

HIGH LITTLETON CHURCH OF ENGLAND PRIMARY SCHOOL

MATHEMATICS POLICY

Rationale

Mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

School curriculum

The programmes of study for mathematics are set out year-by-year for key stages 1 and 2. We are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, we therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, we can introduce key stage content during an earlier key stage, if appropriate. We are also required to set out our school curriculum for mathematics on a year-by-year basis and make this information available online.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This will involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching will also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should 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. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

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. This will ensure that pupils 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 will 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. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should 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 should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils will 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 will be introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures will consolidate and extend knowledge developed in number. Teaching will also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Assessment

Teachers will make sound judgments of pupils' attainment using APP and ensure progression by diagnosing their strengths and areas for development. Classroom observation, oral work, discussion with children, open-ended tasks and extended work offer opportunities for assessment. More focused assessments will be carried out during an identified assessment week three times a year.

Equal Opportunities

(See Equal Opportunities Policy)

Health and Safety

(See Health and Safety Policy)

Role of the Subject Leader

- To demonstrate good practice in the teaching of mathematics
- To support colleagues
- To monitor mathematics teaching in the school by:
 - ✓ lesson observations,
 - ✓ annual work scrutiny
 - ✓ talking with children and staff,
 - ✓ gathering annotated samples of children's work
- To hold staff meetings to discuss relevant matters
- To refine/re-develop the SOW as necessary
- To share information and audit training needs of staff
- To make a yearly Action Plan to focus on specific and identified areas needing development
- To ensure that resources and equipment are readily available and centrally stored.

Monitoring and Review

This policy will be reviewed every two years.

IG

September 2018

Review: September 2020