



Maths Policy

Aims: Children enjoy maths and become confident, skilled mathematicians – making links to real-life. Our children will be able to apply their learning to everyday life situations which will support them in their time during Primary school and beyond. They will develop their reasoning and problem solving skills and all pupils will be challenged.

Teaching Approaches: At Fellgate Primary School, we use White Rose Maths schemes of learning, and a modified version of their resources in order to provide a comprehensive and expertly designed journey through the world of Mathematics. White Rose is based on a small steps approach that keeps all learners together. By using the resources across the school, we can ensure consistency of the mathematical elements and comprehensive coverage of the curriculum. Staff are also skilled in utilising other resources such as NRich, NCETM and the DfE Ready to Progress documents when appropriate. We believe that this approach will facilitate consistent delivery of Mathematics across the school and across the inevitable ability range within year groups. It is also designed to support mathematicians who require more time and visual representation to grasp fundamental concepts and those who require challenging further to achieve Greater Depth. We follow a whole school mastery approach for Maths where lessons are structured to promote fluency, reasoning, the development of key mental maths skills and problem solving techniques. Lessons are delivered using an episodic teaching approach whereby prior knowledge and skills are built upon using small steps and all pupils are highly engaged in their learning. Short 'Core Four' sessions outside of the main Maths lesson ensures key Maths concepts are continually revisited to support retention.

White Rose Resources support us to provide:

- CPA (Concrete / Pictorial / Abstract) representations.
- Variation (Procedural / Conceptual).
- Logical and effective small steps.
- Accurate vocabulary and sentence stems.
- Manipulative usage.

White Rose resources support:

- All learners through a whole class learning approach with small steps building on prior knowledge.
- EYFS stage learning.
- Visual representation designed to show concepts clearly.
- Re-visiting of concepts.
- Bar models and PPW models for problem solving.
- Clear progression of calculation.
- Fluency of calculation and concepts with 'Core 4' questions

Manipulatives are:

- Used purposefully and appropriately.
- To introduce a new mathematical concept.
- They are available for appropriate lessons – this builds a mental picture of a mathematical concept with the aim for all pupils to be able to move on to using that concept without manipulatives when ready.
- Manipulative use develops through concepts as the learner moves from EYFS to Y6.
- They can be used both to support and challenge all pupils.

EYFS: EYFS follow the White Rose schemes of learning – principally securing the representations of numbers up to 10 and recognising number to 20. Children are encouraged to spot patterns and identify differences through variation. EYFS children begin their fluency journey by noticing and recalling numbers up to 20. EYFS practise is predicated on exploration and discovery with songs and repetition to secure foundational knowledge. They also use the Mastering Number Programme to promote a sound understanding of the basic Maths knowledge required to carry them through their school career.

Times Tables:

We believe that through a variety of interactive, visual and engaging techniques, all children can achieve the full multiplication tables knowledge by the time they leave Primary School. The new National Curriculum (2014) states that by the end of year 4, pupils should be able to recall multiplication and division facts for multiplication tables up to 12x12. Children in Year 4 are also required to take a multiplication tables check (MTC) in the Summer Term. The purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics. This means it is important for the children to learn their multiplication tables facts and to be able to recall them quickly and accurately.

We teach times tables using the following progression:

Year 1 – Be able to count in multiples of twos, fives and tens

Year 2 - Be able to recall 2, 5 and 10 multiplication and division facts

Year 3 - Be able to recall 3, 4 and 8 multiplication and division facts

Year 4 - Be able to recall 6, 7 and 9 multiplication and division facts

Year 5/6 - application of multiplication and division facts to problem solving

To support children's learning of multiplication tables, we have a Multiplication Table Challenge and children have access to Times Tables Rockstars. This is an online resource that Years 2-6 use to aid the teaching and fluency of Multiplication and division facts. We also learn multiplication tables through song.

Differentiation and Challenge: Children will be supported through: extra fluency, intervention, a CPA approach and skilful questioning. Children who are 'rapid graspers' or 'working at greater depth' in maths will be challenged through their explanations, through their responses to a problem and through careful questioning from teachers. Children will be encouraged to provide solutions to a problem in different ways; considering which is most effective and why. All children will receive the same questions during a lesson in most circumstances using the Mastery approach but this will be differentiated as all pupils will be able to answer a question using a CPA approach where as some pupils will be able to explain their answers and some will then be able to prove their answers beyond doubt (A. E. P). There will also be 2 'star challenges' available to further challenge pupils.

Growth Mindset: We promote resilience in maths so that children are problem-solvers. Growth Mindset is built into lesson planning and referenced by staff throughout the entire curriculum to develop confident, enthusiastic mathematicians.

Maths Curriculum: We instil the core National Curriculum aims of fluency, reasoning and problem solving, following the National Curriculum and are guided in planning by White Rose Hub.

Inclusion and Equal Opportunities: All children can and will succeed in maths. Our curriculum is fully inclusive and supports ranging needs and cultural diversity.

Intervention: Teachers use a same-day intervention approach to ensure that the learning remains relevant. They use assessment for learning within a lesson to identify pupils who need further support with a specific concept and immediately target those pupils with 'on the spot' intervention within that lesson. This can also be used to inform future planning and identify any pupils who need to further revisit a concept. Intervention should be delivered by teachers and/or teaching assistants when appropriate.

Speaking and Listening: As with the mastery approach, children are encouraged to become mathematically articulate – speaking in full sentences and using appropriate vocabulary. Children are encouraged to talk mathematically through the use of stem sentences, displaying key vocabulary, talk partners and through peers modelling accurate and articulate explanations. All lessons ensure the use of discussion between pupils is embedded within them.

Planning in Maths: We adopt the White Rose Hub curriculum (linked to the National Curriculum). Teachers plan weekly overviews, using a range of resources and publications that support a mastery approach. Teachers' planning is adapted according to the needs of the children on a day-to-day basis.

Teaching of calculation: We follow the progression of calculation as recommended in White Rose Hub. We ensure when pupils meet a new calculation concept for the first time, a CPA approach is used to introduce it. At least one lesson should be spent on using manipulatives alongside the abstract to build a solid understanding rather than simply learning how to do a concept. Calculations are constantly revisited using 'Core Four.'

Timetabling of Maths: Maths is taught daily. Lessons in KS1 are 45-50 minutes. KS1 Maths involves 15 minutes of Mastering Number sessions and daily 'Core 4' sessions. In Key Stage 2, we teach maths daily with lessons from 50 minutes to one hour, daily 'Core 4 sessions.' KS1 and KS2 have many other opportunities for promoting fluency and arithmetic outside of the daily lesson; linking to other subjects.

How do we assess Maths? Assessment happens daily through targeted questioning and diagnostic marking. Teachers use assessment for learning and our school specific assessment grids to indicate progress in maths and these are updated regularly. Termly assessments are given to children and these form part of the overall teacher judgement along with books. Work in books is marked with an 'S' to indicate if a child received lots of support to complete a task and this should be considered when assessing. Children are identified as working towards, within (at) and above Age Related Expectations (ARE).

Homework in Maths: Teachers occasionally set Maths home learning tasks such as Time table Rockstars.

Involvement of home: Expectations in Maths are shared with parents/carers at start of the year and updated at parent meetings.

Extra Curricula Maths:

Information and Communication Technology (ICT) in Maths: Maths is linked to Computing when applicable. For example, this could be using a specific programme to create and interpret graphs in statistics. Times Tables Rockstars and other interactive Maths games are used when appropriate to engage and enthuse all pupils. ICT is also used as an effective teaching tool during most lessons. For

example, it can be used through modelling online manipulatives to explain a concept pictorially (i.e. through using Mathsbot).

Resources in Maths: Mastery maths promotes a CPA approach to teaching and learning to support all pupils to achieve. Children have daily access to maths resources to support their learning and are given advice on the most appropriate resources to use for a specific concept. They are taught how to use the resources accurately and efficiently to support understanding. The use of a CPA approach also evidences differentiation and challenge for children.

CPD in Maths: Will be delivered by Maths Lead, key teachers, involvement in maths hubs and through the local authority. The CPD to be delivered is identified through our monitoring cycle as well as to deliver updates to Maths as a subject when needed.

Work and presentation: jottings and workings are promoted in maths. Children are encouraged to use models and images in their explanations. Work is completed in pencil with responses/corrections in green. There should be a digit/symbol per square with all straight lines drawn with a ruler. Calculations must not run into each other and one blank square should be left between question number and answer to eliminate confusion with numbers. Questions are provided in complete bookmarks and should be completed alongside rather than on the bookmark unless appropriate (for example when plotting coordinates). All pupils from Year 1 onwards have Maths jotters separate from their main Maths book for Core Four and for jottings/calculations/practise when needed.

Marking: Most marking is done 'live' during lessons. Teachers will respond to misconceptions as a whole class or through on the spot intervention. Pupils will also self-assess/peer mark. We do not encourage lengthy comments in Maths marking. Learning objectives will be highlighted green when children have been successful. Any pupil response with corrections, further explanations or peer marking is completed in green pen.

Evaluation and monitoring: There is a monitoring cycle for Maths through formal observations, performance management, pupil voice discussions, governor meetings, learning walks/drop-ins and work and planning scrutinies.

The Mathematics subject leader has the overall responsibility of monitoring the standard of pupil's work, the quality of the teaching and evaluating impact. The work of the subject leader involves supporting colleagues in the teaching of mathematics, being aware of current developments in the subject, and providing a strategic lead and direction for the subject in the school so that it remains high profile. The school leadership team (and subject leader) will observe mathematics lessons and give feedback, staff will be directed to relevant CPD to develop their skills and support and improve their practice. Work scrutinies take place at least termly to monitor progress and standards and for the purpose of moderation. The school participates in external moderation.

School governor role in Maths: There is a link governor allocated for the oversight of maths. Governors will be asked to join the monitoring cycle with SLT. Key documents/action plans will be shared when updated and regular meetings will be held with the link governor.

For further explanation or clarification of any item discussed in this policy, please see Maths lead Mrs Storey.