



Hebden Royd C.E. (VA) Primary &
Nursery School

Mathematics Curriculum Policy 2022

Intent

The intent of our mathematics curriculum is to provide children with a foundation for understanding number, reasoning, thinking logically and problem solving with resilience so that they are fully prepared for the future. It is essential that these keystones of Mathematics are embedded throughout all strands of the National Curriculum. By adopting a Mastery approach, it is also intended that all children, regardless of their starting point, will maximise their academic achievement and leave Hebden Royd Primary School with an appreciation and enthusiasm for Maths, resulting in a lifelong positive relationship with number.

Implementation

We follow the White Rose Maths Hub scheme of work, which we have carefully adapted to suit our children's needs.

How it is Taught

Throughout the year, Mathematics is taught and assessed over 8 main areas:

- Number- place value
- Number- addition and subtraction
- Number- multiplication and division
- Number- Fractions
- Measurement
- Geometry- Properties of shapes
- Geometry- Position and direction
- Statistics (Key Stage 2 only)

We aim to ensure that pupils can:

- Have the quality teaching and resources needed for them to progress and achieve.
- 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.
- Lessons use a Concrete, Pictorial and Abstract approach to guide children through their understanding of mathematical processes.
- Revise and Review consolidation lessons are used to revisit previous learning and ensure Mathematics skills are embedded.
- Homework is set to develop and review children's learning.
- Where possible, links are made with other subjects across the curriculum.

At Hebden Royd, mathematics takes place daily. We teach to the top, allowing all children to

access their own year group's curriculum. Intervention is mostly immediate, but otherwise, the same day. Within each lesson, we aim to build on previous knowledge and scaffold the children to progress further and achieve the objective set by the teacher. Responsive teaching is implemented as much as possible in which teachers and teaching assistants are assessing the children within the lesson to ensure, if they are struggling, that they receive the help that is needed and any misconceptions are addressed before the end of the lesson.

EYFS

In Early Years, Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure.

Pupils are taught to:

NUMBER

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts

NUMERICAL PATTERNS

- Verbally count beyond 20, recognising the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognising when one quantity is
- greater than, less than or the same as the other quantity.
- Explore and represent patterns within numbers up to 10, including evens and odds,
- double facts and how quantities can be distributed equally.

Key Stage 1 and 2

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. 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 should involve working with numerals, words and the four operations, including with practical resources (e.g. 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 should 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 principal 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 should 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 should 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. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The principal 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 should 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 should consolidate and extend knowledge developed in number. Teaching should 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. Pupils should read, spell and pronounce mathematical vocabulary correctly.

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations.

Teaching and Learning

We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning. Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games. Teachers plan problem solving and investigational activities every week to ensure that pupils develop the skills of mathematical thinking and enquiry. To provide adequate time for developing mathematics, maths is taught daily and discretely. Maths lessons may vary in length but will usually last for about 45 minutes in Key Stage 1 and 60 minutes in Key Stage 2. The curriculum is delivered by class teachers. Teachers use a range of teaching strategies to engage the children in maths and ensure progress is made by all children within a class; no set formula is used.

A typical lesson would include:

- Both teaching input and pupil activities,
- A balance between whole class, guided grouped and independent work, (groups, pairs and individual work)
- Effectively differentiated activities/objectives and appropriate challenge. Sometimes the focus for the session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier.

The focus of the session may vary for different children depending on their learning needs. At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home. Teachers plan learning that is differentiated to meet the needs of all pupils.

Impact

As a result of our Mathematics teaching at Hebden Royd you will see:

- Engaged children who are all challenged.
- Confident children who can all talk about Mathematics and their learning and the links between Mathematical topics.
- Lessons that use a variety of resources to support learning.
- Different representations of mathematical concepts.
- Learning that is tracked and monitored to ensure all children make good progress.

Social, Moral, Spiritual and Cultural

Mathematics contributes to our SMSC development through:

- Spiritual development: through helping children obtain an insight into the infinite, and through explaining the underlying mathematical principles behind natural forms and patterns.
- Moral development: helping children recognise how logical reasoning can be used to consider the consequences of particular decisions and choices and helping them learn the value of mathematical truth.
- Social development: through helping children work together productively on complex mathematical tasks and helping them see that the result is often better than any of them could achieve separately.
- Cultural development: through helping children appreciate that mathematical thought contributes to the development of our culture and is becoming increasingly central to our highly technological future, and through recognising that mathematicians from many cultures have contributed to the development of modern-day mathematics.

Inclusion and equal opportunities

All children are provided with equal access to the mathematics curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

Resources

Resources which are not used or required regularly are stored and accessed by teachers at the beginning of a topic.

Marking

Teachers are expected to adhere to the school's marking policy when marking books.

Monitoring and Evaluation

The Curriculum leaders, alongside SLT, are responsible for monitoring and evaluating curriculum progress. This is done through pupil-led evaluations, lesson observations, pupil interviews, staff discussions and audit of resources.

Review Framework

This policy will be reviewed every 3 years (or sooner in the event of revised legislation or guidance).