# A Curriculum to Inspire @ Mountfields Lodge

### **CURRICULUM STATEMENT: MATHS**

### **Our Curriculum Intent for MATHS:**

The 'drivers' around which our curriculum is centred, without any subject preference or bias, are:

#### EXPLORE PERSEVERE (BE) INDEPENDENT COMMUNICATE

#### We want our pupils to develop EPIC qualities and become EPIC learners.

**E**: We want our pupils to have a love of exploring facts, finding information and developing new skills; we want them to be inquisitive and enquiring.

**P:** We want them not to give up at the first hurdle (or even the second); we want them to know that effort, commitment and hard work can pay dividends; we want them to persevere.

**I:** We want them to learn how to learn; to learn how to pursue lines of enquiry and interest themselves; we want them to develop independence.

**C:** We want them to be able to tell others, with confidence and clarity, what they know, what they think, what they imagine...we want them to be good communicators.

Whilst our 'Curriculum to Inspire' is based on the EYFS Curriculum and the National Curriculum, we have been proactive in our school by developing a new curriculum which inspires our children to learn and is relevant to their needs now - and in the future. We have tried to balance the 'have to' aspects alongside the 'got to' and the 'want to' aspects.

The aim of our curriculum is for pupils to have the requisite skills to be successful, independent and motivated learners in readiness for their next stage of education.

The Key Characteristics that we have identified, and that we believe, will make a **GOOD MATHEMATICIAN** are:

- The ability to understand important concepts and make connections within mathematics.
- The ability to independently use a broad range of mathematical skills when applying mathematics.
- The ability to use a fluent knowledge and recall of number facts and the number system.
- Showing initiative when solving problems in a wide range of contexts, including those that are unfamiliar.
- Fluency in performing and communicating written and mental calculations independently and when using mathematical strategies.
- Perseverance when faced with challenges, including a commitment to learn from false starts.
- Exploring a range of strategies when solving problems, including using practical equipment.
- The ability to communicate using a wide range of mathematical vocabulary.
- The ability to reason, spot patterns and generalise to make sense of their mathematical thinking.
- A commitment to ensure accuracy of mathematical thinking by checking back.

We believe that MATHS equips pupils with the 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. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society.

## **Our Curriculum Implementation for MATHS:**

At Mountfields Lodge School we teach the National Curriculum for Mathematics primarily, although not exclusively, through our use of POWER MATHS (Y1-6). Our commitment to this ensures that all pupils achieve mastery in the key concepts of Mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education.

Our approach to teaching maths in Foundation Stage is based on developing secure early number sense to create a solid foundation to support and compliment the teaching of the Maths Mastery approach throughout the rest of school. Our approach to developing early number sense consists of building an awareness of the relationship between number and quantity, in addition to, a clear understanding of number symbols, vocabulary and their meaning. Teaching will develop children's ability to engage in systematic counting, specifically understanding cardinality and ordinality. Lessons will build an awareness of magnitude and comparisons alongside an understanding of different representations of number. Our children should develop a competence with simple mathematical operations and have a good awareness of number patterns including recognising missing numbers. The approach we take is heavily research-based and we are convinced that such an approach will really compliment the new ELG due September 2020. Research studies, such as S.Gifford (2014) and Back (2014) support our revised practices and we believe that this is the best way for our pupils to achieve in their first years at school

Our short lessons are taught as whole class where all children are exposed to the same content. Sufficient time is spent on topics so the content can be mastered, this includes teaching each number to 10 for two weeks for the first part of the year. Precise mathematical language is used and explicitly taught. Discussion of tasks and methods are encouraged to promote reasoning and deeper understanding. Our continuous provision then provides opportunity for frequent additional practise which is encouraged, observed and when appropriate, facilitated by adults. Our continuous provision is based on effective early years pedagogy where a mixture of adult led, adult initiated and child led learning takes place. Learning of maths is not confined to specific maths lessons, in our foundation stage opportunities for learning are fully embedded into our daily routines such as snack times, tidy up, registers and lining up.

Back, J. (2014). Early Number Sense. University of Cambridge NRICH Millennium Mathematics Project.

Gifford, S. (2014). A good foundation for number learning for five-year-olds? An evaluation of the English Early Learning 'Numbers' Goal in the light of research. Research in Mathematics Education Journal, 16(3).

Gifford, S. (2005). Teaching Mathematics 3-5. Developing learning in the Foundation Stage. USA: Open University Press.

#### Our expectations for Teaching and Learning are:

- Maths is taught daily, and discretely with a focus upon acquisition of essential skills and knowledge. However, it is important to use that application of skills are linked across the curriculum where appropriate.
- Teachers should find ways of contextualising Maths and helping pupils 'see where Maths fits in' to their everyday lives. Power Maths helps this approach as questions are always in everyday situations.
- Pupils should use practical approaches to mathematics (models and images).
- Pupils should be encouraged to independently select resources to help them. Pupils use mixed ability '**Power Partners**' to promote mathematical vocabulary and discussions.
- Children are taught in mixed ability classes. However, those pupils identified with a higher learning potential are challenged further in their learning and children who find aspects of their learning more difficult are appropriately supported so that they too are enabled to experience success.
- Class teachers are to make use of the **Power Maths planning** and annotate accordingly.
- Pupils should learn from teachers, peers and their own mistakes. Pupils have the opportunity to use **self-marking and peer marking** to encourage independence and opportunities to reflect on their own learning.
- A pupil's secure understanding of Mathematical language should be encouraged. Pupils communicate using **STEM sentences** to support their learning.
- Pupils should be expected to ask questions as well as answer them in full STEM sentences.
- In Year 1 **Froggy Maths** is visited weekly. This is a 2-minute timed short task requiring speedy recall of arithmetic facts. All questions needed to be completed/ the learning target has to be achieved before a pupil may move on to the next 'stage'. When a pupil 'makes the move' they are given a new training sheet to take home with their new target. Children's achievements are celebrated by the movement of pupil name from one lily pad (target) to their new 'target' lily pad. Pupils are awarded stickers for each target (lily pad) achieved, and a certificate is awarded when 6 lily pads have been achieved. In addition to this, the children start to access Times table Rockstars during the spring term.
- KS2 Pupils use **TTRS Times Tables Rock Stars** to improve their fluency of number facts 3x a week.
- All lessons to have **identified element of reasoning** in them.
- Where appropriate Maths is to be taught through cross-curricular provision.
- MfL Calculation Policy reflecting Power Maths is to be adhered to
- Mastering Maths sessions to be carried out from 8.50-9.10am x 3/week; KS1 and 2
- White Rose Hub 'End of Term' assessments used to judge progress with Reasoning and Arithmetic in KS1 and 2
- White Rose Hub 'End of Block' assessments to be used to assess pupils at the end of each unit.

Periodically whole-school MATHS WEEKS are planned to unite the school in an engaging and cross-age-group enrichment opportunity.

The school hosts a KS2 Maths Club at points throughout the school year and some pupils in Y6, who are identified as having 'Maths Higher Learning Potential', are given the opportunity to take part in one of the Endowed Schools MATHS Master Classes outside school hours.

Where possible we use outside support, e.g. Pupils from the local Grammar School and our pupils have opportunities to enter MATHS Competitions e.g. Times Table Rock Star Challenges to motivate and inspire those with aptitude and skills to share their learning with other learners and parents/carers.

We look for opportunities to use the school grounds as a 'MATHS teaching resource' and as an 'active learning facility' to inspire and engage; this continues to be an aspect of provision that school is seeking to promote and develop further.

# **Our Curriculum Impact for MATHS:**

Marking and Feedback of our pupils' learning enables us to provide effective feedback to pupils on their learning performance. We can give recognition and appropriate praise for achievement. It helps us identify effective strategies and 'next steps' for improvement; it helps inform future planning. (x-ref. Marking and Feedback Policy)

We actively involve pupils in their own learning, by allowing specific time for children to read, reflect and respond to marking and feedback where appropriate. We aim to promote the motivation of our pupils and their desire to improve, asking them to evaluate their own learning and recognise their achievement through self and peer making.

We undertake both short formative tests and 'check-ups' to find out what our pupils know. We complete summative tests and assessments, ask pupil to self-assess and evaluate their learning, and we both acknowledge and quality mark the work of our pupils.

We measure progress through pupil work sampling and assessments. We monitor and evaluate end-of-term teacher assessment data in Maths and track pupil progress trajectories and pupil individual, group (SEND, disadvantaged and SEND,f gender...) and cohort attainment data. We use National EYFS, Y2 and Y6 data as our benchmark using this to make judgements of our successes and identify our 'next steps'. In MATHS we use class banding sheets to track the progress of all pupils. We identify any 'gaps' at an early stage and ensure quick intervention. At the end of each unit we White Rose Hub 'end of block' assessments. These establish any areas that need to readdressed individually or as a whole class. Every class teacher uses these to create any next steps required for each child.

We measure the success of our curriculum through pupil interview and curriculum review; we ask our pupils how they feel about their learning as their voice is important to us. We ask our parents. We ask our staff.

We undertake weekly Froggy Maths checks in KS1 to measure pupil's arithmetic skills. In KS2 we use Times Table Rockstars to measure children's multiplication quick recall. Children self-mark this and record their scores to allow them to improve on them each session. For both we identify any 'gaps' at an early stage and ensure quick intervention.