Forest Hall Primary School

Mathematics Policy

Version	Date	Adopted	Review
1.0	2017	2017	Dec 2020
1.1	Jan 2021	Jan 2021	June 2022
1.2	October 2022	October 2022	

Forest Hall Primary School

Mathematics Policy

Purpose of study

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, and offers ways of handling data. The study of mathematics enables children to solve problems and make connections by using logical reasoning, suggesting solutions and trying out different approaches to problems. Mathematics offers children a powerful way of communicating. Studying mathematics stimulates curiosity, encourages creativity and equips children with the skills they need in life beyond school.

Aims
We aim to develop:

- a positive attitude towards mathematics where children demonstrate enjoyment and enthusiasm for the subject
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematically
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation

Teaching and Learning

From Reception to Year 6, children will receive a daily maths lesson of at least 45 minutes.

Our curriculum follows the Programmes of Study from the National Curriculum together with the Statutory Framework for the Early Years Foundation Stage.

We follow a mastery approach where pupils have the opportunity to work through new content as a whole group, fully understanding key concepts and making connections between the various aspects of maths. High-attaining students are challenged through depth and application of knowledge and understanding.

- pupils become **fluent** in the fundamentals of mathematics, so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- pupils can **reason** mathematically by following a line of enquiry, suggesting relationships and generalisations, and developing an argument or proof using mathematical language
- pupils can **solve problems** by applying their mathematics to a variety problems, including breaking down problems into a series of simpler steps and persevering in seeking solutions

EYFS

Teachers and practitioners 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. This area of development includes seeking patterns, making connections, recognising relationships, working 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.

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. Mathematical understanding can be developed through stories, songs, games, routine, questioning, imaginative play, child initiated learning and structured teaching.

Children are encouraged to develop positive attitudes and interests in mathematics, they will be confident to talk about their learning and will understand that mistakes are part of the journey to understanding.

We offer rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. Children explore characteristics of everyday objects and shapes and use mathematical language to describe them.

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. Children will develop a solid foundation of knowledge and vocabulary from which mastery of mathematics is built.

KS1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This involves working with numerals, words and the four operations, including with practical resources (e.g. Numicon, cuisinaires, base ten, place value counters).

Children will be taught to recognise, find and name fractions of an object, shape or quantity.

Pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value.

Lower Key Stage 2

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Upper Key Stage 2

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of KS2, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Inclusion

It is recognised that ***all*** pupils, including those with Special Educational Needs, must be given opportunities to show what they know and can do.

Recognising the different abilities within a class means that teachers must plan at a class, group and individual level. This involves:

- Using a range of teaching styles which match the experience of all pupils within the class and begin to cater for different abilities.
- Matching tasks to pupils' needs.

All pupils should be given the opportunity to reason and problem solve during a unit of work.

Resources

Teachers will broadly follow the long and medium term planning issued by White Rose Maths Hub, adapted to suit the needs of the class, and may use the additional lesson guidance provided. NCETM materials are used to enhance teaching of concepts following a mastery approach. In addition, teachers use a variety of resources such as Numicon, base ten, cuisinaires and place value counters to make lessons engaging and to extend the pupils' knowledge and understanding.

We subscribe to mymaths which is an online maths resource for pupils to work through concepts and complete online activities.

From Y1 to Y6, children are expected to complete weekly maths homework, which can be online through mymaths or in a maths homework book.

Assessment

Teachers informally assess the knowledge and understanding of pupils in lessons through their written responses and contributions to discussion.

From Year 1 to Year 6, children are assessed using pre and post unit assessments for key areas of the curriculum (place value, the four operations and fractions). A pre unit assessment is taken before a unit of work is taught to inform the teacher's planning. At the end of the unit, the assessment provides a clear picture to teacher and pupil of the progress made.

Each term, pupils are assessed against statements on Target Tracker and assigned a step to indicate how much of the year group curriculum they have completed.

Non negotiables: At the end of each term, teachers will assess children's progress towards key objectives for their year group, which align with the ready-to-progress criteria from 2020 DfE Mathematics Guidance. This ensures a clear focus on the essential concepts children are required to secure to be ready to move into the next year group.

NFER maths tests are used in the Autumn term to assess understanding in Y2-6 and in the Summer term in Y1,3, 4 and 5.

Year 2 pupils take maths KS1 SAT papers in May.

Year 6 pupils are assessed throughout the year with past SAT papers to identify gaps in skills and knowledge. Each May, Year 6 pupils take maths KS2 SAT papers which are externally marked.

Monitoring and Evaluation
The maths subject lead will monitor and evaluate the teaching of maths through lesson observations, book scrutinies and learning walks. Analysis of medium term planning as well as of assessment data will also be completed.

Roles and Responsibilities

The Governing Body is responsible for ensuring compliance with the legal requirements of the National Curriculum. The Curriculum Sub-Committee is responsible for the approval and review of this policy. The nominated governor for maths may liaise with the Headteacher and Subject Leader and report back to the governing body. Governors will see Maths being taught during learning walks.

The Headteacher will:

- Ensuring all school personnel are aware of and comply with this policy
- Working closely with the School Leader for Maths and the link governor
- Ensure compliance with the legal requirements of the National Curriculum
- Provide leadership and vision in respect of equality
- Provide guidance, support and training to all staff

The Subject Lead will:

- To lead on the development and implementation of this policy throughout the school.
- To offer help and support to all members of staff in their teaching, planning and assessment of the maths curriculum.
- To attend appropriate network meetings/ training, feeding back to colleagues, and ensure staff keep up to date with relevant information, best practice and pedagogy.
- To lead and organise staff training as needed.
- To review practice and resources in delivering the maths curriculum and report to the headteacher.
- To produce and implement a maths development plan if requested.
- Monitor teaching and learning in maths across school with the support of the leadership

team
- Monitor pupil responses to maths provision via pupil voice
- Analyse progress and pupil outcomes in maths across school.

The Class teachers will:
- Devise medium and short term planning
- Plan and deliver engaging lessons which enable children of all abilities to reach their potential

The Teaching Assistants will:
provide the necessary support to enable children of all abilities to make good progress in maths. This includes supporting individuals or groups in a lesson and carrying out maths intervention programmes.

Parents/Carers:
- are encouraged to support their child in developing their maths skills. This should include: playing games which include counting; practising times tables; and talking about time and money.
- should support their child in completing homework tasks set, referring to the school's calculation policies where appropriate (available on school website).
- take an active role by joining the school in celebrating success of their child's learning. These can be through attending progress evenings, assemblies and open mornings. Half termly newsletters inform parents of their child's topics.

Equal Opportunities
We ensure that each individual child receives an equal learning experience regardless of ability, culture and gender.

Links to Other Policies
Refer to Calculations Policy for details on strategies used to complete calculations in addition, subtraction, multiplication and division.
See Assessment Policy for further details on how maths is assessed.
See SEN Policy for details on how pupils with additional needs are catered for.

Review Date
This Policy will be reviewed by the Maths Subject Leader following consultation with staff and the Governing Body of our school in July 2024.

Remote learning in maths
We offer children continuity when learning from home through the use of White Rose Maths video lessons and resources which they are familiar with from classroom learning.
https://whiterosemaths.com/for-parents/

Appendix
DfE guidance from July 2020:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf

A Tyas
Maths Lead
June 2022