

Curriculum Overview High Ham Church of England Primary School

Curriculum Area: Mathematics

Curriculum Lead: Ann Edwards

*Our curriculum approach to mathematics reflects our ethos statement '**Discovering, learning, believing Together**' – in particular we are keen for pupils to discover their own passion for mathematical learning.*

Intent

For all children to become resilient, 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. 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 KS1 a focus on responding to mathematical questions with a sentence is a key strategy. All children are supported in their understanding through the use of 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. We use the online programs 'Times Table Rockstars' and 'Mathletics' in Key Stage 2 to support children's fluency.

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. Mathematics overviews are added to the website and there are separate yearly overviews for each year group which reflect the workbooks and textbooks which class teachers use with pupils. These are divided into year groups. Year 1 Year 2 Year 3 Year 4 Year 5 Year 6

Knowledge and skills progression through the school

At High Ham in KS1 and KS2 skills and knowledge will be developed through each phase of learning by building on previous levels of understanding. The particular KPI's (Key Performance Indicators) are outlined below but a full copy is available which shows progression in every step throughout the whole of the Primary years.

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 (cm²) and square metres (m²).

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 12×12 .

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 maybe 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

At the end of the year on the annual report to parents a judgment 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](#) show the learning objectives being taught. Curriculum leader to collate evidence including lesson learning walks during the year.

Review

October 2020

Originally written and reviewed by Ann Edwards and Jane Rosser. Oct 2019.