

Moss Side Primary School Policy

Maths Curriculum



Maths intent

“Without mathematics, there’s nothing you can do. Everything around you is mathematics. Everything around you is numbers.”

— **Shakuntala Devi, Indian writer and mental calculator**

The understanding of mathematics is a fundamental life skill, crucial for everyday life as well as future education and employment. Consequently, maths is a core subject within all primary schools and is a key element of the curriculum at Moss Side.

We hope that pupils will develop a love of maths and a confidence to investigate and manipulate number; explore patterns and shapes; approach problem solving with hunger to succeed; enjoy maths lessons at Moss Side; engage in maths outside the core provision time. It is important that maths both provides the basic skills and an opportunity for pupils to experience the opportunities to ‘delve deeper’, so that they can become immersed in maths and feel completely comfortable. Developing confidence is therefore key to the work of school within the realm of mathematics, both for gifted mathematicians and for those more reluctant pupils. Overcoming the hurdle that numbers are something to worry about is certainly crucial to our approach.

Aims

Pupils will:

- develop a positive attitude towards mathematics and an awareness of its life-long importance.
- mature the practical maths skills required in everyday life.
- gain an understanding of mathematics through enquiry and perseverance.
- develop fluency and confidence in recalling and applying mathematical knowledge, concepts and skills.
- learn the ability to solve problems, using reasoning skills and to work systematically and accurately.
- use initiative and an ability to work both independently and in co-operation with others.
- nurture an ability to use and apply mathematics across the curriculum.

Curriculum Design

The class teacher, with help from the maths co-ordinator, is responsible for the mathematics in each class. The children work as a class, in groups or individually as appropriate, following the guidance of the National Curriculum. Each class has a daily Maths lesson, consisting of an introductory mental activity, a main activity and a plenary session. The main activity may involve the whole class together or in differentiated groups as appropriate.

EYFS

EYFS pupils follow the White Rose Maths scheme of work, in order to encourage practical work and discussion. Teaching staff use their professional judgement to decide whether pupils’ knowledge needs to widen further and/or steps need to be taken to intervene to support development. Teachers and support staff work intensively with pupils to support their understanding.

The main focus at this stage of school life is to have a secure understanding of numbers to 10, ready to access the KS1 curriculum. In preparation for this, we use number animals to aid recognition of the numbers 1-9 and do activities to link the number symbol (numeral) with its cardinal number value from the first term in school.

Opportunities are taken to embed learning within continuous provision wherever possible, linking back to prior lessons and allowing for consolidation and further maths discussion. Staff take the opportunity to develop their language and reasoning at these moments.

KS1

Pupils follow the White Rose Maths scheme, but staff work collaboratively to develop the curriculum so that it is spiral in nature (allowing pupils to re-visit topics on a regular basis). Staff use their awareness of the overall requirements of the National Curriculum, Lancashire maths units of study and Moss Side Infant Maths Scheme to support this decision making. Lessons are practical wherever possible and encourage discussion amongst pupils, as well as developing mathematical note taking.

Outside maths lessons, pupils are given opportunities to encourage core skills, whether that be via taking an opportune five minutes to count or sing number based songs, or free activities such as dot-to-dots or number bonds activities.

KS2

KS2 pupils study maths via the White Rose Maths scheme, which is adapted and differentiated to meet the needs of our pupils. These units of study develop themed weeks, linked to the overall national curriculum objectives that are broken down into year group expectations of increasing challenge. As in KS1, staff work collaboratively to develop the curriculum so that it is spiral in nature (allowing pupils to re-visit topics on a regular basis). Staff use their awareness of the overall requirements of the National Curriculum and the Lancashire maths units of study to support this decision making.

Some sessions are dedicated to the teaching of able mathematicians via a dedicated teacher, with the aim to stretch and challenge these pupils over a widened range of the curriculum. At the same time, this allows the class teacher to consolidate fundamental skills with pupils less confident in their mathematical ability. In Year 6, this strategy is particularly evident, where three maths lessons a week are 'streamed' in this manner.

There is a dedicated maths teacher who takes group of around twelve pupils out of class for their maths teaching (these groups are changed on a half termly basis). The purpose of this group is to develop confidence and strengthen fluency within core areas of maths.

KS2 pupils are accustomed to learning about maths at a variety of different times during the day outside of the core maths lesson. They complete Speed Tests daily as part of their early morning routine; these are used to consolidate core skills such as number bonds. They also aim to gain their 'Tables Certificate' by the end of Year 4, through regular practise and then signing up to be 'tested' by a member of staff in order to gain the relevant sticker (such as reciting x6 for a bronze badge).

NB. White Rose maths was implemented after lengthy research into previous practices and possible options. At all times, staff adapt and supplement this scaffold for language and practical application. We place strong emphasis on providing the children with concrete experiences and use a variety of structured apparatus throughout school.

Children in all classes will experience practical, investigative, mental, oral, written and problem solving activities and will have the opportunity to discuss these with the teacher and fellow pupils. We believe that the development of mathematical language is essential. For all pupils we will develop the use of language as a means of mathematical thinking. Pupils will have the opportunity to explain their work, make predictions and discuss different ways of approaching a given problem.

Assessment and Evidence

Due to the nature of everyday teaching, teachers and teaching assistant regularly assess pupils within the classroom, adapting lessons following oral and written work. There is regular written evidence of work on whiteboards, within books and on sheets, as well as practical investigation.

To compliment this, there is also a triangulated approach of 'soft' testing alongside formal internal and external assessments. These include:

- Quizzes and number fact checks (eg. number bonds tests)
- Half termly/ end of unit tests set by teachers
- NFER assessments (twice a year in Years 3-5, annually in Year 1)
- SATs testing (Year 2 and Year 6)
- Use of practice SATs paper
- Multiplication Check (Year 4)
- Moss Side Times Tables Certificate
- Moss Side Number Bonds Certificate
- EYFS baseline/ development matters/ EYFS profile
- Bi-annual sponsored maths facts
- Twice yearly teacher assessment (RAG rated) supported by the above

Enrichment Activities

Maths forms an important part of a lot of enrichment within school life, cropping up in the everyday life of the school and allowing pupils to put their mathematical skills to use outside of lessons. Some examples of this are:

- Pupils running bake sales and needing to calculate prices, change, quantities etc
- Pupils leading scoring and data analysis in sports, such as cricket scoring for intra-school competitions
- The use of data handling to support scientific investigation

Alongside these naturally occurring activities, there are also lots of cross-curricular links that can be found within the realm of mathematics. These occur within a wide variety of curriculum subject lessons (such as chronology within history) but also within the associated enrichment activities, such as Coding Club. As well as after-school activities such as these, maths forms an important part of two special weeks within the school calendar.

Maths Week/ STEM Week – Held bi-annually, maths week has been used to promote a love and enjoyment of maths. Activities have included a visit from Dave ‘Numberfun’ Godfrey, Kjartan Poskitt (author), maths trails, sponsored maths, building large tetrahedrons in the hall and outdoor problem solving. During the last maths week, topics were expanded to include the full range of STEM activities.

World of Work Week – Maths plays an active part in the enterprise element of this careers week. World of Work Week is held every four years.

Parental Involvement

We hope and expect that parents will be actively involved with their child's acquisition of skills and aim to promote this in the following ways:

- by holding open evenings during which their child's progress and ability can be discussed.
- by providing regular maths homework in KS2 and promoting the awareness, across all of school, of core skills that parents can develop with their children (number bonds, telling the time, measure etc)
- by inviting parents to assemblies and concerts, some of which may involve maths learnt within school.
- by encouraging parental support in enrichment activities (such as sponsored maths).

Inclusion

We aim to develop the mathematical skills of our pupils, no matter the relevant starting point. All maths lessons are suitably differentiated for pupils and additional support is provided for pupils where required, through adult input or appropriate apparatus. For pupils with specific challenges to their mathematical understanding, the use of group or individual intervention may be deemed appropriate to support their progress. In KS2, Rapid Maths is utilised to support pupils to continue to work independently during maths lessons.

Resources

Mathematical apparatus is stored centrally in the central school area and/or classes have their own sets of key equipment (such as place value counters). It is important that central items are returned after use and any deficiencies reported to the maths co-ordinator. It is frequently replaced and updated, usually at the request of class staff.

Effective from September 2021

Impact

The impact of the curriculum will be assessed by:

- The teacher assessment collated by assessment leader (see above).
- Pupil conferencing to discuss understanding, retention of knowledge etc
- Application of skills and knowledge in enrichment activity
- SATs results and analysis of marks breakdown

An annual report into the impact is provided by the subject leader, before development points are created for the following year.

This policy needs to be read alongside the following whole school policies:

- Risk Assessment File
- Marking
- SEND
- Positive Behaviour