with the staff. At Gorse Hall we use...

- A range of concrete materials to aid visualisation and conceptual understanding (available in classrooms).
- Number lines/100 square/times tables squares etc (to further aid abstract approaches to maths and patterns and relationships).
- Times Table Rock Stars
- The White Rose
- Classroom Secrets
- Top 10
- Maths knowledge mats



### **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 consider cultural background, gender and Special Needs, both in our teaching attitudes and in the published materials we use with our pupils. We aim for no ceiling to be put upon children's learning. For differentiation to take place in the approach of 'how' children learn not 'what children learn.'

### **Children with Special Educational Needs**

Wherever possible we aim to fully include SEND pupils in the daily 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, draw up a programme of intervention support. 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. Interventions are used within the school to support children in their mathematics learning.

### **Review**

This policy will be reviewed and amended annually.