Surrey Hills All Saints
Primary School

THE GOOD SHEPHERD TRUST
Diocese of Guildford

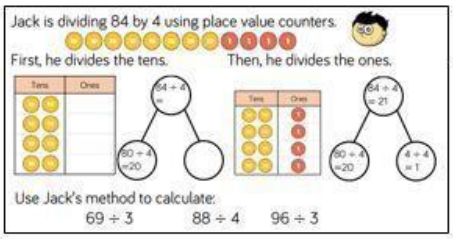
**Maths at Surrey Hills All Saints**

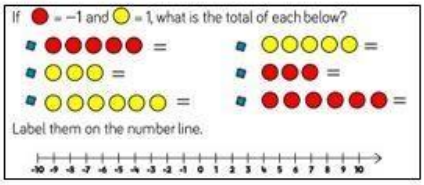
Intent, Implementation and Impact

## Intent

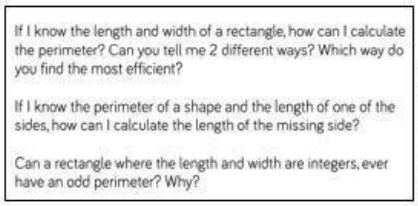
At Surrey Hills All Saints we want pupils to develop a deep, thorough understanding of mathematical concepts and skills. Across lessons children become fluent in the fundamentals of maths and develop their reasoning and problem-solving skills, in turn gaining a secure and long-term grasp of key ideas. Using the White Rose approach, we want children to become:

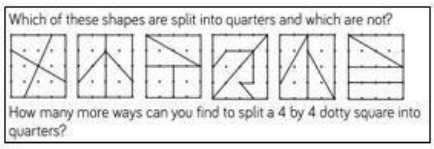
**Visualisers** – we use the CPA approach to help pupils understand mathematics and to make connections between different representations:



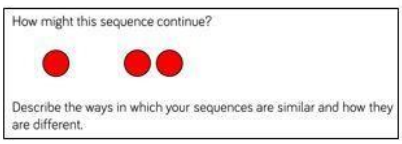



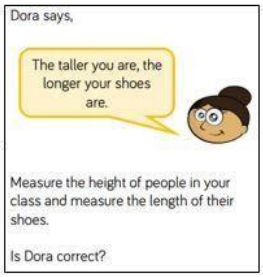

**Describers** – we place great emphasis on mathematical language and questioning so pupils can discuss the mathematics they are doing, and so support them to take ideas further.




**Experimenters** – as well as being fluent mathematicians, we want pupils to love and learn more about mathematics.



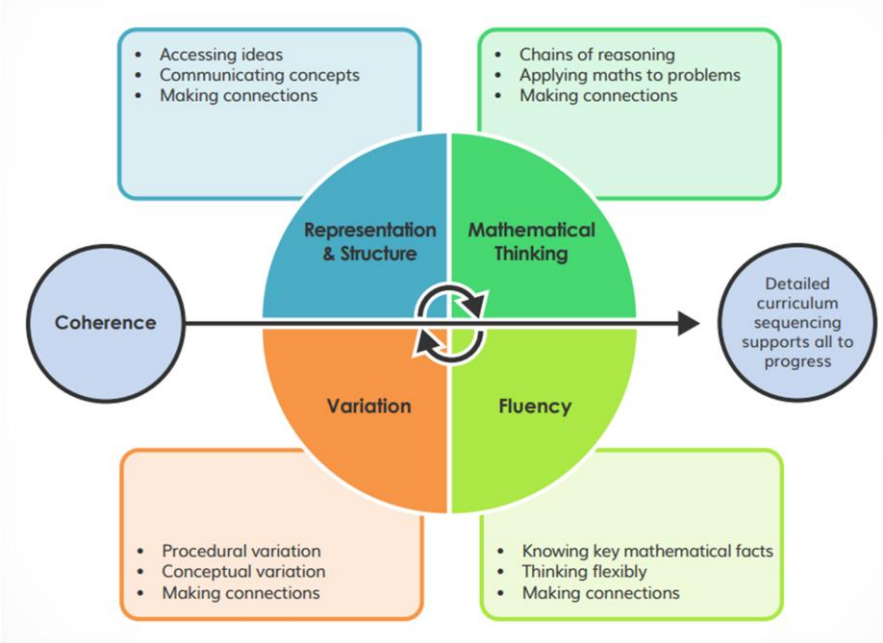

As a school, we aim to develop mathematicians of the future, where maths is enjoyed by all, challenges are accepted and solved, where mistakes are recognised as part of the learning journey and where a deep and rich mastery understanding of maths is an opportunity for all.

We believe that we are part of a longer journey with maths, changing old mind-sets and attitudes towards mathematics and shaping new thinking for the generations to come. We want children to learn, live and love maths as they understand its importance within our world.

Teaching Mastery is a transformational approach to maths teaching. When taught to master maths, children develop their mathematical fluency without resorting to rote learning and are able to solve non-routine maths problems without having to memorise procedures. Simply, maths lives within them.

## Implementation

A central component in the delivery of Mastery Maths is to develop 5 key areas: fluency, reasoning, problem solving, representation and cohesion.




*Credit to NCETM*

The 5 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.

**Representation and 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.

**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.

**Fluency**

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

**Variation**

Variation is twofold. It is firstly about how the teacher represents 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.

To provide wholesome Mastery teaching, we aim to feature all 5 ideas within every maths lesson.

We deliver maths through the Premium White Rose scheme of work. Years 1 – 6 each have a workbook and reasoning book to record their Fluency, Reasoning and Problem Solving. Through our investment in White Rose, teacher's planning, resources and children's activities are already prepared by White Rose, supporting teacher's workload and ensuring that maths has a consistent high expectations approach across the school.

EYFS follow Master the Curriculum which complements White Rose. An explicit 20 minutes maths input is taught every day, with then carefully planned provision activities set up around their learning space ready for them to 'move into'. Maths learning in EYFS is practical and aims to develop a strong understanding of number sense. Maths in EYFS is about discovery, making connections and embedding a strong understanding of the early key concepts of maths. The initial weeks of the autumn term in Year 1 mirror similar learning setups as Reception.

Each lesson starts with a learning question which immediately begins the children's metacognitive journey. This encourages them to take responsibility for their own learning. Through engagement and discovery in the lesson, children are then able to answer the learning question at the end of the lesson in a self-evaluation, which develops their reasoning around the maths.

We value the importance of developing an equal balance between procedural and conceptual understanding. It is important that children know how to complete the maths but equally, it is important they know how and why the maths works. We encourage reasoning throughout the lesson, largely through open ended questioning but it is also featured when the children complete their self-evaluation at the end of each lesson. This gives the children an opportunity to dive deeper into their mathematical thinking.

Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject. We provide this to all pupils who have the potential to meet their year group's objectives by supporting them through the CPA (concrete, pictorial, abstract) approach. We accelerate able learners by diving deeper in their understanding and exposing them to greater variation, reasoning, representations and problem solving.

We support struggling learners through pre-teach activities which introduces children to up and coming content as well as same day intervention which catches learners who had misconceptions in their lesson. We value the importance of unpicking these misconceptions before moving onto the next step in learning.

We recognise the importance of motivating children in their learning. We support children further by providing Times Table Rock Star and Doodle Maths accounts for all children so that they can continue their learning journey in their own time. We reward these efforts weekly by having Times Tables Rock Stars and Doodle Maths champions.

**Impact**

The potential of this impact is very exciting. We are proud to be part of a movement that is changing a generation's thinking, belief and attitude towards maths. Children will grow up with the growth mind-set belief that, 'learning is a journey, challenges are to be embraced, mistakes are good and a necessary part of the journey when we learn from them, effort is the pathway to mastery and we find inspiration in the success of others.' This attitude will shape the way children view mathematics and enjoy mathematical challenges the world provides.

As a school, we feel this in every lesson. When speaking with children about maths, we hear their excitement, inquisitiveness, wonder and buzz towards learning.

Children leave Surrey Hills not just Secondary ready for maths but world ready, equipped with a set of Primary mathematical skills and knowledge that will continue to support their mathematical thinking at Secondary and beyond.

Maths attainment, both formative and summative, and progress for each year group is recorded using Arbor and, in line with The Good Shepherd's assessment policy, there are 3 assessment points across the academic year. NFER testing and analysing is used to additionally inform teacher judgements. Maths lead and SLT analyse this data.