

Maths Policy

**March 2025**

**To be reviewed: Sept 25**

**School Vision**

To create a safe, caring and happy school community of children, staff and parents where Christian values are upheld and every child is valued as an individual. To nurture creative, independent, life-long learners within an irresistible curriculum that develops resilience, inspiration and opportunity. Core Values: Kind, Helpful, Honest, Grateful, Independent, Unique and Together.

Highburton CE (C) First Academy aims to serve its community by providing an education of the highest quality within the context of Christian belief and practice. It encourages an understanding of the meaning and significance of faith and promotes Christian values through the experience it offers to all its pupils.

At Highburton First Academy, we believe that to enable our pupils to learn effectively, they need to feel safe in their environment and be both socially and emotionally ready to learn. We understand the importance of holistic development and offer nurturing and enriching experiences to enable the development of the whole child.

We recognise that some of our pupils are not always emotionally ready to learn when they come to Highburton CE (VC) First Academy and require an increased level of support for them to access the wider curriculum.

# Curriculum Aims

* Provide a broad and balanced education for all pupils
* Ignite a love of learning in all pupils and nurture a Growth Mindset.
* Enable pupils to develop knowledge, understand concepts and acquire skills, and be able to choose and apply these in relevant situations
* Support pupils’ spiritual, moral, social and cultural development
* Support pupils’ physical development and responsibility for their own health, and enable them to be active
* Promote a positive attitude towards learning
* Ensure equal access to learning, with high expectations for every pupil and appropriate levels of challenge and support
* Promote an understanding and appreciation for their community and the world in which they live and prepare them for later life.
* Promote the learning and development of our youngest children and ensure they are ready for Key Stage 1

**Highburton’s Maths Vision**

*At Highburton First Academy, our maths curriculum is designed to provide the children with the mathematical fundamentals as the foundations so that they can develop their ability to apply them to a wide variety of problem-solving opportunities.*

**Our Vision capsulates the progression steps of a maths lesson:**

* At the start of a lesson, the children are to complete **retrieval practice** on previous concepts taught to allow time for recap and building on **working memory**.
* All children start at the same starting point using **manipulatives** as a practical approach to give the opportunity for **maths talk** and **discussion** supporting a deeper understanding.
* **Vocabulary** is taught discretely to understand its meaning and purpose in the skill being taught.
* **Stem sentences** are used to explain the concept and allow for maths talk to be explored further.
* Through the lesson, the children are exposed **to concrete, pictorial and abstract** (CPA) variations of the concept which is shown in the progression steps of the lesson.
* Children are expected to complete a minimum number of **fluency questions** to ensure they have grasped the mathematical skill.
* The opportunity to apply the skill to **real life scenarios** using **stories** as a teaching tool.
* Independent practice is focused time to apply the skill to a variety of **problem-solving** questions allowing to see patterns and investigate concepts posing challenge.

# Maths Aims

We aim to provide pupils with a maths curriculum and high-quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and manipulatives so that pupils can develop their mathematical skills to the full.

Using the programmes of study from the National Curriculum 2014 it is our aim to develop:

* A positive attitude towards maths and an awareness of the fascination of maths.
* Competence and confidence in mathematical knowledge, concepts and skills.
* An ability to solve problems, to reason, to think logically and to work systematically and accurately.
* Initiative and an ability to work both independently and in cooperation with others.
* An ability to communicate mathematically.
* An ability to use and apply maths across the curriculum and in real life.
* An understanding of maths through a process of enquiry and experimentation.

**Teaching for mastery -What does mastering maths mean?**

Mastering maths means acquiring a deep, secure and adaptable understanding of the subject. Central to the development of mastery in our classrooms, here, at Highburton are the “five big ideas”- these have been drawn from research evidence, underpinning teaching for mastery. This diagram is used to help bind these ideas together:

Key elements of a maths lesson:

|  |  |  |  |
| --- | --- | --- | --- |
| **Element of the lesson** | **Teacher Input** | **Independent work** | **Assessment**  |
| Flashback 4/retrieval | T to adapt for cohort  | children answer on w/b | AfL – T to identify gaps and then edit following flashback 4 in response  |
| Main input | T to model new learning – my turn | children to answer on w/b when their turnUse of partner work (mixed ability pairs) | AfL – T to assess and identify pupils who need more input and pull them for an additional support |
| Worksheet | T – work with identified group – extra input, new learning reasoning input | Blue zone – independent working (time based on age)For children with significant gaps or working behind their peers, a worksheet at a different start point will be provided. | T to assess – mini plenary – children mark (UKS2 independently mark) |
| Summary | T – to choose a deeper learning problem or specific area of weakness for the class to revisit at the end of the lesson | listen and correct if attempted | Next steps to move the children forward |

**Coherence**

Connecting new ideas to concepts that have already been understood, and ensuring that, once understood and mastered, new ideas are used again in next steps of learning- all steps being small steps.

## Representation and Structure

Representations used in lessons expose the mathematical structure being taught. These representations are practical and pictorial models. The aim being that students can do the maths without recourse to the representation.

## Mathematical Thinking

If maths concepts are to be understood deeply, they must not merely be passively received but must be worked on by the pupil, thought about, reasoned with and discussed with others.

## Fluency

Quick and efficient recall of facts and **procedures** and the flexibility to move between different contexts and representations of maths. **Procedural fluency** is the ability to apply procedures accurately, efficiently, and flexibly; to transfer procedures to different problems and contexts; to build or modify procedures from other procedures; and to recognise when one strategy or procedure is more appropriate to apply than another.

## Variation

Varying the way, a concept is initially presented to students, by giving examples that display a concept as well as those that do not display it. Also, carefully varying practice questions so that mechanical repetition is avoided, and thinking is encouraged.

**Teaching for Mastery Principles:**

* Teaching is underpinned by a belief in the importance of maths and that most children can succeed in learning maths in line with national expectations for the end of each key stage.
* The whole class is taught maths together, with no differentiation by acceleration to new content. The learning needs of individual pupils are addressed through careful small step scaffolding, skilful questioning and appropriate intervention is given to provide the necessary support and challenge.
* Factual knowledge (e.g. number bonds and timetables), procedural knowledge (e.g. formal written methods) and conceptual knowledge (e.g. place value) are taught in a fully integrated way and are **all** seen as important elements in the learning of maths.
* The reasoning behind mathematical processes is emphasised. Teacher/pupil interaction explores in detail **how** answers were obtained, **why** the method/strategy worked and what might be the most efficient method/strategy.
* Interim methods (e.g. expanded methods for addition and subtraction) to support the development of formal written algorithms are used for a short period of time only, as a stepping stone into efficient and compact methods.
* Precise mathematical language coached in sentences (stem sentences) is used by the teacher so mathematical ideas are conveyed with clarity and precision.
* Conceptual variation and procedural variation are used. These provide intelligent practice that embeds deep learning.
* Sufficient time is spent on key concepts to ensure learning is well developed and deeply embedded before moving on.

# Curriculum Design

* Programmes of study follow the Whiterose Scheme. The teacher carefully sequences concepts seeking to develop a coherent and comprehensive conceptual pathway.
* Learning is broken down into small steps, connected steps building on from what pupils already know. There is retrieval of previous learning (year and steps before). The focus is on delivering deep understanding of concepts within the year groups expectation.
* Difficult points and potential misconceptions are identified in advance. Teachers plan to address misconceptions. Alongside this deep consideration is given to key questions– these are designed to challenge thinking and develop learning for all pupils – these can be found on the Whiterose Scheme of work.
* Contexts and representations are carefully chosen to develop reasoning skills and to help pupils link concrete ideas to abstract mathematical concepts. These include the part whole model (cherry diagram) and the bar model.
* CPA (concrete-practical-abstract) model is used throughout school from foundation to Year 5. Practical apparatus is used to support conceptual understanding and children work together to discuss and model. Alongside this equipment the teachers select high quality materials to support tasks or devise their own using mastery materials.
* Follow up work continues to follow the CPA approach and children move onto deeper learning task as soon as understanding is shown. This is through the ‘I do, you do’ approach.

# Features of teaching

* Lessons are sharply focused; digression is generally avoided. New key learning is explicitly identified.
* There is regular interchange between concrete/contextual ideas, pictorial representations and their abstract/symbolic representation.
* Mathematical generalisations are emphasised as they emerge from underlying maths, which is thoroughly explored within the contexts that make sense to the pupils. The questions “Is it always true?” “Sometimes true?” “Never true?” are used to explore these moments.
* Making comparisons is an important feature of developing deep knowledge. The questions “What’s the same?” and “What’s different?” are often used to draw attention to essential features in a concept.
* Repetition of key ideas (e.g. in the form of whole class recitation, repeating to a learning partner etc.) is used frequently. This helps to verbalise and embed mathematical ideas and provides pupils with a shared language to think about and communicate maths.
* Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and completion of short activities.
* Formative assessment is carried out throughout the lesson; the teacher regularly checks pupil’s knowledge and understanding and adjusts the lesson accordingly. Gaps in pupil’s knowledge are identified and rapidly addressed. This may involve intervention work in school or with parents or some extra support at a different time.
* Children document their learning in their maths books.
* Guided practice is used through which the children experience a new concept (with adult or peer) before moving onto independent tasks.
* Problems are discussed deeply and structured by the teacher, using the children’s methods when possible, to investigate different ways to solve it. Children evaluate the methods themselves. The key question “What do I already know?” is used throughout the school.
* Children should be able to apply their understanding to independent tasks once fluency is achieved.

# Marking

Marking is live and response providing instant verbal feedback whilst the children are working to show where the children are correct or revisit their answer. Verbal feedback and same day intervention is used to pick up any misconceptions immediately. Quick intervention ensures children have time to clarify their thinking and remain on target without misconceptions becoming rooted.

**Exercise books for recording**

All work done in maths is done in pencil, rubbers are discouraged when completing number work, children should cross out work with one or two straight lines, allowing the teacher to analyse the errors when marking. Children are expected to stick in the sheet on the left and show their workings on right, ensuring one digit per box.

## *Assessment and Record Keeping*

AfL is ongoing through class interactions and evidence from the children’s books. In response, daily alterations to plans (powerpoints/notebooks) is part of practice. Each half-term the teacher makes a judgement in line with the national expectations completing Insight. The maths coordinator and SENDCO then highlight any children who require focussed attention.

***THE GOVERNING BODY***

The governors are reported to on an annual basis.