

## Curriculum Overview High Ham Church of England Primary School

### Curriculum Area: Mathematics

Our curriculum approach to mathematics reflects our ethos statement:

**'Discovering, Learning, Believing Together'.**

We are keen for pupils to discover their own passion for mathematical learning.

The name of the current curriculum lead is on the school website on the curriculum page.

#### Intent

For all children to become resilient and fluent mathematicians, who are able to problem solve and reason mathematically. For children to have the opportunity to develop a sense of enjoyment and curiosity about mathematics. For children to be encouraged to make connections and apply their skills and knowledge across other curriculum areas.

#### Implementation

All children will study mathematics daily and to ensure consistency, the school uses the DfE approved 'Power Maths' materials. Within the mathematics lesson, new concepts are introduced through an initial problem-solving activity that encourages class and group discussion and offers opportunities to reason and problem solve. Great emphasis is placed on vocabulary and in Key Stage 1, a focus on responding to mathematical questions with a sentence is a key strategy. All children are supported in their understanding by using concrete, pictorial and abstract materials. Misconceptions and difficulties are identified and are addressed using the supporting materials within the same day/week to ensure that gaps in understanding are addressed. Alongside daily mathematics lessons an additional 15 minutes a day is spent focusing on fluency. Key Stage 1 classes use Number Sense to secure confidence and flexibility with number and achieve fluency in addition and subtraction facts. Key Stage 2 classes focus on multiplication tables and developing efficient mental strategies for solving problems.

#### Impact

At each stage children have developed secure and deep understanding of mathematical concepts that they are able to apply within a range of contexts. Children are able to use correct vocabulary and be able to see relationships and make connections to support their reasoning.

#### Planning

Teachers use 'Power Maths' materials to support their planning and delivery of the mathematics curriculum in manageable steps. Planning can be found on the school website for Mathematics and there are separate yearly overviews for each year group, which reflect the workbooks and textbooks which class teachers use with pupils. These have been added to our English yearly overview plans and have been divided into different year groups: Reception Year 1 Year 2 Year 3 Year 4 Year 5 Year 6.

#### Knowledge and skills progression through the school

The school website has links to planning which shows how our yearly overviews and clearly demonstrates how mathematical learning lesson sequences are increasing the depth of understanding and range of knowledge throughout the primary years. The particular KPI's (Key Performance Indicators) are outlined below:

#### Number & Place Value

##### Y1

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.
- Given a number, identify one more and one less.

#### Y4

- Count in multiples of 6, 7, 9, 25 and 1000.
- Count backwards through zero to include negative numbers
- Order and compare numbers beyond 1000.
- Round any number to the nearest 10, 100 or 1000.

#### Y5

- Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.

#### Y6

- Round any whole number to a required degree of accuracy.
- Use negative numbers in context, and calculate intervals across zero.

### **Measurement**

#### Y1

- Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half].
- Mass/weight [for example, heavy/light, heavier than, lighter than].
- Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter].
- Time [for example, quicker, slower, earlier, later].
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

#### Y4

- Recall multiplication and division facts for multiplication tables up to 12 x 12.

#### Y5

- Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).
- Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
- Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>).

### **Addition & Subtraction**

#### Y2

- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
- Applying their increasing knowledge of mental and written methods.
- To 20 fluently.

#### Y3

- Add and subtract numbers mentally, including:
  - a three-digit number and ones;
  - a three digit number and tens;
  - a three digit number and hundreds.

### **Fractions**

#### Y2

- Recognise, find, name and write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$ , and  $\frac{3}{4}$  of a length, shape, set of objects or quantity.

### Y3

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- Recognise and use fractions as numbers: unit fractions (numerator of 1) and non-unit fractions with small denominators.

### Y6

- Use written division methods in cases where the answer has up to two decimal places.
- Solve problems which require answers to be rounded to specified degrees of accuracy.
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

## **Geometry: Properties of Shapes**

### Y2

- Compare and sort common 2-D and 3-D shapes and everyday objects.

### Y3

- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

### Y4

- Plot specified points and draw sides to complete a given polygon.

### Y6

- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.

## **Statistics**

### Y2

- Ask and answer questions about totalling and comparing categorical data.

### Y6

- Interpret pie charts and line graphs and use these to solve problems.
- Calculate and interpret the mean as an average.

## **Multiplication & Division**

### Y4

- Recall multiplication and division facts for multiplication tables up to 12 x 12.

### Y5

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

## **Algebra**

- Use simple *formulae*.

## **Recording**

Children record their mathematics in individual workbooks. This is marked in line with the school marking policy. Not all children will complete the 'Challenge' or 'Reflect' section in their workbooks. The 'Reflect' question may be used by the class teacher to draw a lesson or concept together and form part of their summative assessment.

## **Assessment**

Teachers use the 'Reflect' question as part of their summative assessment. At the end of each taught unit an 'end of unit' check is completed. Each term, a formative test is carried out and teachers use this information to ensure children have secure knowledge before moving on.

## **Reporting**

On our annual reports, which are given to parents at the end of the year, a judgement will be made regarding their child's attainment in Maths relating to the national curriculum for their year group. For example, HNM (Has Not Met), ARE (Age Related Expectations), GD (Greater Depth).

## **Monitoring**

[#HighHamMaths](#) Twitter feeds shows the learning objectives being taught. Curriculum leader to work alongside their curriculum partner to collate evidence including analysing how planning for learning episodes matches the evidence in books, learning walks, speaking to pupils about their learning and discussing with colleagues what has gone well as well as any lessons learnt. Where relevant the implementation of school policies (such as marking) will be reviewed considering the well-being school's agenda (aspect of the School Development Plan) to ensure the workload for mathematics is both manageable and is making an impact on the children's learning.

## **Review**

April 2023