

CHS Maths Policy and Practice

Aim

To develop a deep conceptual understanding of mathematics, for all students in Coleshill Heath, through the use of concrete, pictorial and abstract resources.

Our Maths Vision

- To foster positive attitudes, a fascination and excitement of discovery through the teaching and learning of mathematical concepts.
- To develop a '*can do*' attitude in our children, especially when problem solving and pattern sniffing.
- To broaden children's knowledge and understanding of how mathematics is used in the wider world by making rich and varied real life connections.
- To enable our pupils to confidently reason about their mathematics, using a suitable range of mathematical language, recognising its importance for communication and deep thinking.
- To use a wide range of models, visual manipulatives and practical resources to develop a deep conceptual understanding alongside procedural fluency.

Key elements of our teaching and learning

At Coleshill Heath we strive for all teachers to deliver high quality, effective maths lessons based on a secure foundation of maths subject knowledge and pedagogy.

The Teaching and Learning of mathematics in Coleshill Heath should include all of the below in every lesson and/or over a series of lessons:

1. Representation and Structure

When introduced to a new concept, children should have the opportunity to build competency by taking this approach.



Concrete– This is the 'doing' stage, using concrete resources to model problems, to help children understand what they are learning. Children need the opportunity to experience and handle physical objects themselves.

Pictorial– This is the 'seeing' stage, using representations of the objects to model problems. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem. Building or drawing a model makes it

easier for children to grasp concepts they traditionally find more difficult, such as fractions, as it helps them visualise the problem and make it more accessible.

Abstract –This is the “symbolic” stage, where children are able to use abstract symbols to model problems

2. **Language development:** The way that children speak and write about mathematics has been shown to have an impact on their success. We need to use a carefully sequenced, structured approach to introduce and reinforce mathematical vocabulary. Every lesson will include opportunities for children to explain or justify their mathematical reasoning.

3. **Fluency:** Children need to be given the opportunities to memorise single procedures, but also they need to know **why** they are doing what they are doing and **know when it is appropriate** to use different method.

4. **Reasoning and problem solving:** Mathematical problem solving is at the heart of our approach – it is both how children learn maths, and the reason why they learn maths. By accumulating knowledge of mathematics concepts, children can develop mastery and depth and test their problem solving in every lesson.