# Policy for Maths at Fallings Park

## Whole School Vision

Fallings Park's curriculum is designed to enable all pupils to work towards our mission statement: *Learn Today For Tomorrow's Success*. As we want our children to thrive and contribute to both the school and local communities, our curriculum provides memorable, knowledge-rich learning experiences in every stage of school life, within and outside the classroom.

The primary focus of our curriculum is to provide a purpose and relevance to learning, whilst making connections between all subject areas. Our school intends to empower students to embrace every learning opportunity, achieve their personal best and build their social, emotional, mental and physical well-being through a wide variety of experiences. This will provide our children with the foundations to become curious and creative thinkers; respectful and reflective individuals and be self-motivated learners.

# Intent

At Fallings Park Primary we want to nurture a love and enjoyment of mathematics in all of our children so that they are keen to explore different concepts and so discover the wonder of mathematics and how it links to their every-day world. Our curriculum follows the NCETM Teaching for Mastery approach and the Number Sense Programme, which we have aligned to the National Curriculum. Based on effective research, the mastery approach plans for small steps which allows children to make connections in their thinking in order to build a deeper understanding. Our maths curriculum sequence is cumulative and allows for consolidation of learning to ensure children make connection and remember more. We offer an ambitious curriculum that provides them with the skills and knowledge to become confident mathematicians. Language development is key in all our maths lessons, and by using precise mathematical and stem sentences, this offers the children a scaffold to broaden and articulate their mathematical thinking.

## We aim to through the intent of a mastery curriculum:

- To embed the 5 big ideas in teaching for mastery: Coherence, representation and structure, mathematical thinking, fluency and variation
- Have high expectations of all children and raise the standards of attainment of the pupils
- Provide a broad and balanced mathematics curriculum for all pupils, with a range of mathematical contexts to explore
- Developing number fluency, reasoning and problem-solving skills for all pupils
- Plan a sequence of small steps to ensure all children gain a deeper understanding
- Increase pupil confidence in mathematics so they can express their ideas using sound reasoning and appropriate mathematical vocabulary stem sentences
- Develop a love and curiosity for maths while developing develop resiliency and perseverance.
- Ensure all pupils have access to appropriate practical resources, models and images which will support learning and understanding
- To understand that maths is an essential to our everyday life.

# Implementation

## Subject Leadership

M. Wiley, S. Darlington and R. Smith take the lead in policy development of Maths, working with the SHaW Maths Hub (NCETM) to support colleagues in the teaching of Maths. They keep up to date with developments in Maths and disseminate information to colleagues as appropriate. Senior Leaders and Year Leaders monitor coverage and ensure the teaching of Maths is taking place and staff are following the PD guidance to inform planning. Progress is tracked using termly Teacher Assessments supported by Baseline, Midline and Endline Assessments; this is used to inform provision and is discussed in Pupil Progress Meetings with Year Leaders.

The subject leader gives the Headteacher a termly summary in which he/she evaluates the strengths and areas for development in the subject and indicates areas for further improvement. The Headteacher allocates regular management time to the coordinator so that he/she can review samples of children's work and undertake lesson observations of mathematics teaching across the school.

## Curriculum Design

Fallings Park ensures that all planning follows the Early years foundation stage Statutory Framework (2021) and National Curriculum for Mathematics (2014), which describes and provides detailed guidance for what should be taught in each Key Stage and ensures continuity and progression in the teaching of mathematics.

*"Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The 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 to science and other subjects." (National Curriculum 2014)*

## Planning

We ensure coverage of EYFS in Early Years and the National Curriculum for Mathematics at Key Stages 1 and 2. The delivery of the National Curriculum is facilitated by the Mastery Approach using the NCETM PD materials. These are used to form our long term plans.

### Mastery Maths Lesson

- LTP is mapped on Yearly overviews. These have been adapted from the Yearly Overviews from the NCETM Priority Curriculum*
- Geometry, Measures and Data Handling- some elements are contained in the PD materials, but additional time is planned in to teach these discretely throughout the academic year to ensure coverage.
- **As part of Covid Recovery, the NCETM priority curriculum will be used focusing on key objectives. Bridging objectives for each year group will also be used to ensure pupils are secure in those objectives and address gaps in learning (e.g. a Y5 pupil returning will complete work on Y4 bridging objectives to secure understanding before moving on)*

### Number sense/Arithmetic

- Reception to Year 2 will focus on additive facts which will be supported by Number Sense programme is used to plan, teach and deliver fluency; Y3-6 will use this as an intervention
- Year 3 and 4 will focus on multiplicative facts using soundbites and also a range of questions in their arithmetic sessions
- Year 5 & 6 will focus a range of questions in their arithmetic sessions which a focus on efficiency.

## The Mastery Approach

- Maths teaching for mastery rejects the idea that a large proportion of people 'just can't do maths'.
- All pupils are encouraged by the belief that by working hard at maths they can succeed.
- Pupils are taught through whole-class interactive teaching, where the focus is on **all** pupils working together on the same lesson content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and intervention ensures the pupil is ready to move forward with the whole class in the next lesson.

- Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning.
- In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- It is recognised that practice is a vital part of learning, but the practice used is **intelligent practice** that both reinforces pupils' procedural fluency and develops their conceptual understanding.
- Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.

Organisation

- Children are taught in classes, with mixed ability seating.
- Keep up, not catch up mentality- all children have the same target
- Work may be scaffolded more to support some children
- Activities to challenge further and deepen thinking for all
- Small steps and use of representations educe cognitive overload
- Intervention used to close gaps in learning from EYS onwards
- Some children will learn in smaller "Nurture Groups"- they will still be taught using the mastery approach and the PD materials but from a different year group

Lesson Structure KS1 and KS2

1. **Recall Slide** – Each lesson begins with a walk into learning opportunity with a mixture of questions on previously taught concepts. This is a short task which is completed on whiteboards.
2. **Feedback** – Children respond to feedback and make corrections from the previous lesson. If T is identified in their book then the teacher will provide individual or group support.
3. **Teach** – teachers use the 'ping pong' approach to teach each small step explicitly using NCETM materials. Teachers may introduce stem sentences for children to be able to explain their learning. Children given the opportunity to practise using the: I do, we do and you do format.
4. **Independent** – Children will apply what they have been taught in an independent activity. All children will begin from the same starting point with lesson design to be low threshold, high ceiling so it is accessible for all. Teachers will assess learning using live marking.

Lesson Structure EYFS

1. **Retrieval** – the lesson starts with a review and practice of something that the children looked at in the last lesson. Also children will have the opportunity to recall prior learning during planned child initiated activities.
2. **Teach** – teaching and group discussion to draw attention the maths using the number sense animations
3. **Teach and Independent** – most lessons, where appropriate, children are split into two groups. Half stay on the carpet and deepen their learning with the teacher, and the other group at the table complete an independent task that links to the teach.
4. **Recall** – During child initiated children will be exposed to maths concepts they have been introduced to in the teach part, also staff will facilitate discussion to draw out mathematical thinking.

**EYFS and KS1 Routines** – Mathematical routines linked to mathematics during the school day, such as self-registering on a fives frame (see mathematical routines).

General features of mastery approach

- When planning teachers to consider the 5 big ideas.
    - Coherence opportunities for all pupils using very small steps of learning enables pupils to learn together and gain deep conceptual understanding
    - Representation and structure to draw out the concept being taught and staff will consider which representation is best suited to each concept

- Mathematical thinking ensure children are taught to have a deeper understanding and look for patterns and relationships. They use stem sentence to support use of precise mathematical vocabulary.
- Fluency demands more of learners than memorisation of a single procedure or collection of facts. It encompasses a mixture of efficiency, accuracy and flexibility.
- Variation is to highlight the essential features of a concept or idea through varying the non-essential features.

### Display

At Fallings Park, we recognise the role display has in the teaching and learning of mathematics. Every classroom has a mathematics working wall which provides visual support for learning, key vocabulary and stem sentences, displays good maths work, and is regularly updated to reflect the topic being taught. In Early Years, there is a Maths area in which the environment is saturated with the relevant mathematics being learnt at that time, with both indoor and outdoor learning opportunities provided. Corridor displays are used to celebrate work

### Home Partnerships

Homework is used for children to practise fluency. To support parents we offer and encourage our children practise number bonds and multiplication facts at home and use web-based skills practice sites such as Education City, Numbergym, MyMaths, TT Rockstars and Century. We celebrate pupil success through our weekly assembly with a each year group awarding a mathematician of the week certificate.

# Impact

### Assessment

Summative assessments are carried out termly; Teacher assessments are made based on content covered. Tests are also carried out termly using Local Authority materials (Baseline, Midline, and Endline). Alongside this staff use NCETM RTP assessment questions to assess children after a taught unit. Statutory assessments are carried out the end of Key Stage 1 and 2 through SAT's. In addition, the Multiplication check (MTC) is carried out at the end of Year 4.

Formative assessment are carried out by the class teacher by identifying each child's progress in each lesson, giving immediate feedback through in live marking, determining what each child has learnt and what therefore should be the next stage in his/her learning. If pupils have not understood the objective of the lesson this will be identified on the success and they will receive re-teaching and support during the feedback of the next lesson. In order to remember more, children have daily recall slides to assess and revisit previously taught content.

### Marking and Feedback KS1 and KS2

Feedback to pupils about their own progress in Mathematics is achieved through the marking of work.

- is usually done while a task is being carried out (live marking), through discussions between child and adult, or during class marking (KS2)
- class feedback is given during the start of the next lesson
- if the teacher feels that a child has not achieve the learning objective then this will be identified in a 'T' in their book and the teacher will support them during the start of the lesson.
- children use marking to check and correct their work for corrections by being given time at the start of the next
- once any corrections have been completed, children will complete the challenge slide from the IWB that will extend their learning from the previous lesson
- TA's are expected to mark for individuals or small groups but it is the teacher's responsibility to check marking is in line with school policy.

### Monitoring of Maths

Monitoring the standards of children's work and the quality of teaching in mathematics is carried out regularly. The work of the Mathematics subject leader involves supporting colleagues in the teaching of Mathematics, being informed about current developments in the subject and providing a strategic lead and direction for the school. The Subject Leader has time out of class to undertake lesson observations across the school and review samples of children's work and teachers planning. Monitoring is undertaken in a variety of ways, such as: lessons observations, planning scrutiny, work scrutiny, learning walk, data analysis, staff audit, pupil voice and parent voice.

## Intervention

Children who are performing below age related expectations (ARE) are either; identified as focus pupils (2-3 in each class per term) for additional support within the lesson OR given additional small group support in an intervention. These pupils are identified by the Year Leader using Insight data tracker/SIMS and identified on the Provision map.
Where children are falling considerably behind the ARE for their Year group, children may be taught in a smaller Nurture group and access PD materials from a different year group as part of their personalised curriculum. Some children are given IEP's with specific Mathematics targets.

## Recording

Electronic records of achievement and progress in the formal assessments carried out at the end of each year are kept on the schools computer system for each child. (SIMS/Insight) These are updated termly and tracked which informs provision mapping and target setting.

## Reporting

Reporting to parents is carried out termly, through Parent Evenings, and annually through a Written Report.
Reporting in Maths will focus on each child's:

- attitude to Maths and effort demonstrated (learning behaviours)
- number fluency, reasoning skills and ability to solve problems
- progress within the Maths curriculum;
- end of term attainment, end of year attainment, and end of Key Stage attainment, supported by SAT's results.

## CPD

- Lead Teachers to attend Teacher Research Group (TRG) workgroups led by Mastery Specialists as part of SHaW Maths Hub
- Staff are to be supported in implementing the mastery approach through Open Lessons and have opportunities to work alongside the Mastery Specialist and Lead Teachers within school, as well as accessing NCETM video lessons
- Collaborative planning and teaching opportunities are available to work with either the Mastery Specialist or Lead Teachers.
- Teachers and TA's to attend Maths Hub subject knowledge enhancement (SKN) workshops
- Teachers to attend Maths Hub Lesson Design Workshop
- Staff use NCETM PD Materials and Number sense to inform their planning, lesson delivery and subject knowledge.
- Planned staff meeting for staff to receive regular training to support the use of these materials.

## Inclusion and Equal Opportunities

In school we provide a broad and balanced curriculum for all pupils. Through the planning of the Maths curriculum we meet the needs of individuals and groups of pupils. Effective learning opportunities are provided that can be modified, if necessary, to provide all pupils with the relevant and appropriately challenging work at each Key Stage.

The following three principles ensure an inclusive curriculum:-

- using small steps to set suitable learning challenges;
- responding to pupils diverse learning needs;
- overcoming potential barriers to learning and making amends for individuals and groups of pupils.

## Children with Special Educational Needs

We aim to fully include SEN pupils in the daily mathematics lesson so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods. Where necessary, teachers will, in consultation with SENCO, draw up an Individual Action Plan (IEP) for a child. If a child's needs are particularly severe they will work on an individualised programme written in consultation with appropriate staff. When planning, teachers will try to address the child's needs through simplified or modified tasks, the use of resources, or support staff.

Pupils with special needs in Maths may receive additional support, (Nurture Group- this will be working on appropriate PD materials from another year group in their personalised curriculum).

Also see the following policies for more guidance:

- Assessment policy
- Marking and feedback policy
- SEND policy
- Fluency and multiplication policy