

What does maths look like at South Cave CE Primary School?

We are on a journey at South Cave in our mathematical teaching. Since the new 2014 curriculum we have worked together to create an ethos where we believe that every child can achieve in maths. This is embedded in our strong belief for growth mindset. We have taken the new aims and we are fully embedding them into our lessons to ensure that children are confident and competent in mathematics developing lifelong skills which is built on conceptual understanding.

The TRG

Our maths lead and assistant maths lead are involved with the National Department for Education funded project – Teaching for Mastery. This has involved half termly teacher research group meetings working alongside 6 other schools from 3 different authorities. We are currently supported by a mastery lead from the Yorkshire and Humber Maths Hub. This is the first year of involvement and as a result we feel we are well on the way with our mastery approach at our school. The maths lead has delivered staff meetings informing other staff members of key messages from the Teacher Research Group (TRG) such as the idea of procedural and conceptual variation, use of concrete resources and bar modelling.

What is mastery at our school?

Mastery to us here, at South Cave, means every child achieving and succeeding. We no longer have traditional 3 way differentiation whereby groups of children are completing different work and objectives. Differentiation in mastery is by way of depth of learning. Our children begin each lesson together, as a whole class with a strong focus on teaching for understanding; we believe in teaching 'why' not just 'how'. Children will be given support and scaffolding from the teacher and/or teaching assistants (TAs) as necessary and these might be different children each day and even throughout the lesson. Teachers are continually assessing the children in the class during the lesson through carefully thought out questioning, answers and discussions with the children and during guided practice in their books. If any children progress rapidly through the work they will be given work which challenges their thinking rather than accelerating them through the curriculum and new content. This could be in the form of a question whereby they are asked to prove or explain their thinking in words or to another child. The National Centre for Excellence in Teaching Mathematics (NCETM) and White Rose resources are often used to provide depth to children's understanding tackling challenges and varied problems. Children who appear to be needing support are given a chance to go over the work again with a teacher or TA shortly after the main lesson and/or on the same day. The large majority of children will progress through the curriculum at the same pace.

In our maths lessons you might see:

- Use of concrete materials
- Use of images/models/representations
- Opportunities for reasoning
- Questioning
- Children using full sentences
- Carefully crafted questions
- Use of same day intervention
- Small steps – deeper learning
- Use of mathematical vocabulary

Lesson planning

The content of the lessons are planned to address the 3 aims of the curriculum; fluency, reasoning and problem solving. Teachers use resources from the NCETM, nrich, Maths - No Problem textbooks and the White Rose Maths hub planning documents. We have changed our planning documents across school to reflect the 3 aims and planning for mastery. There are prompts on the document to ensure that teachers are planning for

misconceptions, vocabulary and the use of CPA (concrete, pictorial and abstract) in every lesson. Teachers use questioning to assess where the class are and where support or depth is needed. Problem solving is still at the heart of our maths curriculum and children are exposed to varied, challenging problems working in groups or pairs to develop their communication and reasoning skills, applying their mathematical skills.

Concrete, pictorial, abstract

Rather than rote learning mathematical procedures children will have access to and use quality concrete materials such as base 10, Numicon and Cuisenaire rods. These resources should be used with all children across both key stages. Concrete materials are to help to explain and prove mathematical concepts alongside pictorial representations such as part-part whole models and tens frames leading on to the abstract.

Further improving our practice

At our school the staff, like the children, are on a learning journey too. We are continually trying to improve our practice through training, moderation and staff meetings. Issues and areas for development are identified from our most recent Ofsted inspection, the local authority reviews and through internal monitoring and then planned for in our school development plan. Our staff meetings are planned for the term ahead where the maths coordinator will lead discussions and training addressing objectives from the SDP (school development plan) and also passing information and up-dates from the Maths Hub. All staff are accountable for the implementation of mastery maths in line with the School Development Plan (SDP). Targets are set in appraisal meetings and performance is monitored through book scrutinies and lesson observations.