# F:\Harrowbarrow-Logo-Blue-LowRes.jpgHARROWBARROW SCHOOL

Curriculum Intent Statement: Maths

Intent

The 2014 National Curriculum for Maths aims to ensure that all children:

* Become fluent in the fundamentals of Mathematics
* Are able to reason mathematically
* Can solve problems by applying their Mathematics

At Harrowbarrow, these skills are embedded within Maths lessons and developed consistently over time. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically and to solve problems. We are committed to developing children’s curiosity about the subject, fueling a passion for understanding and an appreciation of the power of Mathematics.

*Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.*

— William Paul Thurston, American mathematician

Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at Harrowbarrow reflect those found in high-performing education systems internationally, particularly those of east and south-east Asian countries such as Singapore, Japan, South Korea and China. These principles and features characterise this approach and convey how our curriculum is implemented:

* Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics.
* The large majority of children progress through the curriculum content at the same pace. Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
* If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention (catch-up and pre-teach) ensures the pupil is ready to move forward with the whole class in the next lesson.
* The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
* Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
* Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.
* Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.
* Children’s explanations and their proficiency in articulating mathematical reasoning, with the precise use of mathematical vocabulary, are supported through collaborative learning approaches. Pupils will work together to:
  + Evaluate mathematical statements
  + Classify mathematical objects
  + Interpret multiple representations
  + Create and solve problems
  + Analyse reasoning and solutions.

Collaboration is facilitated through discussion groups and dialogical activities such as think, pair, share.

* Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts. The early development of key mathematical skills allows pupils to thrive during the reasoning and problem aspects of Mathematics. Extra focus in this is delivered through NCETM's Mastering Number project, which the school is participating in from September 2021.
* Children in the Early Years Foundation Stage (EYFS) have a dialy maths diet which promotes their mathematical development through a range of play based opportunities.
* All children will experience mathematical concepts through visual, concrete and abstract representations. Further information about this is detailed in the school’s Calculation Policy.

To ensure whole school consistency and progression, we use the nationally recognised White Rose Maths scheme. The White Rose curriculum is a cumulative curriculum, so that once a topic is covered, it is met many times again in other contexts. For example, place value is revisited in addition and subtraction and multiplication and division. The curriculum is designed to have an emphasis on number, with a large proportion of time spent reinforcing number to build competency.

Lessons are planned to provide plenty of opportunities to build reasoning and problem solving elements into the curriculum. When introduced to a new concept, children have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Alongside this, children are encouraged to use pictorial representations. These representations can then be used to help reason and solve problems. Both concrete and pictorial representations support children’s understanding of abstract methods.

Mathematical topics are taught in blocks, to enable the achievement of ‘mastery’ over time.

These teaching blocks are broken down into smaller steps, to help children understand concepts better. This approach means that children do not cover too many concepts at once, which can lead to cognitive overload. Each lesson phase provides the means for children to achieve greater depth, with children who are quick to grasp new content, being offered rich and sophisticated problems, within the lesson as appropriate.

The school is part of the CODE (Cornwall & Devon) Maths Hub, working with colleagues across local schools to share best practice in maths and ensure teaching for mastery continues to evolve and improve through continuous professional development.

Impact

The school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Pupils can underperform in Mathematics because they think they cannot do it or are not naturally good at it.

Regular and ongoing assessment, through hot and cold tasks at the start and end of teaching units, informs teaching, as well as intervention, to support and enable the success of each child. These factors ensure we strive for high standards, increasing the number of pupils achieving the age related expectations by the end of the EYFS, KS1 & KS2.

Children will leave Harrowbarrow with the Mathematical skills to succeed in their ongoing education and increasingly understand the world around them. Children will not fear Mathematics but actively engage in the subjects with passion and enthusiasm.

**Maths End of Year Targets**

The school follows the White Rose Maths schemes of learning. These are closely aligned to the national curriculum for maths and set out term by term the progression of skills and learning content:

Please click this link to view [White Rose Maths](https://whiterosemaths.com/resources?year=year-1#filters) schemes of learning.