

*“Mathematics is, in its way,  
the poetry of logical ideas.”*

*— Albert Einstein*



CVPS

# UNLOCKING MATHS:

A Guide to Maths at  
Chipstead Valley Primary School





Dear Parents,

At Chipstead Valley, we believe in fostering a love for maths and nurturing our young mathematicians. Our curriculum is designed to equip children with not just the necessary skills, but also the knowledge and understanding that form the foundation for comprehending the world around them. We aim to make our children fluent in fundamental mathematical concepts, ensuring they develop a deep and enduring grasp of procedures and ideas.

Our children are encouraged to think mathematically, to reason through problems, follow logical lines of inquiry, explore patterns, make predictions, and prove their decisions. These skills extend beyond maths, enriching their understanding in other subjects such as science, technology, and the arts, while also preparing them for practical applications in everyday life.

As a school, we adopt a mastery approach to maths teaching, which ensures every child has the opportunity to deepen their mathematical understanding, while making connections between concepts. Mastery in mathematics is more than just surface-level understanding—it represents a robust and adaptable grasp of mathematical principles that enables children to apply their skills confidently.

Our teaching, while aligning with the National Curriculum, emphasises fluency, reasoning, and problem-solving skills. The lessons include a range of mathematical representations, practical resources, and provide ample opportunities for children to express their mathematical thinking effectively. We adopt the Concrete, Pictorial, Abstract (CPA) approach, recognised for its effectiveness in fostering deep mathematical understanding among children.

# THE MATHS CURRICULUM

## MATHS LESSONS

At Chipstead Valley, we uphold a rigorous approach to mathematics education, primarily employing the Maths Mastery approach. This method fosters a deep understanding of mathematical concepts among our students.

Additionally, we incorporate planned investigation days, Growth Mindset activities, and regular outdoor learning experiences to further engage and support our children's learning process. Our curriculum emphasises the development of fluency, problem-solving, and reasoning skills through small-step learning and the Concrete, Pictorial, Abstract (CPA) approach.

Daily lessons are tailored to meet the needs of each age group, ranging from carpet time in Reception and Nursery to 45-60 minute sessions in KS1 and up to an hour in KS2. Moreover, our maths lessons are complemented by early morning maths work, Fluency Fun sessions (for years R, 1, 2, 4, and 5), and homework assignments, providing students with ample opportunities to reinforce their learning both inside and outside the classroom.

## THE LEARNING ENVIRONMENT

All classrooms have a maths Working Wall which includes topic specific vocabulary as well as key stem sentences to support children to verbalise their thinking.

'Washing Lines' also show prior learning from the previous lessons to help children with retrieval of knowledge.

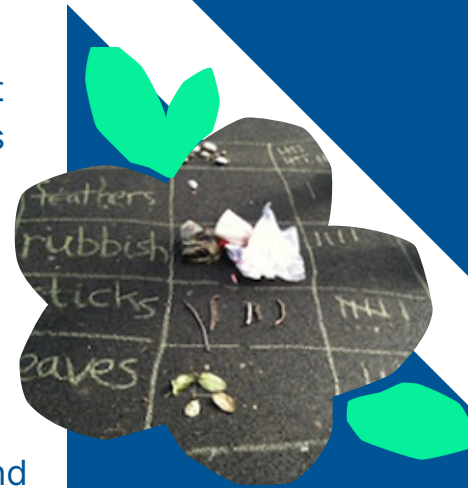
At Chipstead Valley, we aim for all children to be actively engaged, participating in a dynamic "ping pong" style interaction between teacher and student, fostering maths conversations and partner talk. Lessons employ a whole-class teaching approach, featuring high-quality modeling and varied questioning techniques.



# OUTDOOR LEARNING

At Chipstead Valley, we recognise the invaluable benefits of incorporating outdoor learning into our mathematics curriculum. Outdoor learning provides a dynamic and stimulating environment that engages students in a way that traditional classroom settings often cannot.

By taking mathematics outside, students have the opportunity to see real-world applications of mathematical concepts, making learning more relevant and tangible. For example, measuring the height of trees or calculating the area of a playground fosters a deeper understanding of measurement and geometry. Furthermore, outdoor learning promotes a sense of exploration and curiosity, encouraging students to actively investigate mathematical problems and discover solutions independently. This hands-on approach nurtures critical thinking and problem-solving skills, as students learn to adapt their knowledge to different contexts. By integrating outdoor learning into our mathematics curriculum, we provide a holistic and enriching educational experience that fosters a deep appreciation for the subject and supports the well-rounded growth of our students.



## MATHS DAYS AND CHALLENGES!

We host annual 'Maths Days' where students participate in challenges and problem-solving activities linked to various areas of the curriculum, including Science, DT, engineering, and art. These engaging days offer opportunities for children to excel individually and as a team, fostering a love for mathematics.

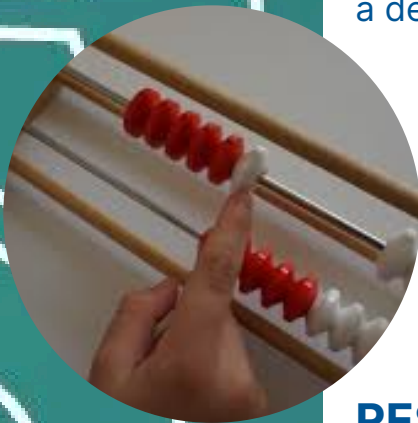
Additionally, we organise regular challenge days where students share their mathematical knowledge with peers across our trust through collaborative investigations and competitions. These events not only enhance mathematical skills but also promote teamwork, creativity, and a positive attitude towards learning.

## DEVELOPING FLUENCY: MASTERING NUMBER

At Chipstead Valley, the decision to adopt the Mastering Number programme in both Key Stage 1 and Key Stage 2 stems from a commitment to nurturing a strong foundation in mathematics for all our students. This programme is designed to develop solid number sense, including fluency and flexibility with number facts, which we believe will have a profound and lasting impact on their future learning.

In Key Stage 1, our aim is to ensure that children leave with fluency in calculation and a confidence and flexibility with numbers. By mastering basic number skills early on, students are better equipped to tackle more complex mathematical concepts as they progress through their education.

In Key Stage 2, our focus is to solidify children's understanding of number and to enhance their times tables knowledge. With a targeted approach, we aim for children to leave Key Stage 2 with a deep understanding of all necessary multiplication facts.



## RESOURCES

Practical resources like Dienes, counters, cubes, place value counters, Numicon, and number lines are vital in primary mathematics teaching. They provide hands-on experiences that help children grasp abstract concepts easily.

These resources are accessible to all, promoting inclusivity. By using them, children explore mathematical structures, fostering deep understanding. For example, Dienes blocks aid in understanding place value, while Numicon enhances visual representation of numbers. These resources make learning interactive, engaging, and effective, enabling children to develop strong mathematical foundations.

