**St Peter-in-Eastgate Infant School**

**MATHEMATICS POLICY**

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**Introduction**

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

**Taken from the New National Curriculum 2014**

**Aims and Objectives**

The purpose of this policy is to ensure that all staff are able to implement the teaching of mathematics to a high standard in order for our pupils to achieve to the best of their abilities.

Our objectives in the teaching of mathematics are:

* to promote enjoyment of learning through practical activity, exploration and discussion;
* to develop confidence and competence with numbers and the number system through rapid recall;
* to develop their conceptual understanding in order to solve problems through decision-making and reasoning in a range of contexts;
* to develop a practical understanding of the ways in which information is gathered and presented;
* to help children understand the importance of mathematics in everyday life.

**Context**

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems.

It is a core subject with a range of cross-curricular links but most often, is best taught discretely, using opportunities from other subjects to rehearse skills in a context.

Mathematics involves developing confidence and competence in number work; shape, space and measure; handling data and the application of these skills.

We aim to support children by equipping them with a range of computational skills and the ability to solve problems in a variety of contexts. This is achieved by using the Ages and Stages Bands for Early Year’s Outcomes for Mathematics in Foundation Stage and by using the White Rose Maths to guide planning, teaching and assessment in Key Stage 1.

Singapore is world renowned for its success in teaching mathematics. This is reflected not only in high test scores but in pupils' positive attitude to maths.  Singapore Maths develops pupils' mathematical ability and confidence by placing the emphasis on understanding and not rote learning. Singapore Maths is a method of teaching mathematical skills by encouraging problem solving in a visual way.

From January 2016, Years 1 and 2 began to follow the Maths No Problem! programme. This has been created specifically for the UK using the principles of Singapore Mathematics and is fully aligned to the 2014 England Maths National Curriculum.  The programme is a child-centred approach which is fun to teach and uses physical resources, problem solving and group work. The programme focuses on teaching for mastery.

During COVID we moved to White Rose Maths as could be easily implemented into home learning with the aim that we would resume Maths no problem in the future.

At the core of Singapore Maths is the CPA (Concrete-Pictorial-Abstract) approach, which builds up conceptual understanding from practical starting points, while mastery learning ensures that all pupils have a solid foundation before moving on.  The persistent development of a strong number sense gives pupils the fluency to make decisions without having to revert to just remembered procedures. Ultimately, pupils learn to solve complex problems that might otherwise seem impenetrable.

**Maths No problem**

**What does the programme consist of?**

* Two textbooks per year group which cover the English National Curriculum.
* There are two workbooks which align with the textbooks which give a daily assessment to the teacher.
* Online element with training videos and parent support videos.

**How are lessons compiled?**

The ‘In Focus’ section is always a very open problem solving task that leads them to explore ideas and start to think about what they already know and how it can be used.

The `Let`s Learn` section shows various methods on how the problem can be solved.

The `Guided Learning` section allows them to solve more problems with practical activities and is assessed by the teacher before moving on.

The `Workbook` allows them to make use of the knowledge they have gained from the lesson and is assessed by the teacher to ascertain whether the lesson objective has been achieved.

If the lesson objective is not achieved extra input will be given in the afternoon.

Each chapter has a Review at the end of it which assesses all activities taught throughout the chapter.

**Positives**

* Amazing methodology; children’s understanding is at a higher level.
* The lessons are planned carefully in small steps allowing most children to keep up.
* The textbooks have great visual representations which the children find easy to use.
* The variation of the tasks lead to a certain level of differentiation.
* Online resource is useful for planning and the training videos are great.
* Access to parent videos which can be placed on your website.

**White Rose Maths**

The White Rose Maths SOLs are **designed to give sufficient time for teachers to explore and understand concepts in depth**, rather than covering it superficially and then returning several times. ... This practice and consolidation helps children to grasp the links between topics and to understand them more deeply.

**Leadership and Management**

The subject leader’s role is to empower colleagues to teach maths to a high standard and support staff in the following ways:

* By keeping up to date on current issues; disseminating relevant information and providing training for staff members (either directly or through other professionals)
* Leading by example
* Having a knowledge of the quality of mathematics provision across the School
* Identifying and acting on development needs of staff members
* Monitoring expectations, provision and attainment across the school and providing feedback to develop practice further in order to raise standards.
* Providing necessary equipment and maintaining it to a high standard.

**National Curriculum**

The Early Years Foundation Stage Curriculum feeds into the new National Curriculum and the revised Primary Framework for mathematics. It is good practice to make use of cross curricular links to enable children to use their learning in a real life context. Therefore pupils should be given plenty of opportunities within sessions to use and apply the mathematical skills andconcepts they have learned.

The school’s calculation policy has been created to provide continuity throughout the school with all four operations, which in turn will facilitate measured progress for children in school.

**The teachers will:**

* Have a good knowledge of how White Rose Maths fits into the New National Curriculum and the statutory requirements for the teaching of number and place value, addition and subtraction, multiplication and division, fractions (including decimals and percentages), measurement, geometry (position and direction and properties of shapes), statistics and algebra
* Have a clear understanding of the objectives being taught, openly sharing these with support staff and children.
* Provide a balance and variety within the classroom of content and organisational learning opportunities for the children.
* Assess and plan for the specific needs of the children within their own class whilst adhering to the progression laid down in the New National Curriculum 2014
* Consider the opportunities for developing mathematics skills across the curriculum.
* Plan for well-paced lessons which drive learning forward.
* Provide a wide range of opportunities for developing literacy skills across the curriculum.
* Plan for the effective use of computing to enhance teaching and learning.
* Plan for the skills that children develop in mathematics to be linked to, and applied in every subject of the curriculum enabling children to be able to communicate and express themselves in all areas of their work.

**Special Educational Needs**

All children will have their specific needs met through differentiated work in conjunction with targets. TA support time is planned for and provided in relation to identified needs for individuals and groups

**Implementation**

We carry out curriculum planning in mathematics in three phases (long-term ,medium-term and short-term). Our mathematics curriculum is delivered using the new Early Years Learning goals and White Rose Maths . This coverage is reviewed continually by class teachers.

**Resources**

All classes have access to the appropriate resources for their varying topics of learning in Maths. When additional resources are required, further items are ordered through the Maths subject leader.

**ICT**

Information and Communication Technology can enhance the teaching of mathematics significantly. It has ways of impacting on learning that are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. A range of software and hardware (ipads with maths apps, laptops and desktops) is available to support work across the school.

**Assessment, Targets and Recording**

Assessment for Learning is fundamental to raising standards and enabling children to reach their potential. Assessment in mathematics takes place daily using a range of strategies such as marking and feedback of work and verbal discussions with children which often takes place in daily intervention sessions during a Maths lesson. This information informs subsequent planning and next steps in teaching and learning.

Data is used by the Maths Subject Leader and Head Teacher to review progress

The outcomes of regular assessments are recorded by the end of year assessments for Year 2 combined with the teacher assessment.

**Assessments specific to year groups:**:

Foundation stage Attainment on entry

Early Learning goals

Age and stage bands for Early Years Outcomes

White Rose Maths

Year 1 – White Rose Maths

Year 2 - White Rose Maths

End of year tests

**Monitoring and Evaluation**

The quality of teaching and learning is monitored as part of the appraisal process through lesson observations and monitoring progress and attainment towards end of year targets.

Continuity and progression across the school is monitored by the maths subject leader as is the implementation and impact of Assessment for Learning. Actions identified in the SDP and Maths Action Plan, intended to raise standards, are also monitored for implementation and, when appropriate, impact.