



# Great Marsden St. John's Primary - a Church of England Academy. Our Curriculum Statement for Maths

## Our Vision

Our children will experience love, respect, faith and success as unique individuals within our school community and the wider world, now and in the future.

## Our Mission

We ask that Christ will live in our hearts through faith making us rooted and grounded in LOVE.

Ephesians 3

## Our Values

LOVING God

LOVING Others

LOVING Ourselves

LOVING Learning

LOVING Life

At GMSJ we believe that the basic principle of an effective curriculum is that learning makes a change to long term memory. The intent is that our Maths curriculum facilitates the delivery of this basic principle. In order to do so a strategic approach, based on pedagogical research, must be in place.

## CURRICULUM INTENT

**Our Maths Curriculum is broad and ambitious.** It is built upon the National Curriculum coupled with defined development of cultural capital “the knowledge that children need to be effective citizens”. Where possible we expose the children to experiences they are unlikely to encounter in other parts of their lives. To achieve this we have a comprehensive and deep knowledge of our families and community that enables us to strategically plan life enrichment.

**Our Maths Curriculum is well planned and sequenced,** it contains the right knowledge in the right order, providing pupils with the building blocks of what they need to know and be able to do to succeed in Maths. The Maths Curriculum is a spiral curriculum (Jerome Bruner) where subject **big concepts, disciplinary and substantive knowledge** are reencountered throughout the child's life at GMSJ.

**Disciplinary Knowledge** refers to the knowledge of **how** to perform a specific skill or task, it is automatic. Examples of disciplinary knowledge in Maths are:

Knowing how to use a protractor or ruler.

Knowing how to find answers using methods such as column addition, subtraction or grid method.

**Substantive Knowledge** involves “knowing that”. Recalling information from substantive memory involves some degree of conscious effort – information is consciously brought to mind. **It is the Who, what, where, when and why of learning.**



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Examples in Maths include

Knowing angles on a straight line add up to 180 degrees.

Knowing there are 1000g in a kg.

Knowing 27 is made up of 2 tens and 7 ones.

The two work together.

**Big concepts** are complex and abstract, such as 'place', 'chronology' or 'grammar'. These **big concepts** hold substantive and disciplinary knowledge. They tie together Maths topics into a cohesive framework. Examples of big concepts in Maths are : Number and Place Value, Addition and Subtraction, Fractions, Decimals and Percentages, Geometry - Shape and Position and Direction, Measurement, Statistics, Algebra, Ratio and Proportion.

By encountering the same **big concept** over and over children gradually build understanding of them.

**Our Maths Curriculum has a coherently planned assessment sequence** to measure the impact of the Maths curriculum on the outcomes achieved by children. Children should be building a body of knowledge that they are able to commit to long-term memory, draw from and build on. In Maths we assess learning through a variety of ways (see Assessment Policy).

**Our Maths Curriculum is inclusive.** Examples of support may be in terms of the concrete equipment used or pictorially before abstract concepts are introduced. Work may be enlarged and or scribed. Children who excel in Maths will be provided for in terms of breadth and depth through reasoning and problem solving using a variety of resources.

**Our Maths Curriculum ensures that the Golden Thread runs through it.** In recognising that Literacy skills form an essential basis on which the rest of our curriculum is built, it is fed through the Maths curriculum. This is achieved by encouraging the children to read and find meaning in the problems presented to them.

The Golden Thread emphasises the teaching of vocabulary. We know that this is often a barrier for our children and therefore requires more input. Technical vocabulary that is essential for the understanding of Maths is taught and displayed in each classroom.

### **CURRICULUM IMPLEMENTATION.**

**How we implement our broad and ambitious Maths curriculum.**

From entry into school in EYFS, all children experience the Maths curriculum.

We weave high quality activities which increase cultural capital throughout the Maths curriculum. For example: measurement is used in a practical context during the DT Food



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Fortnight activities throughout school. Visitors are encouraged to come and talk to the children about money management.

### **How we implement our well planned and sequenced Maths curriculum.**

**Big concepts** are charted on the Maths **Curriculum Map**. This careful process ensures that Maths learning is sequenced to build upon prior knowledge. They are built on throughout the year in addition to progression throughout school.

This map also identifies which medium term planning resource must be used to inform short term planning. In Maths all year groups follow a sequence set out by Lancashire County Council, either through their Planning Disc (Y5 and 6) or through the Red Rose Maths Scheme (Years 1, 2, 3 and 4). EYFS also follows an LCC sequence.

Each Maths unit is broken down roughly into blocks, however, it is understood that some concepts may require more input and so may take longer to master, likewise some may take less time. Such rigour ensures that learning is focused and diverse.

The timetabling of Maths looks like this:

In EYFS

Daily Maths lessons

10 - 15 minutes fluency sessions based on the NCETM Mastering Number programme - 4x a week.

In KS1

Daily Maths lessons

10 - 15 minutes fluency sessions based on the NCETM Mastering Number programme - 4x a week.

In KS2

Daily Maths lessons

For the majority of Maths lessons, **a defined structure is in place**. This is not dictatorial however, it is expected to see some aspects of the outlined framework in each lesson. In Maths the lesson model would be:

A mental Oral starter. On Monday / Wednesday / Friday in Y5 and 6, this takes the form of arithmetical questions which are repeated upon and developed through the week. This provides practice in fluency.

A problem presented to the class based on the learning that day

Teaching and guided activities

Independent activity

Conclusion



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Where appropriate subjects make use of **stem sentences** to hook learning into memory. They are a learning scaffold that can help students respond (orally and through writing) using complete sentences. For example in Maths "When the whole is the same, the greater the number of equal parts, the smaller each equal part is" or There are.....tens and.....ones. The number is.....

**Assessment** sits at the heart of Maths teaching and learning at GMSJ. Minute by minute assessment of understanding, or indeed misunderstanding, is fundamental to our teaching model. It informs future teaching, identifies starting points and exposes gaps in disciplinary and substantive knowledge. Adults use a variety of strategies to obtain information. These strategies are not specified but a minimum use of 'hands up' is encouraged.

In Maths, we assess children's substantive and disciplinary knowledge in a wide variety of ways throughout the year. For details please see the Assessment Policy.

When monitoring learning and teaching in Maths, again many methods are adopted. Pupil Conferences are a key method of monitoring alongside book looks, planning scrutinies and agreed lesson observations.

Children are taught to self and peer assess their learning against given criteria. In Maths this is against their understanding of the learning objective for that lesson.

Marking and Feedback is a crucial aspect of assessment but this must be manageable. In Maths verbal feedback is given whilst walking the floor and marking during the lesson. This enables us to tackle any misconceptions at the point they are made, and to provide further input in a timely manner.

#### **How we implement the Literacy Golden Thread through our Maths curriculum.**

It is recognised that Literacy skills form an essential basis on which the rest of our curriculum is built. To this end it is our expectation that the standards of learning achieved in Literacy in reading are carried through to Maths. This could be through correct reading of questions and through the oral explanation of calculations and problem solving.

#### **CURRICULUM IMPACT**

To measure the impact of the Maths curriculum at GMSJ we use qualitative and quantitative information.

What we measure:

- Pupils disciplinary and substantive knowledge across the curriculum.
- Results of national tests.
- Results of internal tests.



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- Pupil's progress from starting points.

How we measure:

- Reviewing and evaluating the work pupils produce.
- Pupil voice via pupil conferencing.
- Comparison with national statistics and benchmarking against similar schools.
- Observation of teaching and learning.

Why we measure:

- To identify strengths in our Maths curriculum delivery and set goals for improvement.