

# Mathematics Curriculum

**'Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers.'**  
Shakuntla Devi

At our school, we recognise the importance of mathematics as a tool for everyday life. We aim to deliver a rich, balanced and progressive curriculum, providing pupils with opportunities to use and apply mathematics in a variety of contexts. We aim for pupils to become fluent, competent, confident and resilient mathematicians.

Our four principle aims for Mathematics:

1. fluency (rapid and accurate recall and application of facts and concepts)
2. the ability to apply maths to solve problems and test hypotheses
3. a growing confidence to reason mathematically
4. to use mathematical terminology when talking about their learning

Mathematics is carefully structured, sequenced, fun and challenging. Teachers use the national curriculum alongside high quality resources from organisations such as White Rose, NCETM and NRICH to help plan sequences of lessons that support, stretch and challenge all learners. The subject overview outlines the sequence of units of work across a year within each year group. Teachers plan for fluency, reasoning and problem solving; pupils are actively supported and encouraged to apply their mathematical knowledge and understanding into a variety of contexts. This enables pupils to develop mastery in mathematics and draw links between their learning and the use of mathematics in everyday problems and challenges.

As a school, we recognise the importance of modelling mathematical concepts to pupils of all abilities. We place a high focus on the use of concrete manipulatives and pictorial representations, across all year groups, to support pupils in securing knowledge and understanding of newly taught concepts. This can include the use of counters, cubes, number lines and part-whole models. When the foundations are firmly laid, pupils can move to an abstract approach using numbers and symbols with confidence when they have a strong contextual understanding. Pupils have regular opportunities to practice, recall and embed key mathematical knowledge and understanding. This allows them to revise and revisit key facts, procedures and to make links to new learning.





We aim to broaden pupils' understanding of mathematical application through a context rich curriculum that gives purpose to their learning. All staff have high expectations for every pupil, ensuring that they meet their full potential. Through carefully planned and sequenced opportunities, children are provided with sufficient time to rehearse and embed new learning, whilst also revisit and revise prior learning. This supports pupils to remember their learning long term. We believe that it is important to encourage pupils to be confident mathematicians who are prepared to take risks and explore alternative strategies to solving problems. Resilience is fostered and recognised so that pupils develop a 'can do' approach to mathematics, facing challenges with perseverance and determination.

We deliver a broad and balanced mathematical curriculum including elements of number, calculation, fractions, geometry, measures and statistics. Unit plans support teachers to plan a sequence of progressive lessons, giving the children time to master new concepts. We focus not only on a range of methods but also focus on mathematical vocabulary to broaden and deepen understanding. Securing this vocabulary ensures that pupils are able to articulate their learning and discuss possible solutions to challenges confidently. Recognising the importance of number skills when accessing all of the mathematics curriculum, all children in years one to six have additional arithmetic opportunities each week – on top of their daily maths lessons – where they consolidate, revisit and secure knowledge of both new and previously taught skills. Skilled practitioners utilise these sessions to identify where pupils may have gaps in learning or misconceptions; once identified, teaching staff plan bespoke sessions to address misunderstanding and this enables pupils to move forward with a secure grasp of the knowledge and skills.

Securing pupils' understanding of times tables is fundamental to success in the mathematics curriculum, particularly in aspects such as fractions, decimals and percentages. As such, we deliver a bespoke programme of times table teaching. This teaching is delivered in designated times table lessons. Times tables are introduced to the pupils in a progressive sequence that builds upon prior knowledge; it directly teaches the pupils to identify related facts such as correspondence between  $4 \times 4$  and  $8 \times 2$ . Directly teaching these related facts, enables pupils to recall their times tables at pace.

Developing reasoning remains one of our key focuses. Children work both collaboratively and independently when solving problems which require them to persevere and develop resilience. Within lessons, children are actively taught a range of problems, encouraging them to become critical thinkers. Some of the types of problems include: word problems, logic problems, finding all possibilities, as well as problems involving rules, patterns or diagrams.

As a Trust, we are outward looking and collaborate with each other and external agencies such as NCETM Maths Hub, to continue to improve and develop our practice and as a result pupils' outcomes.

We have incorporated and adopted the 'Ready to Progress' documentation, produced by the Department for Education, into our curriculum, so that teachers and teaching staff are able to identify the core knowledge pupils need to be secure in, before moving onto the next unit and/or academic year. Using these documents, we ensure that pupils can make good progress through the curriculum.

Developing a good foundation of number is key for our early mathematicians. Mastering Number (a NCETM Hub project), is a programme which allows pupils to build on their number understanding so pupils can use and apply number facts quickly and efficiently rather than relying on counting alone. This programme has been implemented in all Trust schools Reception, Year one and Year two. Pupils develop this understanding by practicing their subitising skills (knowing how much of something there is without counting) and using concrete manipulative such as tens frames and Rekenreks to help them apply this understanding to build on their number facts. Stem sentences and gestures are also used to allow pupils to become more articulate when describing their mathematical understanding and justifications for their explanations.