

Mathematics Cotherstone Primary School

At Cotherstone, we are currently on a 'Mastery Journey' to support a long-term, secure and adaptable approach to mathematics teaching, which supports learners to become resilient, working efficiently by making links between concepts and relationships. Our teaching is supported by the "The Big 5 ideas" based on the NCETM Maths Mastery training we are currently taking part in our second year within a inter-school Teacher Work Group.

Intent

At Cotherstone we believe children learn best by having opportunities to revisit previous learning. In Maths, lessons are sequenced to build knowledge, skills and vocabulary. We teach maths daily. Each lesson is planned to include the development of quick recall of number facts and an in-depth focused mastery lesson developing knowledge of concepts and procedures.

We aim to provide a high-quality mathematics education with a mastery approach so that all children:

- become fluent in the fundamentals of mathematics;
- reason mathematically;
- can solve problems by applying their mathematics

We believe the teaching of mathematics is underpinned by the following aims:

- Children can enjoy maths and realise that everyone can succeed in this subject.
- Basic number facts are learnt so children can work quickly and accurately.
- To develop conceptual understanding by using models, pictorials and concrete resources so that children understand the mathematics that they are learning and are not just taught 'tricks'.
- To highlight and utilise relationships between concepts and procedures.
- To encourage mathematical reasoning by following lines of enquiry, generalising and justifying using mathematical language.
- To apply mathematical understanding to problem solving by breaking down problems into simpler steps and persevering in seeking solutions using a range of strategies.
- To develop resilient children who are confident and enthused about mathematics who understand that mistakes are part of learning.
- To provide 'purposeful maths' through application of mathematical skills and knowledge to the world around them.

Implementation

At Cotherstone Maths is taught for a minimum of 1 hour a day. Learning is sequenced to build on knowledge, skills and vocabulary.

Mental maths skills are practised daily for pupils to develop fluency to become efficient in both new and previous learning. Teachers use Flash Back 4 resources to recap previous Maths topics. Previous learning is recapped within the starter of lessons.

A carefully planned learning journey of small steps is taken to ensure that all children can master concepts before moving on. Time is taken to embed these skills through the sequence of lessons. Lesson design ensures that the 3 aims of the National Curriculum are covered; fluency, reasoning and problem solving.

Good subject expertise allows the intentions of our Mathematics curriculum to be executed successfully. As a school we are currently enrolled within the second year of our NCETM Maths Mastery Programme, which allows two of our teachers to take part in a Teacher Research Group once a half term to share examples of good practice. This good practice is then shared between all staff and CPD is used to inform teaching and learning across school.

Staff have several materials to refer to for short-term planning including White Rose Maths, Classroom Secrets, NRICH, Busy Ants and NCETM Teaching for Mastery. These are used across school allowing for children to be exposed to a variety of different representations and problems.

Summative assessments are completed at least once a term. End of unit assessments are used to address gaps and to inform teachers planning. Formative assessment focuses on mini-plenaries and the ability to demonstrate understanding through reasoning and problem solving. There is coherent progression seen in planning within each unit to ensure learning is sequential and builds on previous knowledge, skills and vocabulary.

Activities in the EYFS develop knowledge and skills of key learning and allow children to problem solve and reason from an early age. Staff use the outdoors to enrich the Maths curriculum for EYFS, and beyond.

Mathematical vocabulary is referred to throughout lessons and is discussed at the start of the lesson to ensure understanding. Children are given daily opportunities to reason and solve problems. Mathematical discussion is essential to our learning and within lessons children have time for this to develop their learning and resilience in problem solving and reasoning.

Teachers develop fluency through practicing key mathematical skills within an arithmetic part of the lesson as well as in Morning Starter time. Times Tables Rockstars is used throughout the school to develop fluency in Times Tables.

Teachers find opportunities to apply Mathematics skills across the curriculum, for example, using graphs in Science.

Impact

The intended impact of our curriculum is that children:

- Can develop a love of maths
- Become fluent, competent and efficient mathematicians.
- Develop the ability to reason and problem solve, often using more than one approach
- Develop skills to use maths in real life

- Gain knowledge and quick retrieval of basic number facts
- Are able to learn from mistakes and are resilient