



Maths Policy

October 2020

Hurst Park Primary School
Respect, Resilience, Positivity

Introduction

*‘Mathematics is a creative and highly interconnected discipline.....a high quality mathematics education should provide a foundation for understanding the world, the ability to reason mathematically and develop a sense of enjoyment and curiosity.’
(National Curriculum for Mathematics 2014)*

At Hurst Park Primary School all of our children are given the opportunity to develop their mathematical potential through a rich, engaging curriculum. We want our children to feel confident in using and applying mathematics in a wide range of situations.

We believe that mathematics is uniquely powerful in helping us to make sense of, and describe, our world and in enabling us to solve problems. It is a fascinating subject, dealing with the nature of number, space, pattern and relationships. Useful and creative, it requires not only facts and skills, but also understanding gained through exploration, application and discussion.

In mathematics, we aim to develop lively, enquiring minds encouraging pupils to become self-motivated,

confident and capable in order to solve problems that will become an integral part of their future.

Aims

At Hurst Park, we aim to:

- Promote a positive attitude and to view maths as an interesting and attractive subject in which children have an expectation of success.
- Develop in children the ability to think clearly and reason logically in maths, with confidence and independence of thought.
- Ensure that our children become fluent in the fundamentals of mathematics by learning number facts by heart.
- Develop an awareness of maths in the world beyond the classroom.
- Apply their skills to problems taken from their everyday lives.
- Encourage the children to develop an increasing ability to communicate their maths to others in a variety of ways (written, pictorial, graphic, verbal).

- Provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.
- Provide tasks which develop their understanding and use of mathematical language.

Mastery Maths Curriculum – Programme of Study

The school mathematics curriculum is based on the Programmes of Study from the National Curriculum 2014 and links with the identified areas of learning:

- Number and Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Measurement
- Geometry
- Statistics

Agreed common strategies are used to teach particular operations and processes as outlined in the Calculation policy and videos on our school

website. Learners are taught technical and specific subject based vocabulary and encouraged to ask questions and develop reasoning.

Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures.

Key Stage 1 and 2

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains.

Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

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 should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools).

At this stage, 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. An emphasis on practice at this early stage will aid fluency. Pupils should also have an understanding of multiplication and division and they should be fluent in their 2, 5 and 10 multiplication tables.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

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 and they can apply this to more simple worded problems. 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. They should also know the corresponding division fact for each multiplication table. This is in preparation for the Multiplication tables check at the end of the year.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

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 Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Times Tables End of Year Expectation

Year 1	Year 2	Year 3
Count in multiples of 2, 5 and 10	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables	Recall and use multiplication and division facts for the 2, 3, 4, 5 and 10 multiplication tables
Year 4	Year 5	Year 6
Recall and use multiplication and division facts for multiplication tables up to 12×12	Apply all the multiplication tables up to 12×12 and related division facts frequently, commit them to memory and use them confidently to make larger calculations.	Apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations involving decimals.

Teaching and Learning

At Hurst Park, we use a variety of teaching and learning styles in Mathematics lessons. Lessons have a flexible approach to ensure the pitch and pace suits the children. Teachers use their own judgement in how to approach teaching a concept and will incorporate group, paired or individual work as appropriate.

Children have the opportunity to use a wide range of resources such as models and images to support their work. They use ICT in Mathematics lessons where it will support teaching and motivate children's learning. They will be used when it is the most efficient and effective way of meeting the lesson objective.

Planning

Planning is based upon the new National Curriculum (2014). Programmes of Study should inform medium term plans and subsequently weekly planning. Class teachers are responsible for the relevant provision of

their own classes and individually develop weekly plans which give details of learning objectives and appropriate differentiated activities. Although planned in advance they are adjusted on a daily basis to better suit the arising needs of a class and individual pupils.

Planning is undertaken at three levels:

- Long term planning is based on the programmes of study in the new curriculum.
- Medium term planning is carried out half-termly. Teachers select their focused key objectives from the White Rose Hub new curriculum planning. At Hurst Park, we are building on the development of mastery in maths.
- Short term planning is carried out weekly. These plans include key learning objectives, any differentiation, vocabulary and questions.

Cross-Curricular Links

Mathematics is taught mainly as a separate subject but every effort is made to link maths with other areas of the curriculum. We try and identify the mathematical possibilities across the curriculum at the planning stage.

We also draw children's attention to the links between maths and other curricular work so children see that maths is not an isolated subject.

Assessment

We aim to provide feedback to children through marking so that they have specific advice about improvements to their work. Children are given time to read and review their work following marking.

Teachers assess learners through both formative and summative assessments. Ongoing observations of individual or group discussions and assessments from pieces of work support this. All teachers use the School Target Tracker to monitor achieved objectives of each individual child and regularly track progress,

and to inform their planning and teaching. It enables teachers to evaluate the stage of a particular child's learning and what steps will be required next in order for the child to make progress.

Statutory Tests are taken at the end of Year 2 and 6 and non-statutory tests are taken in Years 3-5. In Year 4, children will also take the Multiplication tables check.

Parents are informed of children's progress in mathematics through informal discussions, parent consultation evenings and annual reports.

Home Learning

Homework is used to provide opportunities for the children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies and to prepare for future learning. Children are expected to practise KIRFS (Key Instant Recall Facts) and times tables at home throughout the year. Parents are encouraged and offered support and guidance to support their children's

learning of mathematics. Times Table Rock Stars and Numbots are home learning tools to which all pupils from Year 1 to 6 have access. It is a carefully sequenced programme of daily times tables practice.

Equal Opportunities

As a school we endeavour to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account cultural background, gender and Special Needs, both in our teaching attitudes and in the published materials we use with our pupils.

Inclusion

All children receive high quality inclusive teaching. Where possible, we aim to fully include SEN pupils in the daily mathematics lessons so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods. There are high expectations for all pupils. Resources are

provided to encourage children to learn independently and support their learning. Specialist resources, such as Numicon are also used, where appropriate.

When planning, teachers will try to address the child's needs through simplified or modified tasks. Support staff are deployed effectively.

Health and Safety

All learning activities need to be taught within the guidelines of the school's Health and Safety Policy.

Monitoring and Review

The Senior Leadership Team and Governors are responsible for monitoring the standards of the children's work and the Mathematics, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school.

This policy should be considered alongside other relevant policies:

- Teaching for Learning
- Calculation
- Assessment for Learning
- Curriculum
- SEN and Inclusion
- Child Protection
- EYFS
- Equal Opportunities

Reviewed: Autumn 2020

Inspiring a community of successful learners

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