

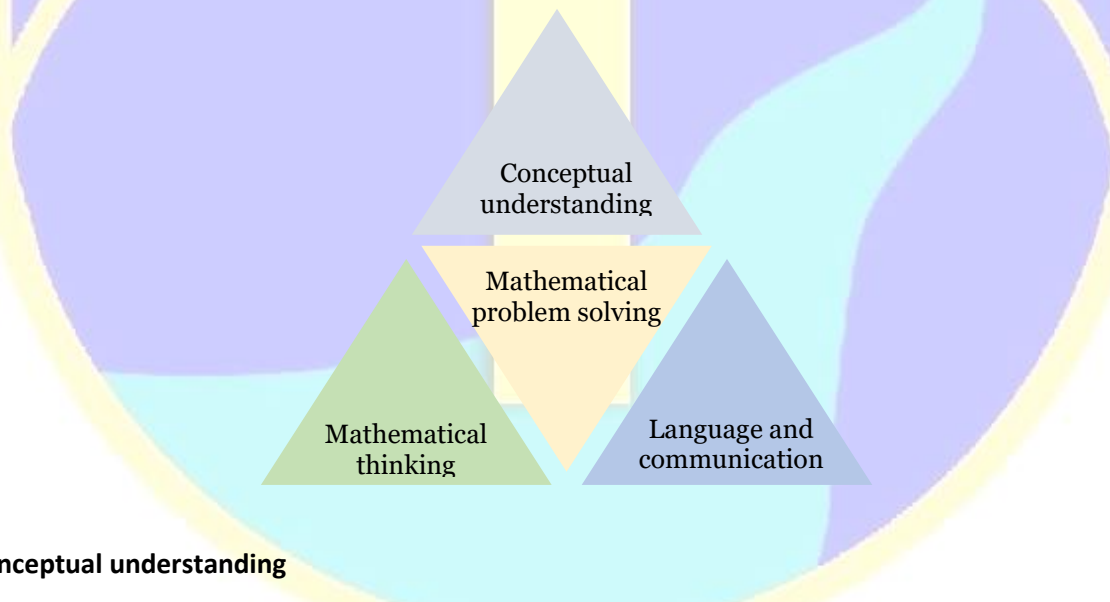
Mathematics: Pedagogy

At Emmaus, our aim is that our pupils should be enthusiastic and confident mathematicians. Children within our school should be able to work as part of a team and independently to use efficient written methods to solve equations for each operation, working with confidence and a depth of understanding. Children will have a range of skills developed through concrete and pictorial experience creating a fluency and understanding of the mathematical areas of study stated in the National Curriculum. Children will understand the importance of mathematics and will relate this to everyday life.

Our scheme of learning

Throughout school we base our lessons on [White Rose Maths](#). This scheme of work focuses on children developing mathematical skills that allow them to develop year on year and it is a well-structured cumulative spiral curriculum. Mastery in Mathematics is built on Bruner's Theory of Instruction (1963), which identifies three parallel systems for processing information: the concrete (or 'enactive'), the pictorial (or 'ikonic') and abstract (symbolic). Pupils explore and move between multiple interpretations of mathematical concepts so that a deeper level of understanding can be achieved. In mathematics this is known as the three dimensions of depth and White Rose Maths (WR) allows children to build these connections across all areas of Mathematics. This system of teaching and learning directly links into the goals of the National Curriculum and is therefore widely used across school to give children a deep understanding of maths as a subject.

The dimensions of depth



Conceptual understanding

Pupils develop a deep conceptual understanding, allowing them to make connections and draw comparisons. They can move between different representations (concrete, pictorial, abstract) and make links between them.

Language and communication

WR Maths promotes the use of mathematical language and allows pupils to gain a greater understanding of the signs, symbols and concepts of mathematics. Pupils are encouraged to explain their understanding and a range of sentence stems are used to promote deeper mathematical understanding.

Mathematical thinking

Tasks during each lesson allow pupils time to discuss and explore mathematics, therefore, promotes understanding and allows pupils to collaborate and work systematically.

Mathematical problem solving

The three dimensions of depth enable pupils to solve new problems in unfamiliar contexts. It identifies, applies and connects ideas, enabling pupils to tackle increasingly complex problems.

Our Teaching Sequence

Every child within Emmaus will have a daily mathematics lesson. Nursery and Foundation will have a structured maths session alongside mathematical opportunities for learning throughout the day. KS1 and KS2 will both have a 50-minute maths session 5 days per week alongside a 15-30 minute additional session to focus on mathematical understanding, activities and fluency.

From Y1 – Y6 all classes will have 5 dedicated maths lessons per week. Within the lessons we will aim to have a balance between teacher and whole-class input, group teaching and independent practise. Teachers will adhere to the maths scheme agreed by school (White Rose Mathematics) and staff will adapt and develop their lessons to meet the individual needs of their class. All lessons are to be recorded on a Medium-Term Plan (MTP), which has been put in place to support pupil needs and teachers curriculum development. The MTP will show any adaptations, changes and links to the [Ready to Progress](#) criteria.

Teaching staff will promote a positive attitude to mathematics; encouraging all children to work to the best of their ability and be proud of their learning. Children should be encouraged on their mathematical journey by reiterating that Maths is not just about a 'correct answer and a tick in a box' but it is about exploring and developing our knowledge and this is often done by getting answers wrong and then unpicking misconceptions. Children will be valued for contributing in lessons and a range of mathematical language and sentence stems are to be used throughout school.

A designated maths skills / maths toolkit session will take place daily in every class. These extra maths sessions will focus on the needs of the pupils. The length and time of the 'toolkit/skills' sessions will be decided by the phase and these sessions will be included on class timetables.

Developing our practice

As a school we are proud to be part of the South Yorkshire Maths Hub (SYMh). The South Yorkshire Maths Hub is one of 40 Hubs that work together across England to ensure maths is delivered consistently in schools. The programme is funded by the DfE and is co-ordinated by the National Centre for Excellence in the Teaching of Mathematics (NCETM). To further support the mathematical experiences of our pupils we continue as a school to invest in the training and development of our staff.