# Harbertonford C of E Primary
# Maths Curriculum Plan Years 1-6

## Intent

Our aim at Harbertonford is to equip all pupils with the skills and confidence to develop their mathematical fluency, problem solving and reasoning in preparation for SATs, further education and life beyond. Children are encouraged to develop curiosity about number and embrace the mathematics that surrounds them each day in a variety of contexts. We offer opportunities for children to develop understanding and mathematical articulacy through a cohesive progression of learning across the school in order to maximise their depth of learning. Mathematics at Harbertonford is an opportunity for pupils to take risks, challenge themselves and work both independently and collaboratively towards solving problems. Children will develop concise and accurate vocabulary in mathematics through consistent modelling by teachers and high expectations for the pupils. Our 'Four Rs' of resilience, reciprocity, resourcefulness and reflectiveness are evident throughout mathematics at Harbertonford. We strive to accelerate progress and improve outcomes for all of our pupils each year.

## Implementation

**PLANNING**

At Harbertonford, Maths No Problem is the core driver of our teaching and learning. This resource is complemented by fluency, problem-solving and reasoning tasks adapted from a variety of other sources. Lessons planned in all year groups adopt a Concrete-Pictorial-Abstract (CPA) approach to engage and add depth of understanding for all learners. The planning ensures that all learners are challenged at an appropriate level and support is allocated accordingly. National Curriculum objectives covered in each year group are highlighted throughout when taught on documents in staff Teams channel to ensure depth of coverage and also provide assessment of pupil understanding following each unit. This information is gathered in conjunction with Microsoft Forms elicitations and assessments for each unit of maths taught. In Falcons class, Years 1 & 2 receive separate lesson inputs by the Teacher or HLTA. All other classes share lesson inputs but have differentiation incorporated into each lesson. Medium-term NCETM planning maps out curriculum coverage. Home learning is now distributed, differentiated and submitted online using Teams and Class Notebook.

**LESSON STRUCTURE & CLASSROOM MANAGEMENT**

The focus on 'maths talk' is evident with talk partners, trios or whole-class discussions in response to frequent effective questioning throughout all maths lessons. This has been further embedded as part of our whole-school Oracy project across the curriculum. Teachers will challenge understanding through

regular questioning throughout maths lessons: How do you know? Can you prove it? Are you sure? What's the value? What's the same/different about? Can you explain that? What does your partner think? etc. Maths pairs and trios will be selected each week so children work with a range of other learners. Lessons typically begin with independent fluency or problem-solving tasks such as 'fluency in 5' or a 'silent starter'. This provides daily opportunities to recap core mathematical understanding and address misconceptions of all areas of the maths curriculum. A 'Recap' question then follows which is the 'Review' question from the previous lesson to generate a short dialogue linked to the specific learning from previous lesson. The main body of the lesson will include concrete, pictorial and abstract forms of mathematical learning and opportunities to develop fluency, problem-solving and reasoning. KS2 classes mark work together to provide opportunities to discuss understanding and instant feedback for the pupils to assist in gauging their understanding. Lessons conclude with a 'Review' question which is a five-minute discussion to reflect upon the learning of the lesson without written maths taking place. Each day, a short times-table activity takes place in each class either during or before the maths lesson. The use on blended learning now takes place across the school to support small groups with differentiated online inputs and activities.
Each class has a mathematics working wall to support learning in mathematics. It is a public display of the learning process and evolves as each day progresses to support children's independent work. Children know where maths resources are kept and are encouraged to independently use them to assist their own learning. A range of maths scaffolding resources are used by individuals identified as requiring them.

**TIMES TABLES**

Each day, a short times-table activity takes place in each class either during or before the maths lesson. All children from Year 1 upwards have access to Times Tables Rockstars (TTR), a web-based multiplication program which children can access both at home and school. All classes set table practice as part of weekly home learning and KS2 classes use TTR for a weekly times table practice as a class. Year 4 pupils practice for their MTC on iPads a number of times each week and monitor progression on individual score sheets.

**AFL, SELF-EDITING & FEEDBACK**

At Harbertonford we use **CAPED** as our core self-editing and feedback model. This takes place before, during and after a maths lesson. Children will typically respond to CAPED feedback using a purple polish pen or verbally as part of a discussion.
**C** – Check (pupils encouraged to correct mistakes)
**A** – Another Way (pupils to show their learning or calculate problem in a different way)
**P** – Prove It (pupils encouraged to prove there answer is correct)
**E** – Explain (pupils to use reasoning and mathematical language to expain their maths)
**D** – Draw (pupils to a method of 'drawing' their maths. Bar modelling, number line etc.)
KS2 classes provide immediate feedback through pupils marking their work at the end of maths lessons.

**VOCABULARY**

Rich maths vocabulary is frequently modelled and discussed by class teachers and pupils. The expectations are high for children to consistently use accurate, concise and age-appropriate mathematical vocabulary during discussions and written reasoning. By the time Year 6 pupils undertake SATs papers, children should have a clear understanding of KS1 and KS2 maths vocabulary to eliminate potential barriers to understanding questions. Teachers use regular questioning and activities around maths vocabulary to address misconceptions and dual meanings etc. The vocabulary for the current topic is displayed on the maths display in the classroom, alongside examples of children's work, images, numbers and symbols for the children to refer to and to support their learning. The focus on 'maths talk' is evident with talk partners, trios or whole-class discussions in response to frequent effective questioning throughout all maths lessons. By giving the children these opportunities to expand on their thinking and share their reasoning, they will develop their conceptual understanding and make connections between number facts.

**SEND, PRE-TEACHING & MOP-UP-MATHS**

Some individuals are specifically supported by additional adults, resources or differentiated activities in maths. Learners who have not kept up with the rest of the class during the lesson also have an opportunity for Mop-Up-Maths sessions with their teacher or TA in the afternoon or the following morning. If a teacher anticipates that individual might struggle to engage with the day's learning, they will often have a short pre-teaching session prior to the maths lesson. Intervention for pupils working significantly below age-related expectation is detailed in Class Provision Maps.

**CALCULATION POLICY**

This calculation policy is a guide for teaching the progression of calculation strategies throughout primary education at Harbertonford but does not consider any strategy to be specific for use only in particular year groups. An example of this is pupils using basic number lines in Year 6 to solve negative number problems or the basic use of visual and concrete representations of number across all year groups.

## Impact

Children at Harbertonford will develop confidence, understanding and enjoyment in mathematics along with a comprehensive set of problem-solving skills and strategies to take with them to the next stage of their education. They will be engaged, resilient and challenged and able to quickly recall facts and techniques in order to maximise their depth of learning.

They will use mathematics effectively as a tool in a wide variety of situations and will be able to present a justification or argument relating to a problem using mathematical language. They will understand the relevance of what they are learning in relation to real world concepts and develop a sense of curiosity about the subject.

Our children will develop confident recall of multiplication tables to 12x12 by the end of year 4 and our attainment data will exceed national.