



Thursfield Primary School

Math Policy

Maths Philosophy

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate fluently, reason and solve problems. It enables children to understand relationships and patterns in both number and space in the world around them. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

Aims

The aims for teaching mathematics at Thursfield Primary School are:

- become fluent in the fundamentals of mathematics so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry
- to promote enjoyment and curiosity of learning through practical activity, exploration, investigation and discussion
- to understand the importance of mathematics in everyday life.
- to develop children's ability to move between concrete, pictorial and abstract representations fluently and confidently.
- To promote confidence and competence with understanding and using numbers and the number system;
- To develop a practical understanding of the ways in which information is gathered and presented;
- To explore features of shape and space, and develop measuring skills in a range of contexts;
- To enable children to select and use a range of mathematical tools effectively.
- To promote and provide opportunities for children to develop the core learning skills of confidence, determination, curiosity, aspiration, teamwork, independence, communication and focus.
- To develop sustainable learning for pupils for the future.
- To enable children to share and discuss concepts with confidence and with a wide range of vocabulary.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity organised into distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Teaching and learning style

Thursfield Primary School is developing a Mastery approach to learning in Mathematics. The mastery of the maths curriculum is something that we want *all* pupils to acquire. Our mastery approach to teaching maths has the aim — to help pupils, over time, acquire mastery of the subject. We believe mastery of maths means a deep, long-term, secure and adaptable understanding of the subject which develop:

- fluency (rapid and accurate recall and application of facts and concepts)
- a growing confidence to reason mathematically
- the ability to apply maths to solve problems, to conjecture and to test hypotheses.

We aim for children to achieve mastery of the key areas and domains in Maths, narrowing the gap between the most and least able learners. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding through same day intervention. Intervention is also achieved through a range of strategies, such as the use of the Help desk within all classrooms; the use of equipment such as numicon and there is also the use of peer-support pairs and guided or targeted input from the teacher and teaching assistant.

We believe that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking the concrete-pictorial-abstract approach.

Concrete – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Each classroom has equipment on tables available daily to help move learning forward and develop children's conceptual understanding.

Pictorial – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

During our daily lessons we encourage children to ask as well as answer mathematical questions. We develop their ability to independently select and use appropriate concrete apparatus to support their conceptual understanding and build procedural fluency. They have the opportunity to independently access and use a wide range of resources, such as bead frames, bead strings, number lines, Dienes/ Base 10 apparatus, place value counters, Numicon, multilink, place value cards, Cuisenaire rods and other small apparatus to support their work. We develop the children's ability to represent problems using visualisation skills, jottings and pictorial representations such as Empty Number Lines, the bar models and their own ideas. Wherever possible, we provide meaningful contexts and encourage the children to apply their learning to everyday situations.

Stem sentences (Call and Response) -

At Thursfield we expect children to use correct mathematical terminology and to explain their mathematical thinking in complete sentence. **'I say, you say, we all say.'** This technique enables the teacher to provide a sentence stem for children to communicate their ideas with mathematical precision and clarity. These sentence structures often express key conceptual ideas or generalities and provide a framework to embed conceptual knowledge and build understanding.

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