



Wormholt Park School Maths Policy Overview 2018

Introduction

This policy outlines the purpose, aims, organisation and management of the teaching and learning of mathematics at Wormholt Park Primary School. In accordance with our school's mission statement and Rights Respecting aims, we will foster the highest mathematical achievement in all of our pupils which will equip them for secondary school and throughout their life.

Purpose

"Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering.... A high-quality mathematics education therefore provides 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 about the subject." - National Curriculum 2014

'Maths is the study of patterns abstracted from the world around us- so anything we learn in maths has literally thousands of applications, in arts, sciences, finance, health and leisure'
- Professor Ruth Lawrence (University of Michigan).

Mathematics is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them throughout their lives. Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways.

Aims

Our aims in mathematics are for our students to:

- To develop *competency* in the key areas of mathematics which are Number, Measurement, Geometry and Statistics, which will allow our students become numerate members of society.
- To develop fluency in maths during lessons and during additional timetabled focusses.
- To develop reasoning and problem solving skills through consistent problem-solving opportunities, word problems, and investigations.
- To *promote an interest* and enthusiasm for mathematics.
- To have a *strong conceptual understanding* of maths, its structures and its relationships.

- To *recall and apply* their knowledge, skills and ideas confidently and efficiently and in real life contexts outside the classroom.
- Be *secure in using written methods* for which they have a clear understanding.
- To *develop a range of mental calculations* and to use these in different settings.
- To develop the ability to decide which method to use when tackling problems (mental strategies or written) and discuss methods used and reasoning involved using appropriate mathematical vocabulary.
- To develop a deeper understanding of mathematics through a *process of enquiry*, problem solving and investigation.
- To develop an understanding of the *connectivity* of patterns, logic and relationships within mathematics.
- To develop *accuracy in estimating*, calculating, measuring and recording and be able to select and use *appropriate mathematical equipment*.
- To develop and engage in collaboration and communication rich activities.
- To welcome challenge and being 'stuck' and develop personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.

Teaching and Learning

Teaching and Learning is based on the National Curriculum for Mathematics 'Programmes of Study' (2014), which is used as the basis for teaching mathematics from year 1 to year 6, and the Early Years Foundation Stage Curriculum, 2012.

The programmes of study for mathematics set out year-by-year for key stages 1 and 2 the learning intentions and statutory and non-statutory requirements. We use the objectives from this to support planning and to assess children's progress.

Fluency, Problem Solving and Reasoning

Staff use long term planning to ensure coverage of all areas of the National Curriculum and medium term planning to differentiate objectives according to the set which they teach. It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The class teacher keeps these individual plans, which they annotate according to the success of the lesson and which inform next steps and AFL.

Planning

Each year group uses learning intentions taken directly from the Programmes of Study. Planning is guided by the termly coverage map, the year groups assessment card, which is found in the back of each child's maths book and 'Planning for Progress' developed by the assessment co-ordinator. Statistics and Geometry are taught in focussed lessons and cross-curricular in science and topic. Assessment of learning intentions and coverage is tracked and recorded in planning. Teachers use these learning intentions to inform their planning and assessment.

Fluency, Reasoning and Problem Solving

Fluency in mathematics is taught in maths lessons, using learning intentions taken from the Programmes of Study, which are displayed in the back of each child's maths book.

Numeracy Passports

In addition to teaching and developing mathematical fluency in lessons, Years 1 to 5 are currently using 'Maths Passports' to develop children's fluency in mathematics outside. These lessons are 15-20 minutes long and are an additional lesson to the hour long daily maths lesson, focussing on developing quick, fun strategies for mental recall of maths facts and key numeracy skills in counting, place value, addition, subtraction, multiplication and division.

Reasoning and Problem Solving

Our students are exposed to richer and deeper learning opportunities through reasoning, problem solving and investigative activities in maths lessons. As children learn and develop their understanding of written calculations, they are encouraged and exposed to opportunities to apply their understanding through real-life problem solving opportunities.

Specific reasoning lessons also take place from Years 1 to 5 on Friday's. The programme of learning and content comes from 'STOPS', which is a scheme of work which specifically targets the development of reasoning skills throughout the maths curriculum.