



# **Maths at Harvills Hawthorn**

## **Intention**

At Harvills, we intend to develop confident mathematicians through the following means:

- We promote a lasting interest, appreciation and enjoyment of mathematics.
- We enable each pupil to develop, within his/her capabilities, the mathematical skills and understanding required for further study at the next stage of their education.
- We encourage pupils to make links between different areas of mathematics in order to understand the full picture.
- We foster and develop imagination, intuition, creativity and logical thinking.
- We make each pupil aware that mathematics provides a powerful means of communication.
- We provide each pupil with such mathematics as may be needed for his/her study in other subjects.
- We develop independent learning skills in mathematics.
- We challenge the common misconception that it is acceptable to be 'no good at maths.'

## **Implementation**

At Harvills Hawthorn Primary School, we pride ourselves on the consistent approach to teaching and learning that can be observed across all phases of school. This is achieved through our commitment to cutting edge, research-based CPD in addition to quality-first teaching on a daily basis. Expectations of staff and pupils are high, resulting in good or outstanding progress in all phases. There is a universal understanding of what great teaching, learning and assessment should entail. These strategies are consistently used throughout school and it is the expectation of leadership that all lessons will include a variety of these to enable learners to reach their full potential. Active learning is essential in all aspects of the lesson. All staff use the same terminology so that learners develop a knowledge and understanding of the different ways they learn.

At Harvills, we believe great teaching, learning and assessment must include the following:

- Understanding the Content
- Creating a Supportive Environment
- Maximising Opportunities to Learn
- Activating Hard Thinking (building ratio)

We are working hard to promote our pupils' English and ensure that they all achieve to the very best of their ability. Pupils are encouraged to read widely and often. English is fundamental to all subjects. Consequently, we believe that all stakeholders have a role to play in supporting and developing our pupils' English skills to ensure



they can communicate effectively in today's society. All children are expected to follow our school's non-negotiables for presentation. This includes a focus on learning to write in the cursive script.

## **Mathematics at Harvills Hawthorn Primary**

- The Harvills Maths Curriculum follows the main concepts of fluency, reasoning and problem solving.
- We plan from the 2014 mathematics curriculum, which divides the curriculum in to 7 units (8 for year 6): Number and Place Value, Addition and Subtraction, Multiplication and Division, Fractions, Decimals, Percentages and Ratio, Algebra (Year 6 and G&T), Geometry, Measure, Statistics
- The weekly plan consists of 5 'small steps' lessons, based on the White Rose curriculum and the needs of the children.
- Every new concept (including mental strategies) is introduced following the teaching model: concrete – pictorial – abstract.
- Lessons are self-differentiated, allowing all children to be challenged with no 'ceiling' on attainment.
- In the majority of cases, differentiation is implemented using the CPA teaching model. Children working significantly below the age-related expectation, however, may be following a personalised curriculum.
- Children self and peer mark in order to assess how successful they have been and to identify what their next steps will be.
- The proportion of curriculum time allocated to each area varies from year group to year group, as set out in the curriculum document and the White Rose Maths timetable.

## **Subject Specific Information: Arithmetic**

A range of arithmetic skills is taught and practised through the White Rose Maths curriculum, including the Daily Review. In addition, a daily multiplication tables lesson takes place in year 3 and year 4 in preparation for the MTC at the end of year 4 and the challenges of UKS2.

## **Mental and Oral Strategies**

Skills to be taught and practised in each year group are outlined under the Arithmetic section of the Maths Scheme of Work. Amongst other skills, it is expected that children should know the following times table by the end of the stated year groups:

Year 1 – Counting in multiples of 2, 5 and 10

Year 2 – Recall of  $\times$  and  $\div$  facts for 2, 5 and 10 times tables

Year 3 – As year 2 plus 3, 4 and 8

Year 4 – All times tables up to  $12 \times 12$

Years 5 and 6 – consolidation of previous years plus squares, cubes, square roots and multiplication of decimal numbers.



## **Written Methods**

Children will be taught series of steps in order to secure understanding of the standard written methods for addition (column method), subtraction (decomposition), multiplication (column method) and division ("bus stop" method). The White Rose curriculum leads the children through the small steps required to achieve these methods, using the concrete – pictorial – abstract method.

Children should be secure in the written methods by the end of the following years:

Year 3 – addition and subtraction.

Year 4 – multiplication

Year 5 – division

## **Mathematical Facts**

Basic mathematical facts, including multiplication tables, doubles and halves, fraction, decimal and percentage equivalents, names of shapes and types of angles, are practised in school and at home via our 'belt test' system. Children are given a set of facts to learn and these are tested weekly. When a child has achieved all of the facts for a test, they receive a mini-belt and a certificate. This system helps the children with their rapid recall of facts and removed potential barriers to solving more complex mathematical problems.

## **Impact**

- Fluency: children can recall facts, use and recall mathematical vocabulary and use a range of strategies across the curriculum.
- Problem solving: children can apply their mathematical skills to a range of problems, investigations and real life situations.
- Reasoning: children can explain their methods, spot and correct errors and mentor others through questioning and adapted explanations.