Maths

Curriculum is derived from the Latin word 'currere' and our curriculum is therefore the 'path' we want our children to take on their journey with us through All Saints.

Intent

We want to stimulate children's natural curiosity through our knowledge and skills-based curriculum and encourage each and every child in our care to develop a passion and a love for learning mathematics, where they are not only able to see how maths provides a foundation for understanding the world around them now, but how mathematical literacy will empower them to be constructive members of our society in the future. With our mastery approach using White Rose Maths, and our focus on acquiring fluency through the Effective Maths Securing Fluency Programme, we seek to encourage all our children to be determined and fearless mathematicians, who can efficiently apply procedures and conceptual understanding to solve increasingly complex problems. We aim to guide all our children to becoming responsible individuals, who make well-founded decisions grounded in mathematical understanding and who, one day, will contribute positively to a modern workforce where mathematics is essential.

Our maths curriculum has been designed to ensure every child:

- Becomes **fluent** in the fundamentals of mathematics and can recall and apply knowledge rapidly and accurately, through varied and frequent practice
- **Reasons mathematically**, following lines of enquiries and using mathematical language to justify and prove
- Can **solve problems**, applying their knowledge and skills and persevering to find solutions
- Is able to deepen their mathematical understanding across our wider, synergistic curriculum

Implementation

All teachers and leaders have a firm and common understanding of the school's maths curriculum intent and as such, are dedicated to the teaching and delivery of high-quality mathematics. To enable this, while also endeavoring to reduce teacher workload, we have chosen to use the White Rose Maths curriculum for our core maths lessons (5 1-hour lessons a week), enhanced by the Effective Maths Securing Fluency Programme (3 20-minute lessons a week).

The White Rose Maths mastery approach is a research-driven teaching and learning method that: puts numbers at the heart of every lesson; puts depth before breadth, ensuring knowledge is reinforced continually; encourages collaboration, with children progressing together and supporting one another in their learning; and meets the goals of the National Curriculum, with each lesson progressing through fluency, reasoning and problem solving. Each year group is taught a varied number of units throughout the year, each linked to number, measurement or geometry. The core elements of White Rose teaching are:

1. Workbooks that contain all the small steps (each unit's workbook is stored in a folder to clearly evidence progress across the course of a year). These workbooks ensure

that every lesson includes a range of concrete, pictorial and abstract representations, beginning with fluency skills and building up to reasoning and problem solving. The workbooks will showcase adaptive learning, with some children's focus being on securing fluency through the earlier questions in the workbooks. Others will be appropriately challenged by the latter questions in the workbook, while some will be pushed further through extra challenges that push and extend.

2. Schemes of learning, which give teachers clear guidance on how to approach the unit of work. Each scheme of learning clearly details each small step with: notes and guidance about the content and progression; things to look out for, so that teachers are ready to address misconceptions; key questions, to ensure quality questioning throughout lessons; possible sentence stems, to support with mathematical vocabulary acquisition; National Curriculum links, so teachers have a secure understanding of how each lesson fits in to the wider curriculum; key learning, to inform quality-first teaching; and reasoning and problem solving, for how to challenge children further.
3. Optional PowerPoints, which are created based on the 'key learning' from each small step and are adaptable, so teachers can edit to suit their cohorts and the prior learning; each PowerPoint includes a starter to get the children ready for the lesson.
4. 'True or false?' questions are used at the end of every lesson as an assessment for learning strategy.
5. End of unit assessments are used at the end of every unit in Years 3-5 and at the discretion of the Year 6 teacher (due to regular SATs assessments) to assess the children's understanding of what has been taught in each unit.
6. Quality marking that celebrates, progresses, pushes or challenges children.
7. 1:1 conferencing with children whenever possible to address misconceptions and plug gaps.

The Effective Maths Securing Fluency Programme secures necessary declarative knowledge to enhance the children's confidence when solving problems; in addition, it helps teachers to further secure fluency of a core set of varied calculation methods. While number facts are at the heart of this programme, it also includes factual knowledge linked to measures and geometry. The focus of Effective Maths is not on written evidence, but instead on oral, hands-on learning using equipment and rough working out. Slideshows support the teacher in delivering the content of each maths fluency lesson clearly and precisely though a range of pedagogical approaches including:

1. Direct teaching slides that explain, demonstrate and model, with the teacher leading as the expert.
2. 'My Turn, Your Turn' slides are used to both introduce key vocabulary for the lesson and the objective of the lesson, with oral repetition and concise explanations.
3. Partner work: blues slides indicate that partner 1 takes the lead, while green slides are for partner 2. Teachers strategically arrange partnerships with partner 2 being more of a novice learner, so that they are exposed to the concepts more before giving it a go themselves. Partners mark one another's work and praise one another for morale. Red slides are both partners working together collaboratively.
4. True or false?/One word answer slides are quick-fire answers focused on whole-class choral response, where everyone can be successful together.
5. Independent work will occur when appropriate.

The foundational principles of both White Rose and Effective Maths are aligned with the Anthem Way. Teachers are adept at using the White Rose Maths scheme as a platform and adapting it to suit the needs of their cohorts. Effective Maths is a new resource; teachers receive quality CPD with Greg Wallace every half term to support with the delivery of this programme, including how to flexibly approach the planning so that it is bespoke to each unique cohort of children.

Impact

Through the quality-first teaching of maths taking place, children will have a foundation for understanding the world, an ability to reason mathematically and a curiosity about the subject. With on-going assessment opportunities questioning and ‘True or false?’ plenaries, teachers will be able to continually assess the formative impact lessons are having on every child. Children are assessed at the end of each core unit of learning in order to showcase their progress in the different areas of mathematics. Formal assessments take place across the year to see how the children apply a range of skills using either NTS or SATs practice papers. Book looks each half term act as a further evidence base for the impact of each unit of learning; learning walks each half term also see the quality-first teaching of both core maths and maths fluency in action. Ultimately, our curriculum develops inspired mathematicians, who can confidently talk about what they have learnt using subject specific vocabulary; they can speak enthusiastically about the importance of mathematics in daily life and how it inspires in them a curiosity to use it in their future lives.