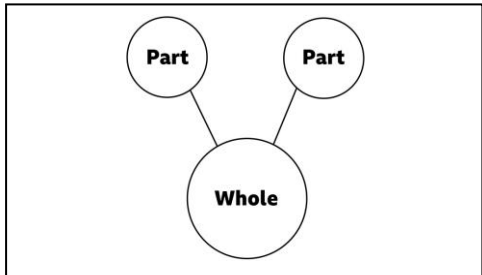
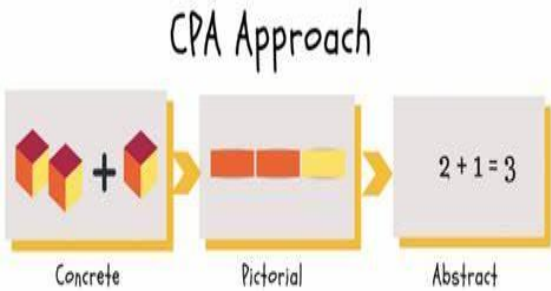
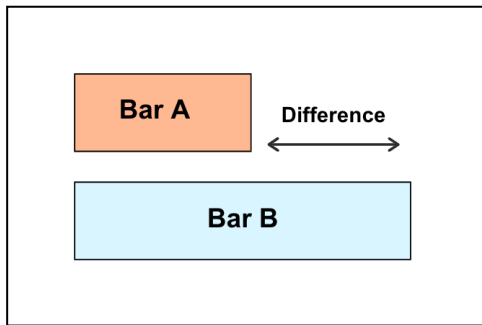




# Gorse Hall Primary and Nursery School

TRIANGLE CIRCLE SQUARE MATH GAME

$\triangle + \triangle + \triangle = 30$   
 $\triangle + \circ + \circ = 18$   
 $\circ - \square = 2$   
 $\triangle + \circ + \square = ?$



$3 \times 4 = 12$

$4 + 4 + 4 = 12$   
 $3 \times 4 = 12$

### Problem Solving Strategies

Make a table	Make a list
Draw a picture/diagram	Act it out
Make a model	Identify a pattern
Write a number sentence	Solve a simpler, related problem
Guess and Check	Work backwards



## 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)

### **Entitlement:**

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

### **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 logical, mathematical thinking.
- Solving problems by applying mathematical skills to a variety of problems.
- Recognising rich connections in relation to the fundamental use of using and applying mathematics to real life context.
- Acquiring the knowledge and skills within mathematics to remain current with understanding mathematics in the developing and changing world.

**We aim to:**

- Develop a school culture of children acquiring a positive mind-set towards mathematics. For '**ALL**' children to have a self-fulfilling attitude and belief of 'if I work hard at mathematics, I can achieve well at it.'
- For '**ALL**' children to feel a sense of enjoyment and achievement in mathematics.
- Raise children's confidence and self-esteem in mathematics and for children to become actively involved in becoming masters of their own journey of mathematics.
- Ensure children are encouraged, supported, guided and challenged throughout their mathematical journey. For all children to feel a sense of achievement and for outcomes to be maximised in line with individual potential.
- Develop an ability to be apply maths to real life situations, other areas of the curriculum and keep up to date with the use of mathematics in the changing world.
- Ensure children are at 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 healthy and enthusiastic attitude towards mathematics that will stay with them.



### 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 provides opportunities for children to learning in a meaningful and 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.
- Planning indicates a must, should and could success criteria to enhance pupils progress and outcomes. This provides opportunity to maximise outcomes in mathematics.

Planning for mathematics is undertaken at three levels:

Long term planning - Taken from the National Curriculum (2014) Number & place value, fractions, measures, data, algebra, geometry (shape) etc. To be mapped out on yearly overview grid following the Long-term planning structure suggested in The White Rose Maths scheme.

Medium term planning - Ready to progress criteria DFE 2020 is used and tracking grids updated termly. Teachers star mark objectives covered from the programme of study from the National Curriculum (2014) for each year group on Arbor (school tracking system).

Short term planning - The White Rose Maths lesson plans to be printed and annotated, a weekly planning overview will ensure that there is evidence of: • clear learning objectives in the form of can I statements, • use of adaptive teaching strategies to



support and scaffold • independent / paired /group work • assessments / next steps - annotations.

### **Teaching and Learning:**

Mathematics at Gorse Hal Primary School reflects a 'mastery maths' approach to teaching and learning. Structures are carefully planned to ensure high quality lessons are planned and delivered, incorporating a range of teaching and learning in which is engaging and inclusive to all learners. Mathematic lessons combine the CPA (concrete, pictorial and abstract) approach to learning, alongside embedding fluency, critical thinking and reasoning skills. We aim for all of our children to enjoy and thrive in mathematics and effective pedagogical practice, oracy skills and metacognition are fundamental elements of this process.

### **Expectations for teaching and Learning:**

At Gorse Hall Primary School there is a blue print for teaching and learning and a blue print for classrooms in which states the non-negotiables for the teaching and learning of mathematics across school. These can be found on our school website.

### **We aim to:**

- Nurture a culture in which allows all children to develop a sense of enjoyment and achievement in mathematics lessons. A culture in which reflects an inclusive approach to learning via meeting the holistic needs of all children.
- We endeavour to set work that is challenging, motivating and encourages the pupils to engage in mathematics.
- 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.



- We aim to develop and progress children's fluency skills and mental recall of fluency facts. These are carefully and progressively planned across year groups. They are taught discretely in lessons and revisited as weekly homework. Children also develop fluency via the daily practise of 'The Tough Ten.' All of which can be found on our school website.
- Enhance children's reasoning skills through observing and discussing patterns and relationships between numbers and applying mathematical thinking to problem solving. This will take form through the use of number partners, whole class discussions and applying the concrete, pictorial and abstract approach to mathematics.
- Ensure that children are aware of the different metacognition in which can support the understanding of mathematics. Children are encouraged to be actively involved in their learning journey and are aware of the different approaches to learning in mathematics. Children are encouraged to apply a concrete, pictorial and abstract approach to learning. Lessons are specifically planned and resourced to allow all children to make progress and to maximise outcomes (taking into consideration varied approaches to learning).
- Pupils engage in: the development of mental strategies, written methods, practical work, investigational work, problem- solving, mathematical discussion and consolidation of structured skills and routines.
- Lessons are structured with a 'must, should and could' success criteria to enhance pupils progress.
- 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 during their learning journey at Gorse Hall School. That learning is continuously assessed and assessment is used to inform the continuous cycle of planning, teaching, learning to enable further progress.
- Opportunities are provided for children to revisit and reflect upon their learning via the mathematics knowledge mats. Children are encouraged to discuss current and prior learning and this is applied to the setting of personalised, future goals for progressing forward in mathematics. The mathematics knowledge mats can also be found on our school website.
- Ensure all children are making progress towards achieving and this is reflective year upon year. That children are prepared with the mathematical knowledge and skills and are able to demonstrate their understanding of maths at the end of each key stage.



- That children are 'Secondary ready' upon 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.

### **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.
- Knowledge mats to be in the front of books.
- 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.

- **Marking:**

Marking will be set out in line with the school's feedback/ marking policy.

- Marking assessed by the teacher will be presented in red pen and in line with the WALT.
- Self-assessed marking or peer marking will be presented in green pen and making where a calculator has been used to check answers.
- 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.
- Marking will recognise and praise effort as well as achievement.

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 be very much involved in recognising strengths in mathematics and setting next steps for further achievement (verbally). Children will be given opportunities to consolidate learning by completing any corrections and 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.

#### **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 ensure that carefully next steps are planned for, to meet 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 termly assessment weeks.
  - 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 parent 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 Mats.
- Curriculum Matters.
- Top 10 fluency facts.
- TT Rockstar's
- Fluency Homework
- Seesaw messaging App
- Homework is adapted in line of further developing fluency. Year group objectives are set across school to enable children to enhance their fluency skills year upon year. These can all be found on our school website.

#### **Resources:**

Gorse Hall Primary School has a blue print for classroom in which states 'non-negotiables' in which are to be consistent in each classroom to ensure children are provided with high level and consistent resources in order to be able to achieve and thrive within mathematic lessons. These can be found on our school website. 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.' Professional teacher judgement can be used to further apply a range of resources to enhance learning. Materials are constantly updated and remain current with the teaching and delivery of mathematics. Gorse Hall Primary School is part of the Turing NW Maths Hub and uses the NCETM Mastering Number across school.



### **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 date: March 2025