THE ROCHE SCHOOL
Mathematics Policy

This policy which applies to the whole school is saved on the school shared system and upon request a copy (which can be made available in large print or other accessible format if required) may be obtained from the School Office.

Information Sharing Category	School Shared System (Public copy provided on request)
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Responsible Area	Lee Murphy

Purpose:

"Mathematics is the queen of the sciences and number theory is the queen of mathematics."

(Johann Carl Freiderich Gauss, 1777 – 1855)

Mathematics is a creative and highly interconnected 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, and appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (New National Curriculum Framework Document, 2016).

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.

The expectation is that the majority of pupils will move through the programmes of study a t broadly the same pace. **However, decisions about when to progress are based on the security of pupils' understanding and their readiness to progress to the next stage.** Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material consolidate their understanding, including through additional practice, before moving on.

As part of the Independent sector, we also aim to prepare our pupils for the 11+ examinations or entrance examinations into selective Secondary schools. Children are taught in sets appropriate to their abilities and cover materials outlined in the ISEB 11+ Curriculum from year 5 onwards. *(see appendix)*

Teaching and Learning:

All teaching must be good, and in many cases outstanding. Underpinning all good or outstanding teaching in mathematics is the expertise and sound subject knowledge of the staff. Regular professional development, observations and training will help staff to:

- Deliver the school's curriculum thoroughly and consistently
- Enhance staff subject knowledge *(curriculum leaders go on PD courses and feedback via INSETs; we also invite consults into school to deliver INSET – most recently Nicki Ashton, the the Primary Maths Consultant for Wandsworth in September 2021)*
- Promote the use of high-level, varied mathematical language to promote justification, argument and proof
- Allow children to embed mental concepts from an early age, developing more confident, fluent mathematicians
- Demonstrate mastery of core concepts that pupils have applied in a variety of ways, over time
- Question children on their understanding and increase their ability to explain their reasoning and methodology
- Incorporate problem solving and challenge into every lesson
- Use mental maths throughout the lesson and developmental strategies for solving all mathematical concepts
- Use teaching assistants effectively to support, develop and assess pupils
- Embed number bonds for addition and subtraction to 20 by the end of year 2 and times tables fluidity and ensure all children have quick recall of tables to 12, by the end of year 4.

Early Years:

Work undertaken in the Early Years follow the Early Years 'Development Matters' EYFS document. All children are given ample opportunity to develop their understanding of the core concepts of mathematics. Lessons incorporate varied activities that allow children to use, enjoy, explore, practice and talk confidently about mathematics. A transition booklet is used to document pupil progress and help to prepare them for higher age range expectations, as set out in the new curriculum for Year 1 pupils.

Differentiation and Support:

Children are set according to attainment and needs across the school for mathematics. Setting helps to challenge age related knowledge, reasoning and problem solving with the incentive to deepen knowledge and understanding. Sets are fluid, and children can move up or down according to needs. All children will move through the curriculum at their own pace, via small differentiated targets.

This can be achieved through using a variety of approaches and resources, according to which suit the individual child's learning styles, for example concrete, pictorial and support.

Where necessary, we will implement timely support and interventions to help those children not making adequate progress. These interventions will be targeted towards individual needs, and delivered by qualified staff outside of class time. We will use standardized assessment tools to highlight areas of difficulty in mathematics and use targeted teaching to help close that gap and bring children up to expected level. Support will be delivered using one-to-one teaching, small group interventions or through computer programmes (including Dynamo Maths, Doodle and MyMaths). This support will be closely monitored by the Head of Mathematics and SENCo, and continual tracking will be put in place to see that progress is being made.

Enrichment activities are embedded into the whole school curriculum where all children can access higher-level thinking activities. Many children attend Challenge Days in the local community, STEM workshops and maths-related activity days. Chess, times-tables, and additional maths and STEM clubs (for example, Dr Alex's Club that uses mathematical concepts when investigating space for high-attaining pupils) run in school to enhance pupils learning and develop a passion for the subject. Specialist teachers also offer additional support and challenge across the school for high-attaining children.

Marking and Assessment:

The main purpose of the marking policy is to ensure that as children progress through the school, they benefit from specific guidance and feedback. Marking for learning and improvement is key, allowing children the time to read and reflect on their work. Pupils' work should be marked in line with the Marking Policy.

All assessment is used to inform teaching and learning. Assessment for learning is carried out continuously, through questioning, targeted work, and mastery assessments. Assessment for learning feeds into planning and adaptations to planning and tasks are made accordingly. Children have opportunities to self-assess their learning against the learning objectives regularly.

Summative assessment is used at the end of each term to provide further understanding and evidence of the level that a child is working at and to inform a more rounded judgement of their abilities. GL assessments are being introduced across the school to replace PUMA allowing for continual progress to be mapped internally. These assessments break down learning into key stands of the curriculum, highlighting for teachers which areas of mathematics each child is strong in or needs further support. This then feeds into future planning. Whole-school internal tracking is used to monitor progress, and termly pupil progress meetings are held within each year group to highlight

any children who need additional support or may need to move sets. We are currently assessing the effectiveness of this new assessment tool.

Calculation Policy:

We have a policy for progression in calculation methods to ensure continuity and consistency throughout the school. These include addition, subtraction, multiplication and division. This policy has been extensively re-written and updated in March 2021.

Dynamo Policy:

We have a policy to ensure that children highlighted in Progression Meetings as having gaps/issues with maths are screened in accordance with the Dynamo Assessment Programme. Those with which the programme suggests that Dynamo Intervention would be beneficial will follow a course of monitored intervention that will be reviewed each term. Please see separate policy for further guidelines.

Parents and Homework:

We recognize that parents make a significant difference to children's progress in mathematics and we encourage a positive partnership. Parents can assess relevant documentation on the school website (The Roche School Curriculum Policy, Calculation Policy, etc). Parent workshops are organized with relation to the maths curriculum and calculation policies, in order to support children's learning at home. All parents are invited to attend from all key stages. Regular parents' meetings are held to ensure parents are on-board with mathematics teaching and learning. Where necessary, further meetings are held with any parents who wish to discuss progress or support.

Please see the Homework Policy in regards to homework requirements in mathematics.

Other documentation to be read in accordance with the Mathematics Policy include:

- The new National Curriculum documentation 2014
- The Calculation Policy
- The Roche School Curriculum Policy
- The Marking Policy
- The Homework Policy
- The Assessment Policy
- The Dynamo Policy