Subject on a page: Maths

At Hollywell Primary School, we want all our pupils to have a deep, sustained understanding of mathematical concepts so that they become inspired, happy and confident lifelong mathematicians, throughout their learning and into their adult life.

Intent – we aim to...

- Develop well rounded capable mathematicians who have an enjoyment and curiosity for mathematics.
- For all children to have a secure grasp of mental maths skills, multiplication tables and formal written methods.
- To inspire children to take learning risks and develop resilience when tackling mathematical problems.
- Use manipulatives and models to support and develop children's depth of understanding of the mathematical concepts.
- For children to use mathematics confidently within everyday life.

Planning and implementation: How do we achieve our aims?

Maths teaching at Hollywell Primary School is based on a mastery model building progressively from EYFS to year 6 to ensure the knowledge is built on firm foundations. Maths lessons are developed around the 5 Big Ideas.

Variation **Mathematical Thinking** **Fluency** **Representation and Structure** **Small, coherent steps**

Planning and Teaching

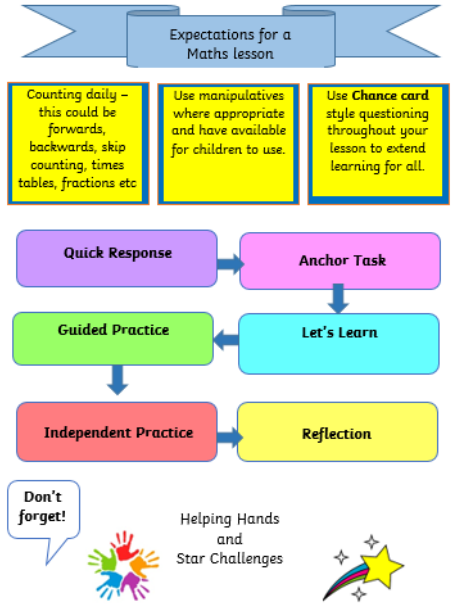
A whole school approach

Maths is taught across the school from EYFS using a mastery model approach. It is taught as a discrete subject in planned and arranged unit blocks. The lessons are designed using structures from White Rose Maths.
We believe that the unit-based approach will enable the achievement of a greater depth of learning.
Teachers ensure that maths planning builds upon the knowledge and skills development of the previous years as well as preparing the children for the next step of their maths journey.

5 Big Ideas of Mastery

Coherence – Planning and sequencing of ideas across lessons provides a connected, coherent mathematical journey.
Variation – Variation is twofold. Conceptual variation is about how the concept being taught is represented, often in more way than one to draw attention to the critical aspects, the concept and non-concept.
Procedural variation is used within the lesson, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structures.
Mathematical thinking – Taught ideas must be worked on by the student, thought about, reasoned with, discussed with others and connections made.
Fluency – Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.
Representation and Structure – Representations used in lessons expose the mathematical structure being taught, to help students achieve deep understanding. use of a range of ways both to represent a concept or non-concept, and to expose structures

Lesson Design



Calculation policy

A calculation policy has been written to ensure consistency across the school from EYFS to year 6. Clear models and representations used are outlined in each year group and are directly linked to the National Curriculum expectations.

An inclusive curriculum

The majority of children are taught age related expectations. The class is kept together and everyone moves through the lesson together, at the same pace. Depth is achieved by the inclusion of reasoning and problem-solving activities, with carefully considered variation throughout teaching, to check the understanding of a concept. Children working outside of the year group may be supported using individually tailored sessions. Catchup support and interventions are used to support children to close gaps in learning.

Manipulatives

The Concrete – Pictorial – Abstract approach is used. Manipulatives support conceptual understanding, mathematical thinking and reasoning. They enable children to internalize procedures and processes and show what they can do without relying on verbal skills.

Number Fluency

Number bonds and times tables are taught throughout school focusing on recall, fluency and eventually speed. TTRS's is used from Year 2 to 6 to enable children to practice their times tables online at home and at school.

The Mathematics curriculum

Early Years Foundation Stage

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupil's interests and current themes and will focus on the expectations from Development Matters / Early Years Outcomes for Number and Numerical Patterns. Mathematical understanding can be developed through stories, songs, games, imaginative play, child initiated learning and structured teaching. As pupils progress, they will be encouraged to record their mathematical thinking in a more formal way.

Key Stage 1

The focus of teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This involves working with numerals, words and the four operations, including with practical resources. At this stage, pupils develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching involves using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. Pupils read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1. By the end of year 2, we aim for all pupils to know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Lower Key Stage 2

The focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value, to develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. Pupils use measuring instruments with increasing accuracy and make connections between measure and number. Pupils read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling. By the end of year 4, we aim for all pupils to have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Upper Key Stage 2

The focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This develops the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures consolidates and extends knowledge developed in number. Teaching ensures that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. Pupils should read, spell and pronounce mathematical vocabulary correctly. By the end of year 6, we aim for all pupils to be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Assessment

How and when?

At Hollywell Primary School, we believe that assessment starts by involving pupils in discussing learning objectives and criteria for success. Formative assessment also takes place during quick response/anchor task activities at the beginning of each lesson. Summative assessment takes place at the end of each unit. Teachers use assessment to advance pupils' learning by adapting the pace, challenge and content of activities but also by providing time for children to reflect on and assess their own work.

The following forms of summative assessment are used:

Baseline assessment in EYFS

NFER tests in Years 1,3,4 and 5 at the end of the Summer term

End of Key Stage statutory assessments in Years 2 and 6

Progress is recorded three times a year.

Impact

Children talk confidently about maths using appropriate vocabulary.

Children demonstrate a love of mathematical skills and can apply their knowledge to problem solve.

Children have a secure knowledge of formal written methods.

Children have strong mental maths skills and rapid recall of times tables.

Children apply maths knowledge confidently across the curriculum such as in science and design and technology.

Outcomes at the end of each key stage is above national expectations and progress is strong.