Houghton Primary School

Working hard to achieve our best

Curriculum Statement for MATHEMATICS

Details of the mathematics curriculum for each year group for each term can be found on the class webpages

Spiritual, Moral, Social and Cultural development through the teaching of mathematics

Spiritual
Mathematics supports pupils' spiritual development by helping them to develop deep thinking and questioning the way in which the world works. Through mathematics children gain an appreciation of the richness and power of mathematics in our everyday lives.

Moral
Mathematics supports pupils' moral development through discussion about mathematical understanding and challenging assumptions, supporting children to question information and data that they are presented with. Mathematics helps children to understand and use rigorous and logical argument and discourage jumping to conclusions when trying to determine the truth.

Social
Mathematics support pupils' social development by promoting self-esteem and building self-confidence. Mathematics encourages collaborative learning in the classroom in the form of listening and learning from each other and paired discussion and working with partners. We help pupils develop their mathematical voice and powers of logic, reasoning and explanation by offering explanations to each other. We provide opportunities, events and team challenges for increased pupil involvement.

Cultural
Mathematics supports pupils' cultural development by developing an appreciation with the pupils that mathematics, its language and symbols have developed from many different cultures around the world: e.g. Egyptian, Indian, Islamic, Greek and Russian roots. Through mathematics we investigate and research cross cultural patterns e.g. tessellation, symmetry etc.

Key characteristics of mathematicians

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We have identified the following key characteristics which we aim to develop to enable children to become confident and independent mathematicians:

- An understanding of the important concepts and an ability to make connections within mathematics.
- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

Our approach to teaching mathematics
Mathematics is taught every day (or for at least 5 sessions a week) in Key Stages 1 and 2. Teachers provide opportunities to develop mathematical knowledge, skills and understanding as identified in the key learning objectives in their teaching of mathematics as a separate subject and across the curriculum. It is also taught across the curriculum in other subject areas e.g. Science, Geography, PE etc, enabling children to apply their mathematical knowledge and skills in other contexts.

Across the school there is an emphasis on practical activities, problem solving and children being required to explain and reason.

We use a variety of materials and resources to support our teaching of mathematics across the school including materials from National Centre for Excellence in the Teaching of Mathematics (NCETM), White Rose Maths and NRich Enriching Mathematics. These resources place a firm emphasis on development of mathemattical thinking, the ability to apply knowledge and skills with understanding and the development of reasoning skills. We also use a range of teaching materials which enable active mathematics where children are up and out of their seats within an approach which enables movement and mathematics.

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Opportunities for mathematics

In order to ensure that our children are provided with a range of opportunities to enable them to become independent and confident mathematicians we provide:

Key Stage One	Key Stage Two
Opportunities to: • Count and calculate in a range of practical contexts. • Use and apply mathematics in everyday activities and across the curriculum. • Repeat key concepts in many different practical ways to secure retention. • Explore numbers and place value up to at least 100. • Add and subtract using mental and formal written methods in practical contexts. • Multiply and divide using mental and formal written methods in practical contexts. • Explore the properties of shapes. • Use language to describe position, direction and movement. • Use and apply in practical contexts a range of measures, including time. • Handle data in practical contexts.	Opportunities to: • Count and calculate in increasingly complex contexts, including those that cannot be experienced first hand. • Rigorously apply mathematical knowledge across the curriculum, in particular in science, technology and computing. • Deepen conceptual understanding of mathematics by frequent repetition and extension of key concepts in a range of engaging and purposeful contexts. • Explore numbers and place value so as to read and understand the value of all numbers. • Add and subtract using efficient mental and formal written methods. • Multiply and divide using efficient mental and formal written methods. • Use the properties of shapes and angles in increasingly complex and practical contexts, including construction and engineering contexts. • Describe position, direction and movement in increasingly precise ways. • Use and apply measures to increasingly complex contexts. • Gather, organize and interrogate data. • Understand the practical value of using algebra.

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Key learning objectives for mathematics

We have identified 9 key learning objectives for mathematics:

- To know and use numbers
- To use fractions
- To use measures
- To add and subtract
- To understand the properties of shapes
- To use statistics
- To multiply and divide
- To describe position, direction and movement
- To use algebra

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Click here for National Curriculum Programmes of Study for Maths