Westgarth Primary School

Maths Policy
October 2023

Purpose

This policy outlines the teaching, organisation, and management of Maths at Westgarth. The school's policy is based on the Statutory Framework for EYFS and the National Curriculum 2014 document for Years 1-6. The implementation of this policy is the responsibility of all the teaching staff. The policy will be reviewed in line with new initiatives and advice.

The policy is intended to be read in conjunction with the calculation policy which illustrates strategies and methods outlined in the national curriculum and that are taught from Year 1 to Year 6.

Rationale

Mathematics introduces children to concepts, skills and thinking strategies that are essential in everyday life and support learning across the curriculum. It helps children make sense of the numbers, patterns, and shapes they see in the world around them, offers ways of handling data in an increasingly digital world and makes a crucial contribution to pupils' development as successful learners. Mathematics is not just a body of knowledge and a collection of skills; it is a way of thinking. Through problem solving and reasoning tasks, children can develop wider transferrable skills. Vitally, through Maths activities, they also develop essential personal qualities such as perseverance, critical thinking and problem solving. Pupils continue to develop global care, independence, resilience and respect, in line with our core values through carefully selected and structured mathematical activities. Studying mathematics stimulates curiosity, fosters creativity and equips children with the skills they need in life beyond school.

Westgarth's Vision for Mathematics is:

To provide high-quality teaching and learning for all pupils, supporting them in becoming confident mathematicians, independent thinkers and critical problem-solvers.

Aims of Maths at Westgarth

In line with the National Curriculum (2014), at Westgarth we aim to:

- Provide pupils with engaging, relevant and high-quality Maths teaching and learning experiences alongside a positive and supportive learning environment to develop:
    - **skilled mathematicians** who are competent and fluent in use of mathematical concepts, skills, and strategies, able to apply them confidently in different contexts and other areas of the curriculum.
    - **thinking mathematicians** who can reason mathematically by following a line of enquiry, conjecturing relationships, and generalisations, developing an argument, justification or proof using mathematical language.
    - **problem solvers**, who can solve problems by applying their Maths skills and understanding to a variety of problems and contexts, whilst building a repertoire of problem-solving skills and strategies, such as working systematically, trial and improvement, logical reasoning, spotting patterns, visualising, working backwards and conjecturing.
    - **confident, enthusiastic and resilient mathematicians** who are willing to "have a go".
- For children to gain transferrable life skills such as resilience, perseverance and working collaboratively.
- In the Early Years Foundation Stage, Mathematics is one of the four specific areas which providers must support children with. At Westgarth, we support the same aims as in the Early Years Foundation Stage Framework (DfE, 2014).
    - "Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop

their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes."

Principles of Practice

- The National Curriculum for Mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high teacher expectations in teaching and learning across Westgarth.
- Children will have an hour of mathematics throughout the day in KS1 and 2, which will include a short starter activity recapping and consolidating core skills. In EYFS, the children will receive a discrete session of mathematical content once a day and their learning will be reinforced with mathematical play opportunities.
- The majority of lesson will allow pupils to:
    - Consolidate prior learning and increase fluency through retrieval activities
    - Connect their current learning through making links with prior learning
    - Introduce new concepts, where appropriate,
    - Familiarise children with appropriate vocabulary
    - See a modelled example of a concept
    - Partake in a paired or group activity
    - Complete some independent learning
    - Access appropriate challenge
    - Review their learning for the lesson
- When delivering a new concept, we use an 'I do, we do, you do,' approach which supports pupils in developing confidence in strategies and concepts and supports pupils in being resilient, independent learners.
- Teaching and Learning is centred around the use of concrete manipulatives and pictorial representations before moving learners onto more abstract and formal methods.
- Teachers ensure that the Maths curriculum is accessible for all by providing pre-teaching, interventions, differentiated tasks and support in lessons when appropriate.

- The use of intervention and pre-teaching with groups is flexible. It focuses on key blocks of understanding or skills which are preventing a child from making progress. Intervention is specific, targeted and usually short term.
- Next day intervention: Teachers ensure they timetable a daily slot to allow a small number of pupils (maximum of 8) to receive additional support following a lesson. This is to ensure that no pupil falls behind due to lack of conceptual understanding. If a greater number of pupils require support, lessons will be retaught the following day, focusing on the areas of misconception through a variation of tasks.
- Where possible opportunities to use Maths skills and strategies in other areas of the curriculum are planned and implemented.
- Teachers will actively promote and encourage children to use accurate, technical mathematical vocabulary at all times.
- Regular observation and assessment will ensure children are progressing, learning at their level and that next steps are being identified. Pupils progression is monitored and assessed using the National Curriculum year group objectives.

Breadth of Study

A range of activities, strategies and pedagogies are used to support pupils in developing a deep understanding of mathematics. These include:

- Practical activities and games that use various resources.
- One-to-one discussions between an adult and a pupil or between two pupils.
- Purposeful practise exercises where pupils are able to develop fluency.
- Open and closed tasks.
- Pure problem-solving activities as well as problem-solving activities linked to another element of the mathematics curriculum.
- Class or group discussions.
- Activities involving the use of iPads or computers as a mathematical tool or an aid to mathematical learning.

Planning

Fluency, reasoning, and problem-solving lie at the core of Westgarth's mathematics curriculum planning. Every lesson is designed to offer children a chance to enhance their comprehension of mathematical concepts.

To support the planning of this, the National Curriculum objectives for each year have been organised into blocks/units of learning. Annual overviews which identify when those blocks of learning are to be taught, support the monitoring of coverage and progression across the school. At the Half Termly stage, the

objectives are further broken down into smaller steps which build towards the wider NC objective.

Through use of the Progression of Skills map and the Calculation policy (Progression of Written Methods) documents, staff ensure that there is a consistency of approach to the teaching of Maths in terms of models used, strategies and vocabulary taught, allowing previous models to be built upon.

Using White Rose as a basis, teachers support their teaching of the Maths curriculum using a range of resources including, but not limited to, ABACUS, NCETM and Nrich. Importantly we adopt a creative approach to teaching Maths and recognise the need for the teaching of Maths to be 'scheme assisted not scheme driven'.

Alongside this, staff actively seek opportunities to integrate Maths learning and skills into the wider school curriculum. This ensures that children can practise and transfer their skills into different contexts and see the relevance of Maths beyond the traditional Maths lesson.

Early Years Foundation Stage (EYFS)

At Westgarth we recognise the vital role that early mathematical experiences have on pupils' development and how this can link to future achievement. We therefore aim to provide a Maths rich environment which allows pupils to nurture their natural curiosity and support them in making sense of the world around them.

In the EYFS, pupils access frequent, varying experiences of mathematics, allowing them to develop skills through explicit teaching, play and exploration, giving them opportunities to develop and use creativity alongside critical thinking skills in indoor and outdoor learning environments. Planning also aims to develop mathematical understanding through stories, songs, games, questioning and imaginative play.

The development of mathematical vocabulary is a significant aspect of the planning and teaching of Maths in the EYFS and staff place an emphasis on correct use of vocabulary. This supports pupils in successfully transitioning to the Key Stage 1 curriculum by allowing them to make links with prior learning.

In nursery, we adopt a holistic approach to the teaching of numeracy, emphasising connections between other areas of the curriculum and Maths, for example the number three may be explored through stories such as The Three

Little Pigs, through triangles and through songs such as Three Blind Mice. Concrete and pictorial representations support pupils in developing a deep concept of number and in beginning to count. Maths opportunities are also embedded into daily activities, helping pupils to make sense of the world in which they live and ensuring that Maths is relevant to the lives of the learners.

Staff in reception use a combination of NCETM Mastering Number and White Rose to combine learning of essential number skills with shape, space and measure. Mathematical skills are taught through discreet Maths lessons and reinforced through play.

On-going assessment is at the heart of effective Early Years practice. Staff make regular observations of children's mathematical skills and understanding, modifying future learning accordingly.

Inclusion

Westgarth is an inclusive school and we work hard to meet the needs of all our children. Class teachers are responsible and accountable for the progress and development of all pupils in their class. High quality teaching is available to all children, including those with additional needs. We work hard as a school to ensure that all additional support in the classroom is deployed effectively. Where a child is not making the expected progress, the class teacher will work alongside the Maths coordinator, SENCO, parents, and external agencies (where appropriate) to plan and deliver tailored support.

Equal Opportunities

As a staff we endeavour to maintain an awareness of, and to provide for, equal opportunities for all of our pupils in mathematics. We consider cultural background, gender, and special needs, both in our teaching attitudes and in the published materials we use with our pupils.

Marking and Feedback

We recognise the importance of responding to children's work to provide praise, support, encouragement, and feedback. At Westgarth, feedback is used as an effective tool which provides the opportunity for children to reflect on and extend their own learning. Staff use a range of feedback approaches including verbal feedback during a lesson or following a lesson, self-assessment, peer feedback, written feedback on completed work.

See Assessment Policy for details on the marking approach employed.

Assessment

Assessment is an integral and continual part of teaching and learning at Westgarth.

EYFS Profile

In the final term of Reception, the EYFS Profile is completed for each child.

The profile reflects ongoing observation (as described above), records, discussions with parents and carers and adults working with the child. Each child's level of development is assessed against the mathematics early learning goals (ELGs). Practitioners must indicate whether pupils are:

- Meeting expected levels of development (Expected)
- Not yet reaching expected levels (Emerging)

Year 1 – Year 6

Continual Assessment

Daily ongoing assessment is vital in identifying small misconceptions which may impact on a child's understanding and development of key skills. At Westgarth, we continually reflect upon our teaching and the impact it has had. This often results in adapting plans, creating same lesson or same day intervention groups or next day intervention groups. We use a variety of tools to inform our ongoing assessment.

- Use of rich question at each level (whole class, small group, individual).
- Observational assessment.
- 1:1 or group discussions with pupils.
- Mini Plenaries within a lesson.
- Retrieval activities.
- Children's work.
- Use of the wrong answers.
- Self (or peer) assessment at the end of lesson based on individual learning objectives and the 'Success Criteria'.
- Next step marking and feedback and pupils' responses to this.

Summative Assessment

At the end of a block of learning, children are assessed using a range of strategies to give a comprehensive overview of the understanding and skills gained. Teachers are required to assess the depth of children's knowledge within an objective to give a refined picture of the child's attainment and identify gaps or next steps. This gives a clear picture of each child's level of fluency with a skill, whether they can use and apply this knowledge in different contexts and if they can reason about it. We use a selection of resources and methods to assess attainment and progress against the National Curriculum objectives. These include formal assessments such as past SAT questions, Testbase and White Rose end of unit assessments, alongside more informal approaches such as teacher observation, dialogue with children and children's work.

This information is used to form a judgement for the whole school tracking system which allows staff, including senior leaders, to identify and provide support plans for pupils who fail to make expected progress.

Nationally Standardised Summative Assessment

Nationally standardised summative assessment provides information on how pupils are performing in comparison to pupils nationally:

EYFS Profile

KS1 SATs

Year 4 Multiplication Check

KS2 SATs

Monitoring Pupil Progress and Attainment

Through our continual assessment approach and use of the school 7-point tracking system, pupil's progress and attainment is closely monitored by the class teacher. At termly Pupil Progress meetings, children who are not making the expected progress are discussed with the Maths coordinator and other members of the SLT. The mathematical and wider barriers to their learning are identified and relevant support/intervention is planned.

Lesson observations, learning walks and book scrutiny are used to monitor the quality of teaching and the impact of this on children's progress. Information gathered from this monitoring process informs the SIP and the future direction of individual or whole school Maths CPD.

At a whole school level, the tracking assessment information is used by the Maths Coordinator and the SLT to carefully track the progress of different groups within the school. They also compare the progress rate of different groups. This information is then used to help plan to raise standards in any group or individual identified as not making adequate progress. This information will also be used to inform School Improvement Plans and future CPD in Maths

Working with Parents

At Westgarth we recognise the valuable role parents play in supporting their children's learning. We aim to support parents through clear guidance and support. Staff do this in a variety of ways:

- Termly Curriculum Overview- outlining the key strategies, skills, and knowledge to be taught in a term.
- Bespoke Support Sheets - which offer guidance on specific areas of the Maths curriculum eg times tables.
- Termly parents meeting. This takes the form of a structured conversation and offers the opportunity to answer parents' questions and offer individualised advice and guidance.
- Written Report. This reflects the child's attitude to learning, progress /attainment and establishes agreed targets and strategies to be undertaken.
- An annual welcome meeting. At the beginning of the academic year, parents are invited to attend an information meeting regarding the upcoming year. General areas of the Maths curriculum are outlined alongside homework expectations.

Roles and Responsibilities.

Role of Class Teacher

- To plan and implement high-quality teaching in the delivery of the National Curriculum objectives for their year group in line with the Maths policy and Calculation policy.
- Carry out continual assessment of the children's understanding and skills.
- Develop relevant support and intervention for children who are not making the expected progress, with support from the coordinator and SENCO.
- Be proactive and discuss any training needs with the coordinator.
- To work collaboratively in implementing whole school Maths initiatives and policies.

- To inform parents of pupils' progress achievements and attainment.

Role of Subject Leader

- Coordinate the planning, implementation, and assessment of Mathematics across the school.
- Act as a Maths champion in school, keeping abreast of new initiatives and research which may improve the teaching and learning of Maths at Westgarth.
- Lead school development in the implementation of the Maths curriculum, assessment, recording and reporting
- Support colleagues in the planning, implementation, and assessment of NC.
- Monitor and evaluate mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
- Identifying areas of school or individual development, planning relevant support or whole school CPD.
- Discuss regularly with the SLT, Headteacher and the Mathematics Governor findings from the monitoring process.
- Analysis of internal/ external data, to identify strengths and areas for development.
- Write and implement a SIP in response to findings of the monitoring process.
- Manage and purchase Maths equipment.
- Working collaboratively with other Maths coordinators within our trust of schools.
- **Sian Fossey October 2023**