

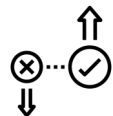


Subject on a page: Maths

At Leverington, we believe maths has a crucial role in our lives and a positive attitude towards the subject is essential for success.



Intent—We aim to...



Instil children and parents with a positive attitude and passion for maths and problem solving.

Create a safe learning environment in which children are free to take risks and make mistakes, understanding that these will help us to learn.

Ensure all children can recall number facts and develop their fluency skills to apply these to varied problems.



Nurture resilience and inquisitiveness for all children to become creative problem solvers.

Embed maths skills across the curriculum so pupils understand how to apply to real life contexts.



Develop a consistent approach to maths teaching in order to close any gaps and to target the highest number of children attaining age-related expectations.



Implementation—How do we achieve our aims?



White Rose Maths resources form the foundations of our maths teaching and learning from Year1—6. We use the long term overviews to sequence learning but teachers adapt the small steps to suit the needs of each cohort, ensuring children can recall relevant previous learning to build upon. Tasks and questions from White Rose Maths are carefully selected and supplemented with further resources from I See Maths, NRich and NCETM.



Our approach

Maths Mastery



We hold the view that all pupils are able to achieve age-related expectations given adequate time and support to acquire "a deep, long-term, secure and adaptable understanding of" maths. We actively engage with our local Cambridgeshire Maths Hub and staff across school have completed professional development opportunities.

Investing time

Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.

The Five Big Ideas: Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

The Five Big Ideas: Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

The Five Big Ideas: Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.

The Five Big Ideas: Variation

Variation is twofold. It is firstly about how teachers represent the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

The Five Big Ideas: Representation & Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

Concrete → Pictorial → Abstract

In order for our pupils to develop a secure understanding of each mathematical concept taught, we move between relevant representations using concrete manipulatives and associated pictorial images before introducing abstract elements that may be confusing without physical and visual prerequisites.

Fluency Learning facts to automaticity



Why? *Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.*

Mastering Number All children in Reception, Year 1 and Year 2 take part in Mastering Number lessons for 15 minutes, four days a week. Lessons use a familiar structure of stem sentences and Rekenreks in a 5-5 structure, reinforcing bonds in numbers to 20, to "secure firm foundations in the development of good number sense." Since we started this programme in September 2021 with the aim for children to leave Key Stage 1 "with fluency in calculation and a confidence and flexibility with number.", we have implemented the Key Stage 2 Mastering Number in Year 4* and 5 to develop their multiplicative understanding.

Application Making maths relevant



Problem Solving Once mathematical concepts have been taught and practised through varied fluency activities, children have opportunities to apply their learning to reasoning and problem solving activities. We encourage children to 'dive deeper' into concepts using prompts including: draw it, explain it, make a mistake, tell a maths story and prove it. We have purchased Gareth Metcalfe's I See Reasoning and I See Problem Solving for all available year groups to provide stimulating and challenging problems for pupils to tackle. The NRich website also provides investigations that can be explored individually, in groups or as a whole class.

Numbots & Times Tables Rock Stars It is important to us that children enjoy their maths learning and want to engage in activities. We subscribe to high quality, online resources developed by teachers for children to log into at home and at school to practise and develop their automaticity in recalling number facts. From Reception, children use Numbots where visual representations, procedural variation, exposure to different calculation strategies and interleaved material are carefully sequenced into a mastery approach to learning number bonds. From the end of Year 2, children have access to Times Tables Rock Stars where teachers can set daily times tables practice in individual or competitive games. Our Year 5 & 6 maths ambassadors support younger pupils with these during lunch time clubs.

Early Bird Maths To support continual retrieval practice, we use time before registration in the mornings for short fluency activities. Children use maths journals to answer questions on a unit from the last lesson, last week, last term and last year for spaced retrieval practice; this format is adapted for the needs of the pupils. Questions are then answered at the beginning of the maths lesson ready to move learning forward.

Super Hero Times Tables Children earn certificates by completing super hero themed tests, beginning with counting and number bonds in Reception, up to algebra and calculating with fractions designed for Year 6.

Maths outside of lessons To ensure all children understand that maths is a skill that can be applied in our day-to-day lives, we provide opportunities to use maths outside of its designated timetabling. We have termly maths weeks with themed days to explore maths in stories, nature and art. We also make explicit links to cross-curricular opportunities such as graphing and handling data in science, or measuring accurately in Design Technology.

Raising the profile All staff share a positive attitude towards maths to instil a passion for learning in all pupils. Our Year 6 pupils support this in their roles as maths ambassadors to run lunch time clubs for younger pupils. We celebrate achievements of individuals through Numbots, Times Tables Rock Stars and our Super Hero Times Tables. In 2022 and 2023, our classes were named after famed scientists and mathematicians to promote STEM subjects as a worthy career choice for any pupil.

Impact—How will we know we achieved our aims?

