

Tarbiyyah Primary School

Maths Policy

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Prepared by: Headteacher & Maths Lead

Agreed with: Chair of Trustees

To be reviewed and updated: September 2024

Tarbiyyah Primary School Mathematics Policy

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of Mathematics at Tarbiyyah Primary School. Mathematics is a core subject and this policy has been written in accordance with its statutory requirements. All pupils can achieve in mathematics! At Tarbiyyah Primary School, it is our belief that pupils are not learning to be mathematicians but that they **are** mathematicians.

'Mathematics is a creative and highly inter-connected discipline...a high-quality mathematics education should provide 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.' (National Curriculum for Mathematics, 2014)

Statement of Intent

We aim to equip pupils with the tools to understand Maths. These tools include reasoning, problem solving and the ability to think in abstract ways. Mathematics is integral to all aspects of life; with this in mind, we strive to ensure that our children develop a healthy and enthusiastic attitude towards mathematics that will stay with them and support them in the next stage of their education and beyond. At each stage of learning, children are actively supported to reach their full potential as mathematicians.

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.

Tarbiyyah Primary School understands that Mathematics is a subject which is essential to everyday life. It is a proficiency which involves confidence and competence with numbers, measurements and geometry. It requires an understanding of the number system, a repertoire of computational skills and an inclination and ability to solve

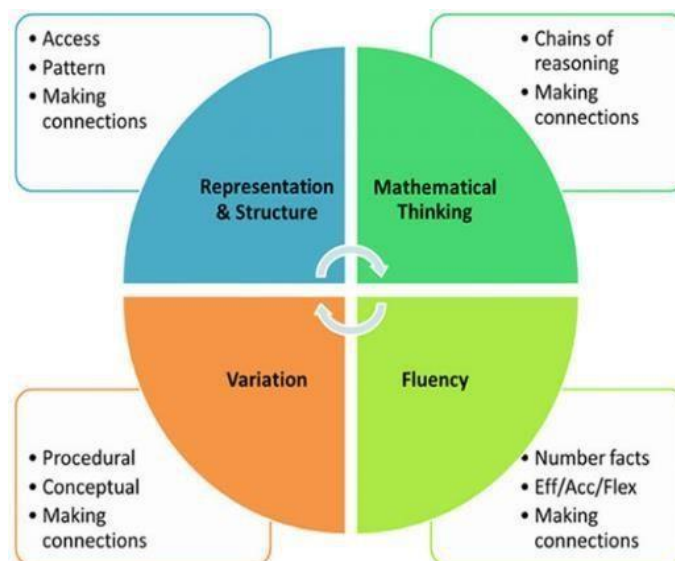
mathematical problems in a variety of contexts.

Keeping in line with the curriculum intent principles of:

- **Develop and sustain our knowledge: *what we learn.***
- **Develop and sustain our hearts and character: *who we are.***
- **Develop and sustain our actions and attitudes: *how we live and learn***
- **Develop and sustain our moral compass: *the role we play in this world.***

Implementation

All teachers follow a termly overview plan and are encouraged to design lessons using a range of resources, including, but not limited to, the White Rose Maths Scheme of Learning from the White Rose Maths Hub. A typical Maths lesson provides the opportunity for **all** children, regardless of their ability, to become confident and capable learners. We are committed to building on prior learning and enabling our children to demonstrate a deep, conceptual understanding of each topic that they can develop over time. They are encouraged to develop fluency in their recall of key facts and a whole school approach to the teaching of calculation strategies is deployed across the school. This ensures a consistent and progressive approach and prepares our children for the upper key stage 2 curriculum. Reasoning and problem-solving skills are explicitly taught to enable children to become independent learners who are prepared to take risks. Additional time is allocated to arithmetic to ensure key skills in calculation are retained. The teaching of multiplication facts continues to be a discrete focus, where the applications of these skills are essential for accessing other areas of mathematics. To make the learning relevant, cross-curricular links are made wherever possible and children are encouraged to apply skills from all areas to complete real-life challenges and give learning a sense of purpose.



Coherence	Representation & Structure	Mathematical Thinking	Fluency	Variation
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Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children that enables them to apply the concept to a range of contexts.	Representations used in lessons expose the mathematical relationships and structure being taught.	Ideas are worked on by the children: thought about, reasoned and discussed with 'talk partners'.	We promote quick and efficient recall of facts and procedures and the flexibility to move between different contexts & representations.	We aim to represent the concept being taught in more than one way. We encourage children to pay attention to what is kept the same and what changes.

Class teachers provide high quality maths lessons ensuring that there is emphasis on direct whole-class teaching, groups/partner work and independent work. We use a range of approaches (concrete, pictorial and abstract methods) following the White Rose scheme of work, teaching mathematical concepts through small steps. Staff are expected to teach and model correct mathematical language, which scaffolds children's reasoning and explanation skills – sentence stems are used to develop this.

In teaching maths, we aim to develop motivated, creative and resilient mathematicians who can confidently apply what they learn. We do this by:

- Developing and nurturing a 'growth mindset', based on the belief that everyone can do mathematics.
- Teaching new skills and encouraging the children to practise.
- Avoiding children just memorising a single procedure - they need to know why they are doing what they are doing and know when it is appropriate to use different methods.
- Developing procedural fluency and conceptual understanding in tandem because each supports the development of the other.
- Using concrete, pictorial and abstract activities in turn to support understanding.
- Building on previous concepts through carefully structured and progressive learning units
- Teaching children to reason and, therefore, explain/deepen their understanding revisiting and consolidating areas of study, spending significant time developing deep knowledge of the key ideas that are needed to underpin future learning
- Making connections at the optimum time
- emphasising the structure and connections within the mathematics, so that pupils develop deep learning that can be sustained
- providing the 'tools' needed to be a 'problem solver' both in maths and in other areas of the curriculum
- pitch lessons to challenge all to reach the highest standard
- promoting the relevance of maths in real life scenarios
- provide opportunities for the use of information technology

- regularly and diagnostically assessing children's outcomes and measuring progress
- supporting our learners at home

Impact

The impact of our Maths curriculum is that at the end of Key Stage 2 our pupils achieve and make progress in line with other pupils nationally, evident through:

- ❖ Fluency in their recall of key number facts and procedures
- ❖ Accuracy in the formal calculation methods for all four operations
- ❖ The flexibility and fluidity to move between different contexts and representations of mathematics.
- ❖ The ability to recognise relationships and make connections in mathematics
- ❖ The confidence and resilience to reason mathematically and solve a range of problems.

As a result of this learning, our children will:

- solve problems efficiently and think logically
- be resilient in their learning
- be reflective and able to discuss and evaluate their work with confidence
- reach the highest standard possible and to think for themselves within the subject
- be creative and imaginative, to appreciate the power and beauty of mathematics
- be confident to talk about their work
- be confident to work mentally
- be the best that they can be independently, choosing resources to help their understanding as they need them
- be prepared for applying their skills effectively in everyday life situations, in their future learning and in the work place

Our approach to the teaching of mathematics focuses upon high quality teaching of mathematics, in order to introduce, and then secure and embed key concepts. At Tarbiyyah Primary School, we teach for mastery.

The Mastery Approach

Teaching for mastery is an approach, not a teaching style. Mastering mathematics is a gradual, cumulative process that creates mathematical tools for life. Mastery is what we want pupils to acquire, rather than teachers to demonstrate to give them the best chances.

Through a rich diet of challenge, investigation and problem solving on a daily basis, all children will learn to understand and clarify information; consider what they know that will help them to solve problems; realise what they need to know next; create systems and strategies; organise information in a way that helps find patterns and solutions; investigate open ended challenges and to communicate and present their findings effectively.

The depth of understanding of an individual, in a given objective, will be challenged in a wide variety of formats in order to 'test the edges of understanding'. Children will expect and welcome challenges which push them to deepen their learning at all levels. Problems are not solely for those who excel in maths.

The depth of understanding of an individual, be it working towards, working at or greater depth in a given objective, will be challenged in a wide variety of formats in order to 'test the edges of understanding'. Children will expect and welcome challenges which push them to deepen their learning at all levels. Problems are not solely for those who excel in maths.

Time Allocation

To provide adequate time for developing key skills in fluency, reasoning and problem solving, each class teacher will provide at least five daily mathematics lessons per week. This may vary in length but will usually last for about 45 to 60 minutes. Additional mathematics may be taught within other subject lessons when appropriate.

Roles and Responsibilities

Overall responsibility for monitoring the teaching of Maths throughout the school lies with the headteacher, with the support of the maths lead.

The headteacher will make decisions on:

- How maths should support, enrich and extend the curriculum.
- The provision and allocation of resources.
- The ways in which maths can benefit the aims and objectives of the school.

The headteacher will also be responsible for overseeing the review of this policy; monitoring the progression of teaching and learning.

The maths lead will also responsible for:

- Implementing this policy across the school.
- Maintaining resources and advising staff on the use of materials.

- Supporting teaching staff, advising and offering to share their expertise and experience.
- Leading staff training on new initiatives.
- Helping staff to plan future lessons and assessments and advising teachers on teaching methods they may wish to explore.
- Encouraging staff and pupils to be creative.

Class teachers will be expected to:

- Plan and deliver interesting and engaging lessons that adhere to the national curriculum.
- Provide equality of opportunity through their teaching approaches and methods.
- Keep up-to-date assessment records.
- Ensure pupils' development of skills and knowledge progresses through their learning and understanding of maths.
- Set pupils suitable targets based on prior attainment.
- Maintain an enthusiastic approach to maths.
- Keep up to date on their own subject knowledge and teaching methods.

Schemes of Work

Maths schemes of work are provided for each unit of work through the White Rose Maths scheme. Each unit in the yearly overview is broken down into sequential small steps and each small step is paired with guidance on delivering lessons, differentiation and progression through the three-step mastery approach (concrete – pictorial – abstract)

Alongside the small-steps breakdown, teachers are provided with some brief notes and guidance to help enhance their teaching of the topic. The “Mathematical Talk” section provides questions to encourage mathematical thinking and reasoning, to dig deeper into concepts. In addition, there is guidance on what varied fluency, reasoning and problem solving should look like.

To retain knowledge and maintain fluency, pupils will regularly have an opportunity to take part in ‘flashback 4.’ These are 4 questions used to recall concepts they may have learnt last lesson, last week, last term, last year or even last key stage.

The objective is to firmly embed concepts and develop pupil confidence, so they may be able to apply their knowledge in various contexts across the curriculum.

Assessment and Recording

Assessment is an integral part of the maths curriculum and not an addition to it. Children's work in mathematics is assessed from three aspects:

- 1) Informal, formative assessments are made continually by questioning the children, observing and monitoring their work. These short term assessments are closely related to the learning objectives for the lesson and help inform next steps.

- 2) Periodic assessments take place at the end of a unit/ $\frac{1}{2}$ termly – we use white rose maths end of block assessments to check progress and understanding of content covered. This information also informs interventions.
- 3) Summative assessment is less frequent - this is the use of tests or more formal assessments to find out what children have learnt.

Statutory Assessment Tests (SATs) are used for children in Year 6, plus children in Year 4 are also required to take a multiplication tables check (MTC) in the Summer Term, this is optional. The purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics.

We teach times tables using the following progression:

Year 1 – Be able to count in multiples of twos, fives and tens

Year 2 - Be able to recall 2, 5 and 10 multiplication and division facts

Year 3 - Be able to recall 3, 4 and 8 multiplication and division facts

Year 4 - Be able to recall 6, 7 and 9 multiplication and division facts

Year 5/6 - application of multiplication and division facts to problem solving

A whole school tracking system is used to closely monitor children's progress throughout the school. Teacher assessments are entered termly and are closely analysed to identify children working at greater depth or who are at risk, appropriate intervention is then put in place to close gaps.

Equal opportunities

We are an inclusive school that ensures all pupils are provided with equal learning opportunities, regardless of their characteristics or backgrounds.

- Teachers will adapt how they deliver the maths curriculum based on the needs of pupils.
- In order to ensure pupils with SEND achieve to the best of their ability, teachers will adapt targets and the delivery of the curriculum for these pupils.
- The planning and organising of teaching strategies for each subject will be consistently reviewed to ensure that no pupil is at a disadvantage.
- The school aims to maximise the use and benefits of maths as one of many resources to enable all pupils to achieve their full potential.

Routes through Calculation

Our routes through calculation have been devised to meet requirements of the National Curriculum 2014 for the teaching and learning of mathematics, and are also designed to give pupils a consistent and smooth progression of learning in calculations across the school. Many of these examples also derive from the White Rose calculations policy and tie in with the White Rose schemes of learning used

across the school. Children have access to a wide range of counting tools and apparatus throughout.



It is important that any type of calculation is given a real life context or problem solving approach to help build the children's understanding of the purpose of calculation, and to help them recognise when to use certain operations and methods when faced with problems - this is a priority within our lessons. Children are taught and encouraged to use the following processes in deciding what approach they will take to solve a calculation; to ensure they select the most appropriate method for the numbers involved: "Can I do it in my head using a mental strategy?" "Could I use some jottings to help me?" "Should I use a written method to help me work it out?" Mathematical vocabulary is important with each operation so this is a key part of their learning, for example, we will use the term 'ones' and 'units'. E.g. Th, H, T, U /Th H T O or 1000s 100s 10s 1s. Vocabulary specific to each method is shown within each route through calculation.

Monitoring and review

The Mathematics Lead is responsible for monitoring the standard of pupil's work, the quality of the teaching and evaluating impact. The work of the Lead involves supporting colleagues in the teaching of mathematics, being aware of current developments in the subject

The school leadership team (& maths lead) will observe mathematics lessons and give feedback, staff will be directed to relevant CPD to develop their skills and support and improve their practice. Work scrutinies take place termly to monitor progress and standards and for the purpose of moderation.

This policy will be reviewed every year by the Headteacher.

Any changes made to this policy will be communicated to all members of staff.

All members of staff directly involved with the teaching of maths are required to familiarise themselves with this policy.