

Maths at Surrey Hills All Saints

Intent, Implementation and Impact

Intent

At SHAS, the intention is to develop each pupil individually and personally and to promote curiosity, confidence and enjoyment of mathematics. Through an engaging, inclusive and creative curriculum, children cultivate rich connections across mathematical ideas in order to develop fluency, reasoning and competence in solving increasingly sophisticated problems. Skills are developed consistently over time, with a clear progression throughout the primary years. These skills are further embedded through application within science and the wider curriculum. At SHAS, we are committed to ensuring that children are able to recognise the importance of maths in the wider world through an inclusive curriculum and that they are able to apply their knowledge confidently in their lives within a range of different contexts.

Aims

The National Curriculum for Mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Implementation

Planning: Planning at SHAS is conducted as a phase. In addition, each class teacher adjusts this outline for their own children's needs. Planning also gives guidance as to LSA expectation. A Long Term Plan is followed in order to ensure full coverage of all areas of the maths curriculum. During some periods, due to need to share resources, weeks may be swapped but the amount of allocated time for each area should be adhered to.

Range of Tasks: At SHAS, a prescriptive scheme of work is not followed. Instead, a wealth of high quality resources is used and considerable care is taken to ensure tasks are varied, meet the year group expectations and challenge all abilities. Planning draws upon resources from many providers such as: White Rose, NCETM, NRICH and Test Base. Children are encouraged to frequently engage in mathematical discussion (talk partner or group work), as well as investigations, problem solving, practical experiences and written methods. Where significant gaps are identified, resources such as: 'Power of..' and '5 Minute Box' are used to provide interventions.

In order to become fluent, be confident to explain and reason mathematically and solve problems, children are regularly exposed to opportunities involving increasingly complex problem solving which allows them to apply their Maths knowledge. In doing so, they are encouraged to develop an argument and line of enquiry in which they can prove and justify using mathematical vocabulary. This includes the ability to break down problems, both routine and non-routine, into a series of steps. Children learn to articulate their findings, both verbally and written, using appropriate mathematical vocabulary.

Counting: Counting is a daily activity in all year groups. Counting can be carried out at any time during the school day and does not necessarily have to take place during the maths lesson.

In **EYFS** children become familiar with **numbers 0-20**.

In **Key Stage 1** children become familiar with **numbers 0-100**.

In **Key Stage 2** children move on to much **larger numbers, negative numbers, decimal numbers** and learn about the **patterns in our number system** (prime numbers, factors, multiples, etc.).

Resources: All classrooms have age appropriate resources readily available for children to access. Children are encouraged to independently select resources which they feel would be beneficial to help them when completing Maths work.

Each classroom is resourced with materials to support the delivery of Maths; such items might include Numicon, Dienes (base 10), place-value counters, number lines, multiplication tables, 100 squares, 2D and 3D shapes, multilink cubes, dice and other smaller items. Larger materials such as scales, metre sticks and measuring are held centrally.

Times Tables: The school subscribes to Times Tables Rockstars (from Year 2 onwards). Children are encouraged to use this regularly, both within school and at home, in order to build both accuracy and speed. All children should have secure knowledge to 12 x 12 by the end of year 4, with children undertaking the national Multiplication Check in the Summer Term. Additional support can be encouraged through other sites such as Purple Mash and Hit the Button.

Presentation: Presentation in all subjects is important and these high expectations are also expected in mathematical work.

Expectations of acceptable presentation include:

- Using a ruler for all lines
- Writing one digit per square
- Spelling mathematical vocabulary accurately
- Using neat, joined handwriting when verbalising reasoning

Displays: Each classroom has a display dedicated to Maths. This should include modelled methods for current learning and mathematical vocabulary. Examples of children's work, challenges for the more able and suggestions for support should also be displayed. The maths board should be regularly updated to ensure it is effective and reflects the children's current learning.

Assessment:

- Continual assessment informs the teaching and learning sequence.
- Feedback is given on children's learning in line with our feedback policy. Verbal feedback is known to be more effective than written.
- Formative assessment within every lesson helps teachers to identify the children who need more support in order to achieve the intended outcome as well as those who are secure and require a challenge.
- Summative assessments are completed once a term and gap analysis of tests is undertaken and fed into future planning.
- Working with SLT, key data is analysed and regular feedback is provided, to inform on progress and future actions.

Events

A dedicated 'maths week' takes place every other year (with Science week taking its place on alternate years). During this time, children take part in workshops, problem solving and practical tasks and celebrate the subject of maths. Also, we invite visitors to share how they use maths in their everyday lives and careers.

In addition, parents are invited to attend workshops where we explain current teaching strategies and methods. Other recent events include local companies running workshops and year 5 planning and running a summer fair.

Impact

As a result of our Maths teachings at Surrey Hills All Saints, the impact will be:

- At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD).
- Engaged children who show a passion for Mathematics and are challenged to meet their full potential.
- Confident children who are able to articulate their ideas using a range of mathematical vocabulary and make links between different aspects of maths.
- Children who are unafraid of mistakes
- Lessons that use a variety of resources to support learning.
- Different representations of mathematical concepts.
- Learning that is tracked and monitored to ensure all children are making good progress.

Pupil Voice

Children talk enthusiastically about their mathematical learning. They understand the importance of maths and how it is used in the real world. Children are able to clearly articulate what they have learnt, how they have progressed, what their next steps might be and are proud of their work.

Evidence in skills

Children are taught to...

- Use a variety of strategies to help with problem solving.
- Develop the ability to recognise relationships and make connections in maths lessons.
- Develop a rich network of mathematical knowledge.
- Use flexibility and fluidity to move between different contexts and representations of maths.
- Develop independence, curiosity and motivation.
- Challenge themselves, show resilience, and to learn from mistakes and misconceptions.
- Use acquired vocabulary in maths lessons.
- Show a high level of pride in the presentation and understanding of the work.