Grasmere Academy

Learn • Flourish • Achieve

Mathematics Policy

Date adopted by governors: February 2018

Committee: Quality

Review date: February 2020

Rationale

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life, many forms of employment, science and technology, medicine, the economy, the environment and development and in public decision making. Different cultures contributed to the development and application of mathematics. Today, the subject transcends cultural boundaries and its importance is universally recognised. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a more elegant solution to that problem, or suddenly sees hidden connections.

Aims of Mathematics at Grasmere Academy

- We are continually aiming to raise the standards of achievement of the pupils in Grasmere Academy.
- The mathematics teaching at Grasmere Academy is geared towards enabling each pupil to develop within their capabilities; not only the mathematic skills and understanding required for later life but also an enthusiasm and fascination about maths itself.
- We aim to increase pupil confidence in maths so they are able to express themselves and their ideas using the language of mathematics with assurance.

Aims of the 2014 National Curriculum

The 2014 national curriculum for Mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of Mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason Mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their Mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

The National Curriculum for Mathematics

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The 2014 National Curriculum programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge across all the National Curriculum subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils

who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Cross curricular

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It is a core subject with a range of cross-curricular links but most often, is best taught discretely, using opportunities from other subjects to rehearse skills in a context. Numeracy involves developing confidence and competence in number work; shape, space and measure; handling data and the using and applying of these skills.

Health and Safety

As a staff, we have to ensure the provision and maintenance of a safe and healthy working environment and that children are appropriately supervised during all practical activities.

Equipment will be used safely and appropriately. Specifically:

- Short pencils on compasses
- Pupils will not lift heavy objects or multiple weights in excess of 5kg to avoid strain to back muscles.
- Food products will be in date.

E-Learning

The use of ICT and iPads can enhance the teaching of Mathematics significantly. It has ways of impacting on learning that are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. A range of software and resources are available to support work with the iPads. All children have access and accounts with RMEasiMaths and Sumdog.

Teaching and Learning

Lessons follow the format of a Trio Time Starter (See Basic Skills Policy), a main activity and a plenary session. It is clear to the children what they will learn as objectives are shared with them. Support for particular children who may be experiencing difficulties with mathematics is provided through regular in class support.

The teaching of maths at Grasmere Academy provides opportunities for:

- Group Work
- Paired Work
- Whole Class Teaching
- Individual Work

Pupils engage in:

- The development of mental strategies
- Written methods (See Calculation Policy)
- Practical Work

- Investigational Work
- Problem Solving and Reasoning
- Mathematical Discussion
- Consolidation of basic skills and routines

At Grasmere Academy, we recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standards written methods are introduced. This is ensured through the use of both our Basic Skills Policy and our Calculation Policy.

We endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing.

Planning

Planning of activities to develop children's mathematics is taken from the Primary National Curriculum 2014. This is mapped out to shown progression and to ensure that all areas are covered thoroughly, ensuring that no gaps in children's knowledge appear.

The expectations are that the majority of children will move through the stages at broadly the same pace. However, decisions about when to progress to the next stage will be taken by the class teacher and will be based on the pupils' security in understanding and application of the skills. Pupils who grasp and apply skills quickly will be challenged. Those who are not sufficiently secure will be provided with opportunities to consolidate and master their understanding.

Assessment and recording

Assessment for Learning is fundamental to raising standards and enabling children to reach their potential. Assessment in Mathematics takes place daily using a range of strategies such as marking and feedback of work and verbal discussions with children. This information informs subsequent planning and next steps in teaching and learning.

Targets are set at the beginning of each year and progress towards them are regularly reviewed throughout the year. Records are collated to inform the school's School Improvement Plan (SIP) and Maths Action Plan. This tracking also includes half termly tracking of standards for each child. This data is used by the Maths Subject Leader and Head Teacher to review progress towards end of year targets.
The outcomes of regular assessments are recorded and forwarded to the Headteacher and maths leader.
Formal assessments specific to year groups:

Year	Assessment
Foundation stage	Attainment on entry Attainment on exit
Year 1	Teacher assessment
Year 2	KS1 SATs
Years 3, 4, 5	Teacher assessment
Year 6	KS2 SATs

Pre and Post Assessments

Pre and Post Assessments are given to the pupils at the beginning of a topic (printed on blue paper) and the end of the topic (printed on pink paper). These will be displayed in the children's books to show progression within a topic. The outcomes of these assessments will inform planning and teaching.

Reporting

Parent open afternoon are held each term where children's progress and achievement will be discussed. All parents receive a yearly written report on which there is a summary of their child's achievements and progress, together with a comment on the child's effort and engagement with mathematics.

Resources

All classrooms have a number of small maths resources and a Mathematical dictionaries. Topic specific resources (such as weights and scales) are located in well labelled central storage areas. There are whole school Calculation and Basic Skills Policies.

Display

We recognise the important role display has in the teaching and learning of mathematics by having maths work displayed in school.

Every class to have

- a maths area where children have access to the resources they need
- a times table display (See Basic Skills Policy)

EYFS and Key Stage 1 – All teaching areas have interactive whiteboards and Apple TV to support children's learning.
Key Stage 2 - All teaching areas have a TV and Apple TV to support children's learning

Equalities

We believe that equality at our school should permeate all aspects of school life and is the responsibility of every member of the school and wider community. We will always strive to ensure equality of access to maths for all pupils irrespective of their gender, ethnicity, disability, religious beliefs/faith tradition, sexual orientation, age or any other of the protected characteristics (Single Equalities Act 2010)

Inclusion

Wherever possible we aim to fully include all pupils in maths teaching. Through our maths teaching we provide learning opportunities that enable **all** pupils to make progress. We set suitable learning challenges and respond to each child's individual needs.

Where necessary teachers will, in consultation with the SEND Coordinator, draw up a Special Education Need Support plan. When planning teachers will address the child's needs through simplified or modified tasks or the use of support staff.

Support Staff will support some children using maths programmes including Success at Arithmetic.

Children who are working significantly below their age group access the ARP, where they have access to small group learning opportunities.

Monitoring

The monitoring of the teaching and learning of basic skills will be carried out by the school's senior leadership team and will involve:

- Maths learning walks
- Maths lesson observations
- Book scrutiny
- Planning scrutiny
- Analysis of data

Any CPD requirements will be identified as part of the monitoring process.

Roles and Responsibilities
The Headteacher

- To actively support and encourage staff, praising good practise and supporting staff development, in-service training and resources.
- To monitor teaching and learning through lesson observations, climate walks and book review analysis and to give informative and constructive feedback.
- Support staff development through training and provision of resources.

Subject Leader

- To work with the Headteacher and the Senior Leadership Team to monitor, plan and develop the subject to allow for progression, continuity and high standards of attainment in Mathematics.
- To support colleagues in the teaching of Mathematics and provide a strategic lead and direction in the subject.
- To manage periodic book scrutiny to ensure the curriculum is being covered and the marking policy is adhered to.
- To monitor progress in Mathematics, highlight and plan actions required.
- To take responsibility for auditing and organising Mathematics resources.
- To keep up to date with developments in Mathematics education and to inform colleagues as appropriate.
- To draw up annual action plan for Mathematics.
- To review the school policy for Mathematics as appropriate.

The Class Teacher

- To be responsible for the planning and teaching of Mathematics
- To manage and supervise their class' use of Mathematics equipment.

The Governors

- To appoint a named governor who has responsibility to oversee Mathematics. They will meet with the subject leader to review development plans.