

Curriculum Policy: Mathematics

Intention

The aims and ambition of the subject

Our ambition is that all pupils become confident, resilient, and fluent mathematicians. Pupils develop their declarative, procedural and conditional knowledge through a well-balanced mastery approach in lessons

The curriculum is planned to ensure that pupils:

- strengthen their fluency and recall of key mathematical facts
- Secure understanding of formal methods and procedures
- develop their ability to articulate mathematical reasoning.
- deepen their understanding of mathematical structures and representations.
- systematically solve problems in the most effective way
- make connections between areas within mathematics and the wider curriculum

Our aim is that pupils develop the confidence, resilience and knowledge to succeed. Our high expectations and carefully planned curriculum enables this to become reality. At Hexham Middle we strive to empower pupils with knowledge of where mathematics can take them in society and the wider world.

At Hexham Middle we continue to work with The Great North Maths Hub as part of the 'Sustaining Mastery Work Group'. This allows teachers to continually implement and improve the mastery approach, working with leading experts to promote a love of mathematics and secure understanding.

Curriculum

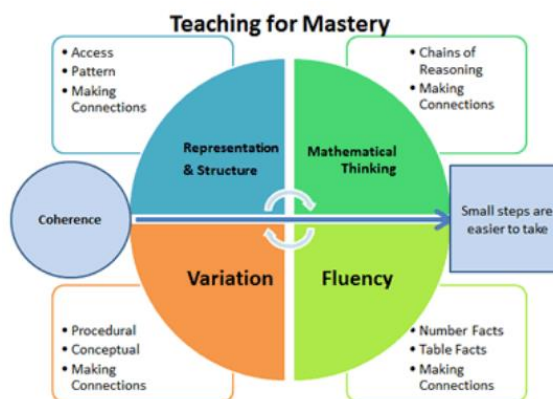
Curriculum priorities and sequencing

The curriculum is structured through well-sequenced blocks of learning. Each block is designed to ensure that pupils revisit prior learning and enables them to make connections between that and new knowledge being learnt. The curriculum has been designed using a mix of the DfE's 'Ready to Progress' Criteria, White Rose Maths and the NCETM Curriculum Prioritisation framework.

At Hexham Middle we strongly believe that all pupils can succeed in mathematics through carefully considered and well planned small steps of learning.

We support understanding of how and why mathematics works through varied structures and representations, including concrete, pictorial and abstract representations.

We strongly feel that memorisation and retention of the key learning is vital in allowing pupils to build schema for application to more complex problem solving.



NCETM: Teaching for Mastery Strands

Pedagogy

What will I see if I visit a lesson at HMS?

At HMS, we use evidence-informed teaching structures. Based on Rosenshine's Principles, teachers implement our '10 Elements of Great Teaching'.

Lessons are structured using guiding principles:

- Retrieval
- Why now?
- Learn Together
- Guided Practice
- Independent Practice
- Review

Our teaching approach in mathematics lessons ensures that pupils know more whilst building on previous learning, can do more independently and remember more over time through spaced retrieval and connecting opportunities.

Lessons will feature:

- Memory tasks
- Links and connections
- Fluency and fact recall.
- Problem solving and reasoning (both written and verbal)
- Skillful questioning
- 'I do, we do, you do' modelling.
- Dive Deeper opportunities.
- Regular assessment
- Self-reflection/assessment

Assessment and Feedback

How we know that we are having impact

Continual assessment in mathematics lessons allows teachers to shape the learning for their classes.

All mathematics lessons revisit prior learning and feature targeted questioning, quizzing and modelled approaches allowing teachers to assess pupils' understanding. Pupils are expected to self-assess throughout lessons to address misconceptions.

Assessments include:

- **TLF Assessments** – to identify gaps in knowledge and promote retention.
- **Arithmetic Assessments** – to ensure that pupils recall facts and develop fluency in formal methods
- **Regular Summative Assessments** – pupils complete assessments to promote retention and application of learning
- **Review to Remember** – pupils engage in sessions to review prior learning and check the security of their learning
- **Skills Homework** – weekly skills homework ensures that pupils recall core facts (in accordance with the HMS KIRFs), formal methods and apply this knowledge to reasoning and problem solving.

At the start of blocks of learning, teachers assess pupils' starting points so that subsequent learning can be adapted for the class. In KS3, pupils complete 'Can you still...?' assessments to review prior learning.

Feedback is given throughout lessons through small step teaching. Pupils will use red pens to review their learning. Teachers provide feedback which pupils act upon to address gaps or to deepen their understanding. Written feedback is given in response to assessment tasks.

Ambition for Vulnerable Learners

How our curriculum is designed to meet individual needs

Lessons are designed to enable all pupils to succeed and achieve the aims of our ambitious curriculum.

- Lessons are planned in small steps.
- Routines are consistent and embedded.
- Explicit instruction features in well-planned steps of learning.
- Metacognitive strategies are woven throughout – teachers narrate their thinking and approaches to model the learning
- Guided and independent practice takes place daily within lessons.
- Scaffolding such as worked and guided examples and stem sentences are used to support pupil understanding.
- Technology is used to support learning.
- Pupils are exposed to counting, calculation practice and fact recall regularly.
- Pupils are encouraged to use concrete and pictorial representations to support their learning.

Reading and Vocabulary

How are pupils' skills developed?

Vocabulary is central to the mathematics curriculum. Learning vocabulary empowers pupils to solve problems and to reason mathematically.

Pupils are taught:

- New 'Buzz Words' each lesson which link to the learning.
- Key mathematical vocabulary such as language associated with the four operations, fractions, decimals and percentages
- Pupils re-visit vocabulary in retention tasks and as part of assessments
- Pupils are expected to explain their reasoning in detail (both written and verbally)

Policy, Systems and Culture

High expectations for all pupils

All staff have high expectations for all pupils, regardless of their starting point, and believe that all children will achieve well in mathematics.

RAPID: targeted academic support across all year groups to provide practice time allowing pupils to keep up with their learning.

Pre-Teaching: a focus on acquisition of vocabulary and core concepts ahead of the curriculum delivery.

Calculation Policy: a consistent policy across the Partnership of schools ensuring that pupils know how to calculate effectively and efficiently.

Staff Development: commitment to pedagogical development through the Great North Maths Hub and NCETM. Regular sharing of best practice takes place and teaching is constantly developing and improving.

Informing parents/carers: regular updates to parents/carers through discussion and reports. Pupils take their mathematics books home weekly.

Home Learning: structured skills homework promoting fluency, reasoning and problem solving, as well as retention of learning. Homework is purposeful and adds real value to learning.

Subject Leadership: the subject is well-led by colleagues who engage with leadership development via NCETM and know how to structure maths learning to have strong impact.

Enrichment: pupils see the importance of maths in the wider world and careers. Mathematics skills are woven into STEM opportunities.