

Round Hill Primary School



Dream, believe, achieve together.

Mathematics Policy

Updated by: Jodie Stephenson / Kathryn Naylor (May 2022)

MATHEMATICS POLICY

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INTRODUCTION

This mathematics policy is to be used together with the Schemes of Work for each year group, the Progression Map and the Calculation Policy. It is designed to highlight those areas and practices which we as a school feel are the most important to develop in order for each child to fulfil their mathematical potential.

INTENT

At Round Hill we provide children with a challenging and engaging Maths curriculum by offering a mastery approach, in order to deliver the three aims of the National Curriculum: fluency, reasoning and problem solving. Underpinning this pedagogy is a belief that all children can achieve in maths. We believe in promoting sustained and deepening understanding by employing a variety of strategies for teaching for mastery. Our approach aims to provide children with full access to the curriculum, enabling them to: develop their mathematical skills, processes and concepts necessary to solve the problems of everyday life; increase their ability to gain pleasure from being involved in mathematical activity including structured play activities, investigations and open-ended strategic games; and further encompass the five school values (Together, Daring, Persevering, Dreaming and Reflecting) to support them in reaching their full potential in Maths and in becoming a well-rounded member of the school community.

By the end of Key Stage 2, we want our children to have developed the necessary skills to make them 'deep thinkers'. Thinkers', acquiring mathematical knowledge, skills and understanding that can be recalled quickly, transferred and applied in different contexts. They need to be able to make rich connections across the areas of maths and use their knowledge in other subjects. We aim to create independent mathematicians who are well equipped to apply their learning to the wider world.

IMPLEMENTATION

At Round Hill We follow a mastery approach to Maths. This works on the basis that all children can master Maths. "Mastering maths" means that children understand the Maths they are doing, rather than simply learning how to do it. All children are given the opportunity to explore different Maths topics and some will work at a deeper level, developing their understanding of concepts and how to apply these. This is a very different way of learning maths, however by teaching children to understand what they are doing, they are much more likely to remember it and be able to apply what they have learnt to a range of questions.

Teachers and practitioners in the Early Years support children in developing their understanding of Mathematics in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. Children in the EYFS learn by playing and exploring, being active, and through creative and critical thinking which takes place both indoors and outside. We recognise that children learn through routine, continuous provision and incidental learning opportunities, as well as planned sessions and activities. This includes being given opportunities to seek patterns, make connections, recognise relationships, work with numbers, shapes and measures, and counting, sorting and matching. Children use their knowledge and skills in these areas to solve problems, generate new questions and make connections across other areas of learning and development.

In Years 1-6, we use the Maths No Problem series to support our teaching. This has been developed by experts and teaches concepts using a mastery approach. Children will be shown different methods for solving problems, using physical apparatus, drawings and more traditional methods. Each topic will start with children using physical apparatus and/or drawings, and move on to written methods. This is done to help children understand why written methods “work”. The Maths No Problem series follows the National Curriculum for Maths. More information about what your child will be taught in each year can be found in our Whole School Progression Map and the Schemes of Work documents for each year group.

Children will work through different methods as their understanding develops. The aim is for children to eventually be using the most efficient method, however they will reach this point at their own pace. Some children may decide to stick with using physical, concrete resources to help them answer a problem. They will be asked to have a go at other methods, but they may choose to go back to using equipment when working on their own. Some children will choose to use different methods for different questions. By teaching in this way, all children will have at least one method for solving a problem.

Our Calculation Policy shows the main methods children will be taught for addition, subtraction, multiplication and division in each current year group. We also use bar models to support children in solving mathematical problems. These help children to identify the calculation they need to do. More information about our use of bar models can be found in the Bar Model Policy.

Lessons will be planned and a knowledge organiser provided for pupils, which outlines the area to be taught, where the new knowledge and skills fit in with their prior learning, any sticky knowledge they need to understand and key vocabulary they need to learn.

Throughout their time in school, children should be given opportunities to:

1. Discover and investigate, to describe and to record the mathematical relationships they find.
2. Develop and use the numerical and other processes necessary for problem solving.
3. Organise and communicate their mathematical ideas through pictures, words, symbols, diagrams etc.
4. Use a wide variety of apparatus to support their learning throughout both key stages.

IMPACT

Impact is evidenced through:

- Mathematical Thinking: retaining and applying key knowledge; explaining processes; the ability to recognise relationships and make connections in mathematics.
- Fluency: quick recall of facts and procedures.
- Variation: the flexibility and fluidity to move between different contexts and representations and structures of mathematics.
- Vocabulary: pupils’ use and understanding of the identified mathematical vocabulary.
- High aspirations, which will see them through to further study, work and a successful adult life.

PRINCIPLES OF LEARNING

Children should be encouraged to:

1. Fulfil their mathematical learning potential by the fostering of high standards.
2. Gain confidence to enable them to work competently as a member of a group or independently.
3. Explore maths through first-hand experiences in different situations and across different areas of the curriculum.

TEACHER PLANNING

The National Curriculum (2014) decides what should be the content of our mathematics teaching. Progression in each area of Maths within and across year groups can be seen in the Progression Map. The school uses a mastery approach to Mathematics. EYFS use this approach aided by a variety of resources, while the Maths No Problem scheme is used as a basis for this teaching in Years 1-6. The Maths No Problem scheme ensures the overall coverage, continuity and progression of mathematics throughout the school, in line with the Progression Map. Short term planning done at year group level decides on the exact time spent and activities undertaken for

each objective, guided by the Maths No Problem Schemes of Work, as well as including regular mental work and recapping to be undertaken.

The teachers of each planning team decide on a common approach to the different mathematical work to be covered by that team in order to ensure that all children in parallel classes cover the same areas.

In addition, data-handling and practical maths are included where possible in a cross-curricular way. Investigations and problem-solving situations are encouraged at both key stages.

CLASSROOM DELIVERY

The structure of the daily maths session follows the principles of the four part lesson as promoted by the mastery approach: In Focus (anchor task), Let's Learn (modelling and scaffolding), guided practice and independent practice. Lessons are delivered using a concrete, pictorial, abstract (CPA) approach, which develops a deep and sustainable understanding of Maths.

The children will be taught with their year group peers. They will have opportunities to be taught and to work individually, collaboratively, in groups and as a whole class.

THE ROLE OF THE SUBJECT LEADER

The role of the subject leader is:

1. To promote the development of mathematics throughout the school and try to keep abreast of current developments.
2. To facilitate and support colleagues in the planning and delivery of the maths curriculum in the classroom.
3. To have responsibility for the management and ordering of resources.
4. To monitor the progression of mathematics throughout the school
5. To advise the Head Teacher and Governors about the development of mathematics throughout the school.

ASSESSMENT AND RECORDING

Children are taught a variety of methods for recording their work and they are encouraged to use the most appropriate and convenient method of recording. Recording work may involve the children using the Maths No Problem workbooks or their journals. All children are encouraged to work tidily and neatly when recording their actual answers but jottings may take any form and are important evidence for the teachers.

Children's work will be assessed as outlined in the school's assessment policy. This assessment will inform the future planning of the maths curriculum. Teachers will respond to children's work in line with the marking policy and the efforts made by each individual pupil will be valued. Children's progress will be monitored and recorded with reference to National Curriculum attainment targets, although not every piece of maths work needs to be individually assessed by the teacher. Their achievements will be recorded using Insight and reported to parents at the end of the academic year.

Termly assessments and end of Key Stage Audits, which includes the use of White Rose termly assessments and S.A.T.s materials, are undertaken and together with teachers' assessments are used to measure progression. The use of Insight will support the awarding of final attainment standards.

SPECIAL NEEDS AND DIFFERENTIATION

Work will be provided appropriate to children's individual needs and abilities. This will include differentiation by support and outcome through the use of some open-ended tasks that children can undertake at their own level. In extreme cases, children may be taught out of year group, however this will be avoided wherever possible.

EQUAL OPPORTUNITIES

Every child should have equal access to the maths curriculum regardless of gender, race and individual education needs. A multicultural approach towards mathematics will widen their mathematical knowledge and experience and highlight links with other cultures e.g. through pattern work, number games etc.

The use of apparatus needs to be carefully monitored to ensure equal access by both boys and girls. Books and other written materials must be scrutinised for gender or racial bias.

RESOURCES

The resources are divided into those most suitable for each year group or Key Stage, although some materials can also be used across the Key Stages, in particular to meet children's individual special needs. There are a range of both staff reference resources and other teaching materials to support the maths curriculum. These will be monitored and updated as necessary.

EVALUATION

This policy is intended to be a working document, it will be reviewed by staff regularly and amended as necessary. It will be used alongside the Maths No Problem Schemes of Work to inform the planning and delivery of the mathematical curriculum within school.