Our Maths Curriculum

We believe that mathematical proficiency requires a focus on learning core mathematical knowledge and on applying mathematical skills fluently and flexibly. To achieve this, we take the children through three stages of learning:

1) Learning the skill: Teachers will recap what pupils already know, model new skills and methods, and provide opportunities to practise them, supporting as necessary initially, but moving the pupils towards independence.
2) Applying the skill: Once the skill is secure, children will apply their knowledge by tackling questions in different formats and contexts. For example, missing number questions or questions involving units of measurement.
3) Problem-solving and reasoning: Once the skill is mastered, pupils will show their understanding by solving problems in a range of contexts (e.g. applying fraction knowledge to questions about time, measures or money) and by explaining their reasoning (e.g. explaining how they know a given answer is correct or incorrect).

We believe that exposure to problem-solving tasks including reasoning challenges helps pupils to make use of relevant prior knowledge, break down problems into a series of simpler steps, choose appropriate strategies and then review and evaluate their answers in context.

In Key Stage 2, lessons will usually follow a teaching sequence over a two-day cycle that enables teachers to effectively use Assessment For Learning to immediately identify and address misconceptions. This approach also allows pupils time and opportunity to consolidate their understanding. A typical week may therefore look like this:

Day 1	Day 2	Day 3	Day 4	Day 5
Introduction of new skills leading to application questions	Skills teaching and application questions leading to problem-solving and reasoning	Introduction of new skills leading to application questions	Skills teaching and application questions leading to problem-solving and reasoning	Problem solving or arithmetic consolidation lesson

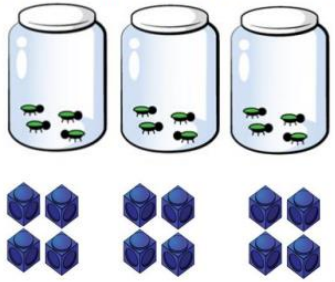
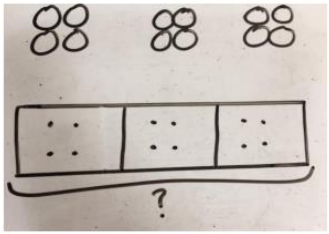
In Key Stage 1, small learning steps are taught with a tight focus through the same three stages. Pupils' learning is usually revisited as part of the next day's introduction and then revisited again as part of subsequent 'start of day' work. The children then have opportunities to apply their learning through regular problem-solving and reasoning activities.

Learning Environment

In all classrooms there are maths working walls displaying key vocabulary and information. They may also be a reference point for children showing modelled examples. Classes' interactive whiteboards will also display the key learning points for most lessons and children can access these if they need to see models of learning or good examples to support them in their maths work.

Maths Equipment

To help our children develop their conceptual knowledge of maths and to make their learning less abstract, teachers use maths equipment to support the learning. Pupils have access to appropriate manipulatives that they can use to model their learning. Sometimes, work with manipulatives will be followed by opportunities to represent problems as pictures, to help children to visualise the maths concepts. For many children, these concrete and pictorial tasks enable them to understand the concepts behind the abstract approaches they are taught to use.

Concrete	Pictorial	Abstract
Repeated grouping/repeated addition 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. 	3 × 4 = 12 4 + 4 + 4 = 12

Marking Stations

In junior classes there are also marking stations to allow pupils to self-assess and move on with their learning at their own rate. Children are encouraged to identify their mistakes and misunderstandings and seek a solution to them. In Year 2, pupils begin to learn how to use these.

Where relevant, our maths curriculum will help to reflect our three key aims.
Some possible examples are set out below:

Local Community 	Global Citizenship 	Effective Communication 
Our pupils will: • Use the school grounds and local area to support teaching and learning in maths where appropriate. • Hear from parents and other members of the local community about their working lives including real-life application of mathematics.	Our pupils will: • Learn to apply their mathematical skills and understanding across the curriculum e.g. temperature rises, population numbers, distances between cities and countries. • Learn how mathematics has helped to shape the world around us, e.g. the central role of mathematics in science and engineering.	Our pupils will: • Be given opportunities to regularly discuss and share their mathematical thinking with one another and their teachers. • Learn to reason mathematically, working both on their own and collaboratively. • Learn to use and understand the correct mathematical vocabulary to describe their learning.