



Greenholm Numeracy Policy

'At Greenholm, we want to nurture a lifelong passion for Numeracy.'

At Greenholm we are a school that is welcoming and safe which creates an environment that values and supports learning for everyone. We work hard to create an ethos that promotes inclusive practice for all by providing a consistent and fair approach, which is supportive of the continual emotional development of all by modelling and teaching mutual respect, openness and honesty. We always strive to ensure everyone at Greenholm feels empowered and is inspired to achieve high standards.

(i) WHAT IS MATHEMATICS?

Mathematics helps us make sense of our world, providing a precise means of communication using numbers, symbols and shapes. It is a powerful universal language, used to explain, predict and represent events and tackle problems in everyday life.

(Birmingham Curriculum Statement)

(ii) AIMS OF MATHEMATICS AT GREENHOLM

- To develop a confident and positive attitude by encouraging pupils to see mathematics as an enjoyable and satisfying experience through fluency, reasoning, problems solving and practical relevance in everyday life through a mastery curriculum.
- To provide the opportunity for pupils to develop the practical skills and understanding of concepts, facts and operations as outlined in the National Curriculum Programmes of Study for Mathematics through the Mastery approach, which includes pupils being taught through concrete, pictorial and abstract (CPA) methods.
- To help pupils observe and understand the patterns and relationships which are the heart of Mathematics.
- To encourage the use of Mathematical language to discuss, explain and express ideas and results both correct and incorrect.
- To provide a stimulating Mathematical environment where maths is celebrated and promoted through display.
- Continually strive to provide equal access to all aspects of the Mathematics Curriculum for every pupil or adult involved in the learning of Mathematics.

(iii) CLASSROOM ORGANISATION

The classroom should provide a stimulating maths environment. An area should be allocated to Maths resources, which should be clearly labelled and accessible to all pupils. The following materials should be evident within the classroom:

- A number line
- Concrete resources
- Pictorial representations
- Abstract written methods
- Number square
- Maths language/vocabulary
- Maths games or challenges
- Questions to encourage pupils to think about their mathematical learning.

- List of Maths ability groups
- Working wall including children's work

An audit of the maths environment will be carried out at the end of each term.

(iv) PLANNING MATHS

Planning is initially done termly (Medium term plans). Copies of suggested Medium-term plans are available, for reference, based on the National Curriculum Programmes of study. The medium-term plan is then further broken down into a weekly plan. These need to show differentiation, CPA methods, clear objectives for mental maths, the main (fluency, reasoning and problem solving) activities and how the plenary will be delivered. Teachers are required to hand in their weekly plans on the Greenholm Staff Common area, which allows the Maths Leader and team to view them, on a Monday morning prior to delivering them.

(v) THE MATHS LESSON

All lessons should provide opportunities to practise and rehearse (Fluency), explain and discuss their understanding using mathematical vocabulary (Reasoning); and apply their learning in lots of different contexts (Problem Solve). The maths lesson should have clear objective and or success criteria, and pupils should be made aware of this at an appropriate point in the lesson. The maths lesson should reflect the following aspects:

- a) an interactive, purposeful warm-ups to develop rapid recall facts as well as mental strategies. It is at the teacher's discretion when they deliver this in their lesson. This could be verbal, using ICT or assessment questions.
- b) Anchor Problem. The main session is introduced with an anchor problem; engaging pupils by creating excitement for learning where challenges are provided through stimulating contexts. (5-10 minutes).
- c) Guided Practise. Through effective questioning, the teacher can then tailor the tasks to best support and challenge the pupils. A variety of tasks will be presented in different ways, where CPA methods are undertaken using practical equipment and written methods simultaneously. (15 minutes).
- d) Independent Practise. Pupils can show how they work through tasks independently using the skills and methods practised in the Guided Practise part of the session. (20 minutes)
- e) Plenary Session (including Make them think! Activity - approximately 10 minutes)

It is at the teacher's discretion as to how they choose to order the above stages to their lesson. This can vary depending on teaching style, assessment and the requirements of the pupils.

Which must be planned for beforehand, and may be delivered in a variety of ways:

- i. feedback from a group
- ii. clarifying misconceptions
- iii. assessing pupils's understanding
- iv. pupils discussing own learning
- v. a reinforcement game in groups or pairs
- vi. Set homework or challenge

Targets should be set for the pupils before the main activity about time and quantity of work produced, so the pupils know exactly what is expected of them.

(vi) TEACHING STYLES

Mathematics teaching styles should reflect a 'conjecturing' atmosphere. Good learning in maths should give the learner opportunity to discuss why? Why not? How? When? And what if?

The range of teaching styles that should be employed:

- Exposition by the teacher
- Problem solving and investigating
- Practical work
- Consolidation and practice
- Mathematical discussion
- Mental and oral maths

A balance of teaching styles reflects good maths practise. Some styles may lend themselves better to certain aspects of learning / learners.

(vii) USING AND APPLYING (Mastery): (Also see planning and teaching styles)

Every opportunity should be taken to encourage aspects of using and applying maths or currently referred to as 'Mastery', i.e. taking the knowledge gained and applying it to different contexts. This identifies the need to use a variety of resources. Give pupils the opportunity to discover key concepts by providing guided activities. Investigational skills should be continuously developed and encouraged throughout the school. The pupils should decide on how to develop the investigation and note what they discover. Incidental investigation work should be encouraged, if pupils come up with a question or query the mathematics, they should be given the opportunity to explore and develop the idea. A 'systematic' approach to investigations should be promoted i.e. start at the beginning or the easiest step and reflect on prior knowledge. Encourage pupils to record their findings / results, using a variety of methods (for instance, tables, flow charts, brainstorming), so that they are easier to analyse, and form a generalisation.

(viii) TIME

Approximately 5 hours should be allocated to the teaching of mathematics per week through the Numeracy hour. The time spent on any maths theme is specified in the medium-term plans. Other factors that may influence how long to spend on an aspect of the subject may be indicated by the following:

- N.C. requirements
- The medium term planning
- The pupils response
- Teacher assessment

In the time allocated, teachers should aim to cover all the medium-term plans and in some instances, go beyond.

(ix) I.C.T.

Information Technology is a rapidly developing area of the curriculum, and therefore, should be used to support mathematics. Early years use BeeBots to explore computer control alongside Number Blocks, Numbots as a tool for mathematical learning. Computers are used from Reception to Year 6 to enhance Mathematical learning where appropriate. Calculators are also available in each class. Every class has access

to the I.C.T. room. Having access to Mymaths, Times Tables Rock Stars and Numbots, and a variety of other resources targets specific pupils, such as Interactive whiteboard resources to support CPA.

(x) DIFFERENTIATION:

Differentiation can be catered for in different ways:

- By differentiating activities
- By outcome (particularly in the case of investigations)
- By varying the task
- By grouping the pupils according to ability and target setting
- Through targeted questioning
- By focused input
- Use of resources
- Giving the pupils opportunity to choose their task

(xi) RESOURCES

Published mathematics schemes are used as a backbone resource, enriched by many other activities from a variety of sources, which are constantly up-dated as new materials become available.

Throughout both key stages, teachers have access to Mymaths, and a variety of games and other materials to provide our pupils with a rich, broad and balanced curriculum. Supplementary teacher resources are situated in the Resources Room.

Practical resources are: -

- class based (everyday basic equipment)
- centrally based (expensive topic, specific items)

Deficiencies in resources or suggestions for future purchases should be made to the Maths Leader.

(xii) PROGRESSION AND CONTINUITY:

This is provided using the Numeracy document and detailed medium-term plans. Progression and continuity will be ensured by:

- Monitoring medium and short-term planning
- Audit of pupils work
- Lesson observations
- Teacher evaluation
- Assessment

(xiii) ASSESSMENT - TEACHER ASSESSMENT, TASKS AND TESTS.

Teacher Assessment should be ongoing, and a range of techniques may be employed

- Display
- Marking (including marking codes)
- Task assessment
- Observation
- Questioning
- Short tests, both written and oral.

- Diagnostic analysis
- Standardised scores
- Target setting
- Weekly evaluations

To get a fuller assessment of a pupil's capability the pupil needs to be assessed on several pieces of work, using several the above. Pupils are assessed more formally in Reception using Baseline Assessment, Year 2 and Year 6 by use of the Statutory Tasks and Tests for end of Key Stages. In Year 1 to Year 5 summative assessments are used at the end of the Autumn, Spring and Summer terms.

(xiv) RECORD KEEPING AND REPORTING

Reports to parents are written annually. Ongoing records of group achievements are kept based on the above assessment strategies and individual termly targets set. Target tracker is the school's electronic recording system.

(xv) Special Educational Needs and Disability (SEND)

A variety of resources are available for pupils with SEND Maths planning needs to reflect the needs of all pupils. The under achievers should be given plenty of opportunity for consolidation and practical work. Open-ended tasks are a useful way to cater for all SEND pupils. Targets for Maths should be set in Individual Target Plans. The Maths Continuum can be used to support and plan for pupils who have specific needs in Maths. SEND and pupil premium learners are identified on the weekly plans to ensure their needs are planned for.

(xvi) HOMEWORK AND PARENTAL INVOLVEMENT

Maths homework should not just be a consolidation exercise, but open-ended activities and Maths games, investigational activities related to ongoing work in the classroom, should also be sent for homework. Homework is set weekly and a time allocation between half an hour and up to a maximum of one hour for Year 6 per week.

At Greenholm, we enjoy involving parents in all aspects of school life, and Maths is no exception. Reception parents are inducted with a numeracy workshop at the beginning of the academic year. Parents are invited to participate in any maths events. Parents are always welcome to observe Maths lessons, or work with their pupils by prior arrangement. Parents are also encouraged to participate in industry linked maths projects.

(xvii) MONITORING AND EVALUATION

It is the intention of the Maths Leader with the help of the staff to monitor the work in Mathematics through collaborative work in the classroom.

- Looking at pupils work (book audits)
- Medium term plans
- Talking to teachers
- Looking at display work.
- CORE group meetings
- Regular Numeracy team meetings
- Looking at work resourced for lessons

Reviewed March 2021.