

# MATHS POLICY



**EXCEEDING EXPECTATIONS**

**This policy will be reviewed September 2023**

## **Introduction:**

This policy is set within the context of the school's vision, aims and policy on teaching and learning. It should be read in conjunction with the following school policies:

Calculation Policy  
Teaching and Learning practices  
Curriculum Policy  
Assessment Policy  
Marking Policy  
Equalities Policy

## **School Vision:**

At Warwick Road Primary School, our vision is to become an 'Outstanding School' with our mission to 'Exceed Expectations'. We endeavour to provide all of our children with the best opportunities to succeed in all areas of the curriculum and to develop in the social, cultural, moral and spiritual aspects of their lives too.

Our maths curriculum is specifically designed to equip our children with the mathematical skills needed to be fluent in all areas of the maths curriculum, the depth of knowledge required for application and the ability to reason and problem solve.

## **Rationale**

Mathematical understanding is critical to our children's future; it is essential that children are mathematically literate. Mathematics enables pupils to solve everyday problems. It provides a powerful means of communication and is essential to the study of other subjects. Maths is a language in itself - universal in its nature and we believe it is thus vital that children at Warwick Road School are mathematically literate.

We understand arithmetic is a key component of maths and that it extends beyond the four operations and involves an understanding of number. The structures and relationships underpin progression from counting in nursery rhyme to calculating with reasoning about numbers of all sizes, to working with measures and establishing the foundations for algebraic thinking.<sup>1</sup> We recognise that first hand experiences are essential precursors for learning traditional algorithms.

We inspire all children to 'exceed expectations' by ensuring:

- o Children have practical hands on experience of using, comparing and calculating with numbers and quantities.
- o There is an emphasis on place value across school.
- o Children are fluent in mental method, including recall of number facts.
- o Children have opportunities to solve problems enabling them to think critically and communicate their understanding.

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<sup>1</sup> Ofsted, 'Good practice in 20 primary mathematics: evidence in 20 successful schools' (November 2011)

- o Children have opportunity to practice and hone skills and methods.
- o Children are given the chance to apply learnt mathematical skills in different contexts across the curriculum.

The National Curriculum for mathematics describes the learning requirements for each year group. The statutory document, combined with the school's curriculum and calculation policy, ensures creativity, understanding and progression with high expectations for attainment and progress for all children. We aim to 'exceed expectations' and instil an aura of positivity encouraging pupils to foster confidence and achievement in mathematics.

We are committed to ensuring all pupils are literate and confident in mathematics and make genuine progress with any barriers to learning removed. At Warwick Road Primary School, we place an emphasis on Assessment for Learning, problem solving, place value, development of mathematical thinking and fluency in mental methods. Our teachers receive quality CPD that ensures development of teacher subject knowledge. As a result of this, the children are fully prepared to apply their skills effectively in their future learning.

### **Aims**

At Warwick Road Primary School, we aim to provide pupils with a rich and relevant mathematics curriculum and encompassed with this is high quality teaching that enables children to be both literate and confident in mathematics. We aim to help children by:

- developing confidence and competence with numbers and measures
- providing opportunities to apply mathematical learning to a range of real-life contexts and in a cross curricular manner
- fostering a sense of inquiry and an enthusiasm for mathematics within a problem solving context.
- encouraging them to communicate their mathematical ideas orally

To fulfil these requirements our pupils should:

- have a sense of the size of a number and understand numbers within place value
- have excellent recall of number facts including number bonds, times tables, doubles etc.
- make sense of number problems, including non-routine problems, and recognise the operations needed to solve them
- develop excellent mental methods
- identify, understand and select appropriate calculation strategies
- have the ability to use traditional written algorithms alongside other methods to calculate accurately and efficiently
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring, and make sensible estimates of measurements; explain and make predictions from the numbers in graphs, diagrams, charts and tables
- explain their methods and reasoning using correct mathematical terms

- develop spatial awareness and have an understanding of the properties of 2-D and 3D shapes
- use patterns and relationships in mathematics to solve puzzles and problems about numbers and shapes

### **Organisation**

The National Curriculum describes what should be taught within year groups. Warwick Road Primary School follows the statutory requirements.

### **Planning**

Alongside the National Curriculum, the school uses the ‘Power Maths’ scheme; this is supplemented by the White Rose Maths scheme of work. This scheme is annotated and adapted to meet the needs of learners. Long-term and Medium-Term plans are provided by the scheme but are tweaked to personalise learning.

Short-term planning identifies a clear learning objective and ‘remember to’ statements are created with the children as part of the teaching and learning sequence. The ‘remember to’ statements demonstrate the steps needed to achieve the objective. The learning objective/remember to statements will enable the class teacher to follow a clear and systematic teaching sequence, whereby questioning and activities are differentiated. Problem solving is embedded throughout the scheme.

Children’s learning is pitched at age related expectations; however, where children are working significantly above or below the national requirements, teaching is adapted to meet the needs of learners.

Planning, where possible, should involve real life contexts for maths, where children are problem solving with a purpose in mind. At least once per half term, children should have the opportunity to use mathematics in a ‘real life context’. This may mean a deviation from the scheme of work and may involve links with what is currently in the media, for example, the general election, annual budget, purchase of resources for school, planning furniture for the new school library or even calculating prices and profit from events such as the Summer Fair or Enterprise Day. During these investigations, children will be encouraged to hone in on specific problem solving skills that are transferable to other contexts. Furthermore, children should have the opportunity to embark upon a maths lesson outside of the classroom, either outdoors, in the hall or the ICT suite.

Class teachers should regularly plan opportunities for children to apply their maths skills to different problems within maths lessons and across the curriculum. Links that can be made with maths to ‘creative curriculum’ topics are encouraged. Not only does this make maths cross-curricular, but it also allows children to revisit, practice and consolidate different areas of maths and apply them within different contexts.

### **Teaching**

Across KS1 and KS2, children are placed in sets for mathematics, where it is appropriate to do so. Mathematics is taught daily in lessons, which have a structure and length appropriate to the age and stage of development of the children.

Across Early Years Foundation Stage, children are given the opportunity to develop their understanding in number and shape, space and measure through formal teaching and short group activities. The children then apply newly learnt skills in the enhanced provision.

In Nursery, the children are taught in a class group where they are introduced to a new mathematical concept each week. The children are then given the chance to explore these skills during adult led activities within the provision.

In Reception, children are placed in sets for mathematics, where it is appropriate to do so.

Children's mental maths is of great importance, with number bonds, times tables facts and various strategies for calculation taught and practiced at school. Further support is sought from parents through homework activities.

The calculation policy is followed throughout every lesson. This policy outlines the four calculations and how each calculation method progresses from reception to year 6. Teachers and children refer to this policy during lessons in order to understand how a specific calculation is solved and what the next step would be.

### Intervention

We understand the importance of supporting children who may be struggling. Gap analysis is used to identify children who require additional support and interventions are quickly put in place - an ETA often takes small intervention groups.

Intervention groups may include scheme-based work or focused intervention on a key concept. In KS2, the school uses Success @ Arithmetic as a key intervention programme.

### Assessment/ Marking

Assessment for learning should seamlessly be woven through each maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This may be via thumb up/down, RAG, questioning etc. This can only be successful if all teachers have a thorough grasp and understanding of the subject they are teaching.

'Purple Pen for a false start' is used as an AfL tool. When children complete a question incorrectly but are able to identify the error, they use the purple pen to show their understanding and correct their error.

On a daily basis, children should self-assess against the learning objective and 'remember to' statements, enabling them to identify what they do well and what their next steps are.

Pupil's work should be marked in line with the Marking Policy and, in some instances, more in depth or additional marking is required. Where appropriate, teachers should include a next step or a challenge, giving children the opportunity to respond. Future lesson design should depend on class success evaluated through marking and observations made during the lesson. Ongoing assessment will help to identify those children who require additional support, enabling teachers to place the children in intervention groups where appropriate.

At Warwick Road Primary, we also use block assessments; these are carried out at the end of a block of work and highlight progress/identify any gaps/misunderstandings. This information informs future planning and interventions.

Summative assessments occur termly and assess the units covered in class. QLAs are carried out after each summative assessment to identify individual strengths/areas of development and class strengths/areas of development. Summative and formative assessments are combined together for the final termly maths grade.

Teacher assessment frameworks for KS1 and KS2 are in place (from 2020/21) to support end of year judgements and validate moderation. These frameworks aid transition between year groups and key stages.

## **Monitoring**

Monitoring of children's progress begins with performance review meetings but continues with the subject leader evaluating further evidence to ensure children are making progress. This monitoring happens through book scrutinisation, pupil interviews and analysis of assessment results and the assessments used.

Following monitoring activities, feedback is shared with staff about areas of strength and areas for development. CPD (professional development) opportunities are built in where it would be deemed necessary. These might take the shape of inputs during staff meetings or by a variety of other means.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject leader in order to evaluate their impact. Findings are reported to the Head Teacher.

## **Equal Opportunities**

We aim to ensure that all children make progress and gain positively from mathematics lessons. During short term planning teachers consider the needs of those children who:

- require access to a more simplified objective; require extension or challenge;
- need support to access the language aspects of the mathematics  
may have a physical, sensory, emotional or behavioural  
difficulty.

Whole class oral work and appropriate group or individual tasks are planned for through the use of a variety of strategies as appropriate. These include support from a teaching assistant, targeted questions, careful modelling of mathematical language, provision of differentiated tasks and use of suitable resources.

## **Provision for Special Educational Needs**

Children who have a difficulty with mathematics are identified and catered for in line with the school's SEN Policy.

## **Homework**

We understand the importance of home-school partnerships and set mathematics homework on a half-termly basis. This keeps parents/carers informed on current learning and future learning.

To further strengthen this partnership, we hold maths workshops for parents to provide them with skills they need in order to work with their child at home. The workshops usually outline end of year expectations for a specific year group, a detailed insight in the methods we use to teach calculations in class and how we meet the needs of the maths curriculum. Teachers also display examples of test questions, including those with problem solving or

reasoning at their core, and allow parents to deepen their knowledge of the required mathematical skills needed in order to solve them.

Throughout the year, parents are invited into sessions where they apply mathematical skills to real life contexts. Parents work with their children on a variety of tasks, for example baking and enterprise days.

Children have access to online maths platforms such as TT Rockstars, Mathletics and Purple Mash. Weekly homework is assigned on each of these platforms and classes/year groups compete against each other to encourage team work and regular participation.

## **Display**

All classrooms have a maths working wall, which details the main learning objective of the week, the 'remember to' statements, and key mathematical vocabulary that children must be familiar with. Where appropriate, a WAGOLL (What a Good One Looks Like) may be displayed with the different steps needed in order to solve the calculation and the presentation policy modelled clearly. Alongside this, classrooms have additional displays which use concrete and pictorial apparatus to support children to grasp concepts.

## **Resources**

Scheme: The books that work alongside the scheme are stored in the retrospective classrooms.

Each classroom has a bank of mathematics resources, which are regularly updated. In addition, there is a central store for mathematics resources.