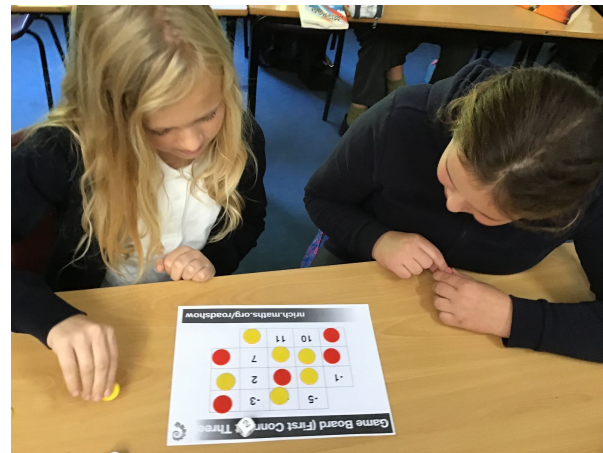
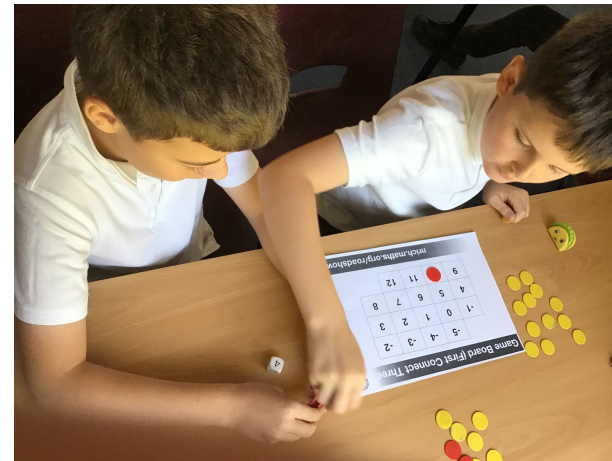
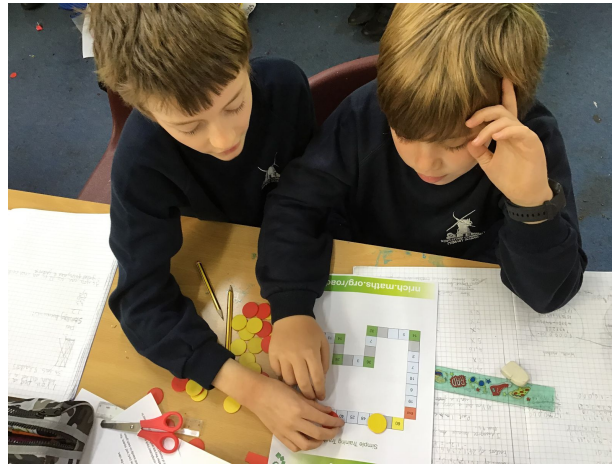


The mathematics curriculum at Stapleford Community Primary School



Maths - the Big Ideas

Fluency

Intent: Fluency underpins all areas of maths and confident manipulation of number supports the development of deeper mathematical thinking; we want all children to develop fluency with number and confidence in manipulating these facts.

- 'My maths targets'
 - Times tables
 - Lesson design
 - Daily fluency

Coherence

Intent: Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

- Small steps in planning
- Maths curriculum (White Rose)
 - NCETM PD materials
 - Yearly overview
 - Progression documents
 - Lesson design

Variation

Intent: Questioning and activities will provide variation (procedural and/or conceptual). Exercise that demonstrated variation provide the opportunity to practice calculation whilst at the same time thinking about the relationships within the mathematics. Students are encouraged to avoid mechanical practice and, instead, to practise the thinking process (intelligent practice).

- lesson design
- questioning

Mathematical Thinking

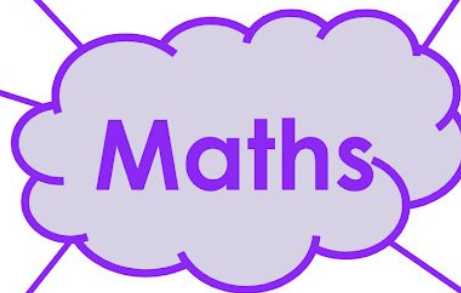
Intent: If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others. In all lessons children have opportunities for **problems solving** and **reasoning**. We are committed developing these skills outside of maths lessons so that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts.

- Lesson design
- activities that promote problem solving and reasoning
 - questioning
 - Nrich
 - Maths week/ visitors
 - Cross curricular maths

Representation and structure

Intent: Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

- manipulatives/ images
 - Bar model



Intent – why we teach what we teach

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At Stapleford Community Primary School, we provide a mathematics curriculum that enables children to engage in a pragmatic and creative way, fostering an enjoyment and curiosity of number and mathematical concepts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics. We understand that fluency underpins reasoning and problem solving and our curriculum and whole school approach reflects this. Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts. Skills are embedded within Maths lessons and developed consistently over time.

During a pupils' time at Stapleford, we provide a maths curriculum that is ambitious, challenging, stimulating and aspirational to all children. We ensure that all learners develop:

- Fluency
- Reasoning
- Problem Solving



We aim to provide children with a range of mathematical challenges and provide them with the opportunity to:

- Select appropriate representation and structure - Representations used in lessons expose the mathematical structure being taught; over time, the aim being that students can do the maths without recourse to the representation. Teachers use 'Build it, Draw it, Say it, Write it' to support this.
- Apply their mathematical and problem-solving skills practically, to enable them to become competent and assertive mathematicians in 'everyday' situations. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts.
- Become numerically confident children who can apply their skills in other subjects. Through our curriculum we introduce students to the stories of some of the most influential Mathematicians throughout history and the impact that their work has had on the world we live in. Real life applications of Mathematical ideas are made explicit to students whenever possible.
- Develop mathematical thinking - If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others. In all lessons children have opportunities for **problems solving** and **reasoning**.
- Have instant recall of important number facts - Fluency underpins all areas of maths and confident manipulation of numbers supports the development of deeper mathematical thinking; we want all children to develop fluency with numbers and confidence in manipulating these facts.
- Variation - Questioning and activities will provide variation (procedural and/or conceptual). Exercises that demonstrate variation provide the opportunity to practice calculation whilst at the same time thinking about the relationships within



mathematics. Students are encouraged to avoid mechanical practice and, instead, to practise the thinking process (intelligent practice).

- Foster an enjoyment of mathematics, number and problem solving - We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

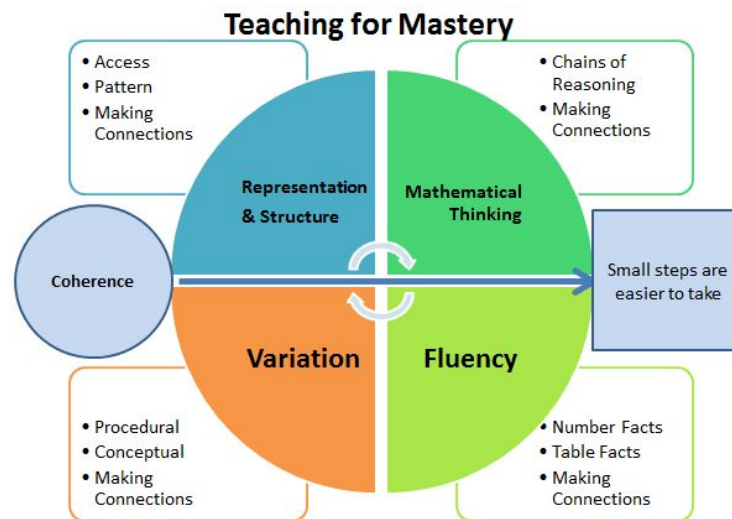
Implementation – how we teach what we teach

At Stapleford Community Primary School, mathematics is taught daily. In our EYFS curriculum, mathematics is covered in the 'Mathematics' Areas of Learning. Lessons are planned with a mastery approach - providing opportunities for pupils to develop fluency, reasoning and problem solving. Through careful analysis of the National Curriculum, we have translated the aims to ensure our curriculum is comprehensive and supportive. Our curriculum is structured upon the White Rose Scheme of Maths and we use the NCETM PD materials to support teacher subject knowledge and identification of the small steps needed in learning. We teach in a sequence that builds on prior learning and understanding while allowing for the flexibility to address misconceptions and provide challenge. As some topics (such as shape) appear less frequently, we aim to make relevant links across topics to deepen mathematical knowledge and long term memory. Mathematics is taught as an interconnected subject throughout the school where children are given the opportunity to apply their mathematical knowledge to other subjects in a way that enhances and deepens understanding rather than being an 'add on'. We monitor these cross-curricular math opportunities to ensure these sessions are aspirational in the maths expected and it is consistent with what is taught in class. We are looking into ways we can incorporate more math trails and outdoor maths into our curriculum.



Teaching for mastery

As a school we 'teach for mastery' and have developed close links with NCETM and the Cambridge Maths Hub to reinforce our expertise in this area. In lessons, pupils sit in mixed ability seats and teachers strive to reinforce an expectation that all children are capable of achieving high standards in maths and that the large majority of children can progress through the curriculum content at the same time and pace.



This is enabled by teaching being underpinned by cohesion; methodical curriculum design is supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge. Differentiation is achieved by emphasising deep knowledge, the manipulatives and representations used to reinforce understanding, cohesion and through individual support and intervention. Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts. Teachers use precise questioning in class to test



conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.

Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads children through the small steps in learning in a fluid structure; independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems. Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. Each lesson provides the means to achieve greater depth, with more able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate.

Impact – how we measure what we teach

The impact of our mathematics curriculum is that children will be mathematically competent and their primary education will prepare them for the practicalities of mathematics in everyday life and mathematics learning in KS3 and beyond. Within each lesson, children receive verbal feedback, support and extension; work is marked in line with our school calculation policy. Formative assessment takes place within each lesson (and after) which enables teachers to plan subsequent lessons to suit the needs of their class and individual children. These judgements inform planning, recap sessions, responsive guided groups, manipulatives/ representations, deployment of adult support and additional questioning to probe deeper thinking and extension among rapid graspers.

End of unit assessments (White Rose) take place slightly before the end of a unit to enable teachers to identify gaps in understanding and plan for these in the remaining lessons. Termly Nfer maths assessments are used to gauge an understanding of how well each child can apply their learning independently. These assessments are monitored closely by



teachers/SLT; our rigorous analysis and scrutiny of these assessments feed into subsequent planning and enables us to identify children who would benefit from intervention opportunities. The progress of each child will be tracked throughout their time at Stapleford Primary School through pupil progress meetings, assessment, tracking, performance management, moderation and standardisation. Individual personalised learning is planned for some children on individual learning journeys to ensure lessons focus on their personal goals.

When assessing how well our children are developing mastery in maths we consider what impact our intent and implementation has had on:

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics
- The ability to recognise relationships and make connections in mathematics

A mathematical concept has been *mastered* when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. This will be assessed using the assessment approaches highlighted above.



