

# Maths Policy

## Intent

*"A person who never made a mistake, never tried anything new."*

**Albert Einstein**

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.

### **WE CAN provide teaching that develops knowledge and skills so children can learn and progress effectively**

It is our intent that children build on previous learning through a series of carefully planned lessons. Pupils use these vertical links to support them to build competence in maths. Units begin with children becoming **fluent** in the fundamentals of mathematics so they can recall and apply knowledge rapidly. They then move onto **reasoning**, where children develop arguments, justification and proof using mathematical language. Lastly, children will be asked to **solve problems** by applying their mathematics in order to seek solutions. In the EYFS, children learn to develop a strong grounding in number. They are taught to count confidently, develop a deep understanding of the numbers to 10 and look at patterns within those numbers. They are encouraged to use appropriate vocabulary and are given opportunities to reason across all areas of mathematics.

### **WE CAN offer enriching activities, events and experiences**

It is our intent that Maths lessons include memorable chocolate chip events and activities which enrich learning. Maths sometimes forms part of Whole School and Junior Leader Days where children are immersed in particular content for the day.

### **WE CAN work together to remove barriers and ensure equality**

Lessons are carefully sequenced to ensure that all children, regardless of their ability or confidence level, are able to progress. A wide variety of resources are used to support the content of lessons and adult support is given when needed. Those who are not sufficiently fluent with earlier material consolidate their understanding through additional practice before moving on. The most able mathematicians are challenged through a variety of tasks. Those who grasp concepts rapidly are challenged through rich and sophisticated problems before any acceleration through new content.

### **WE CAN build independent and resilient learners who are able to communicate confidently**

Children are encouraged to develop a positive attitude and interest in Maths. They are reassured and when learning something new, they are supported to 'have a go', talk to their friends and adults and not be afraid to make mistakes. Maintaining a Growth Mindset is modelled and promoted.

Independence is encouraged and praised and mathematical vocabulary is taught and revisited in order for the children to use appropriately when communicating methods used or understanding of mathematical ideas.

**WE CAN listen to and treat each other and all members of the community with respect, tolerance and concern**

Children are taught to share their thoughts and theories about problems. They are taught to listen and respond with respect.

**WE CAN recognise ability, maximise potential and prepare children well for their future and life in modern Britain**

Understanding Maths is critical in everyday life. A high-quality Maths education therefore provides a foundation to understand the world and to appreciate its power. It is crucial for financial literacy in most forms of employment and children will need this when they start work in the future.

An interest in Maths at primary level is a foundation for secondary and it could spark a curiosity which could lead children into becoming an accountant, a banker, the next big game designer or even an astronomer!

## Implementation

### Roles and Responsibilities

- The Class teacher is responsible for delivering Mathematics as outlined in the curriculum
- The Maths subject leader is responsible for:
  - overseeing MTP to check any misconceptions and ensure that subject knowledge is sound.
  - ensuring that planning features effective fluency, reasoning and problem solving.
  - ensuring all resources for teaching are available and well organised,
  - offering support with teaching and learning,
  - maintaining an oversight of assessment outcomes,
  - monitoring the quality of teaching and learning,
  - keeping up to date with the latest best practice Maths teaching.
- The Curriculum Manager is responsible for supporting the DT subject leader in their role.
- The Academic Lead is responsible for ensuring progression and continuity across the school.
- The Headteacher is responsible for overall academic provision and performance.

### Organisation

Mathematics is taught as daily hourly lessons.

The units are outlined in the Curriculum Document.

Mathematics homework is available on MyMaths. Children also have access to Numbots or Times Tables Rockstars and should complete regularly.

### Teaching and Learning

A Maths unit should follow a logical sequence of lessons, building to children being able to apply their mathematical knowledge to a range of reasoning and problem solving tasks.

Best practice is for Maths lessons to include practical tasks and activities when appropriate and to be set in a real life contexts addressing a particular problem.

### Unit Plans:

A unit of work should show how children progress from a starting point.

Vertical links allow Maths learning to build progressively between year groups.

### Mapping:

Teachers delivering the unit will complete MTP. The Maths subject leader will monitor this and offer feedback and advice before teaching commences. At this point, class teachers must identify which resources will be required, check what is available and ensure that work is planned at the correct pitch.

#### Lesson Planning:

Teachers then plan individual lessons to deliver the required content.

Lesson plans should contain differentiation as appropriate to the children.

#### Modelling:

A varied range of models, examples and images should be used for exploration or to demonstrate how things work.

A range of manipulatives should be used to help facilitate the learning for children so they can have more concrete experiences. Modelling of how to complete tasks should form part of the teaching process. This can include identifying improvements.

#### Scaffolding:

To enable all children to develop from their starting points, scaffolding strategies could be used to enable children to complete an increasingly challenging standard of work with increased independence.

#### Differentiation:

Children of all ability levels should be able to succeed. All children are supported to engage with lessons and record their ideas in an accessible way so they are able to achieve. Modifications to tasks including the use of manipulatives or concrete apparatus as opposed to abstract ideas may be appropriate. The use of adult support can also be used.

#### Skills:

Children will have opportunities to work both collaboratively and independently. Children will have numerous opportunities to develop resilience as well as communication skills when discussing their ideas and working through their ideas.

#### Cross Curricular Opportunities:

Opportunities for Maths to be used across other subjects, when appropriate, is advised.

#### Resources

Many resources are found in classrooms for children to use regularly.

Other resources can be found in the Science cupboard.

#### Equality and Inclusion

Mathematics teaching will be accessible to all children and challenge them appropriately. Where children need additional support this may be provided through scaffolding or adult support as part of universal provision.

#### Recording

Children from Year R-6 have a Maths exercise book in which they are able to record any of their own individual work. Working Walls should show the structure through a unit and how previous knowledge has been used to help in the application of reasoning and problem solving (see Curriculum Folder).

When children work in a group, large paper sheets is often used as an appropriate mechanism.

## Impact

By the end of their time at Grendon Primary School children will have become fluent in the fundamentals of mathematics. Children will understand how to reason mathematically by discussing generalisations, developing arguments and proving their thoughts using the correct use of mathematical language. They will have practised increasingly complex problems over time by recalling and applying their knowledge rapidly and accurately. This will involve breaking down problems into a series of smaller steps by persevering in seeking effective strategies and solutions.

## Assessment

Assessments are made at the end of each term.

Class teachers assess children against KPI statements. Here, a judgement is made based on evidence which shows whether children are working below the expected standard, working towards the expected standard, at the expected standard, above the expected standard or exceeding the expected standard.

Summative assessments are also carried out at the end of each term in the form of tests. Analyses of results is carried out to identify strengths, weaknesses and any area where additional support is needed.