

What Mathematics looks like at Houghton Conquest Lower School

Our Vision:

Our intent is to provide a high-quality maths education that develops a natural enjoyment and curiosity-teaching children the essential skills and knowledge to prepare them for the next steps in their life.

Our Aims:

- We aim for all children to secure the basic mathematical skills and concepts to become confident individuals that are prepared for their future mathematical journey of reasoning and problem solving.
- We aim for **all** children to succeed.
- We aim to develop the acquisition of oracy skills via the accurate use of mathematical vocabulary and stem sentences.
- We aim for children to make connections across mathematical ideas to develop fluency, mathematical thinking, and competence in solving problems.
- We aim to reduce the cognitive load of children via consistent lesson structures used across the school, revisiting learning regularly and frequently using manipulatives across the school.

Lesson Structure:

- Children begin with a short 'Power Up' activity which supports fluency in and recall of number facts.
- Following this, the main lesson begins with a 'Discover' and 'Share' task in which a 'real-life' problem is shared for the children to discuss in partners. This helps promote discussion and ensures that mathematical ideas are introduced in a logical way to support conceptual understanding.
- Following this, the children are presented with varied similar problems which they might discuss with a partner or within a small group. This is the 'Think together.'
- The class then progress to the 'Practice' part of the lesson, which is designed to be completed independently. This practice uses conceptual and procedural variation to build fluency and develop greater understanding of underlying mathematical concepts.
- The final part of the sequence is a 'reflect' task. This is an opportunity for children to review, reason and reflect on learning and enables the teacher to gauge their depth of understanding.



Principles of Learning:

- To develop and promote an 'everyone can' attitude- for all children to succeed.
- To develop a Concrete, Pictorial, Abstract approach for all to see how maths works and understand it.
- To frequently revisit learning.
- To deepen learning.
- To have high expectations for all pupils.
- To provide a high-quality maths education.
- To develop enjoyment and curiosity across mathematics.
- To prepare children for next steps in learning.
- To secure the basic mathematical skills and concepts, including number facts and times tables.
- To develop confident learners.
- To develop learners that are independent, persevere and show resilience when reasoning and problem solving.
- To develop the acquisition of oracy skills through the use of mathematical vocabulary and stem sentences.
- To support children to make connections in their learning.
- Develop fluency, mathematical thinking, and competence in solving problems.
- To create an environment where it is safe to make mistakes.

What learning looks like:

- Physical resources.
- Problems in a 'real-life' context.
- Children are engaged and inquisitive around their learning.
- Children show a sense of pride and success over their learning.
- Children are not ability grouped and access learning that meets their needs.
- Learning builds on prior learning.
- Accurate mathematical language is used by staff and pupils.
- Working walls display learning.
- Children are encouraged to answer in full sentences to explain their thinking and use the Stem Sentences to assist their explanations.
- Fluency, reasoning and problem solving is developed through questioning.
- Concrete, Pictorial, Abstract approach is carefully used so children see the maths not just follow a procedure.
- Talk partners are used daily to develop pupils understanding and reasoning skills to each other further developing purposeful oracy opportunities in maths lessons.
- Careful questioning is planned for enabling children to discover and explore around their learning.
- Ideas are shared and extended as a class.
- Clear models are used to scaffold learning.
- Misconceptions are addressed through mini plenaries, plenaries at the end of the lesson or at the start of the next day.
- Children are encouraged to look for patterns and share what they notice.

