

Bowes Hutchinson's Primary

Maths Policy

January 2021

Review Jan 2023

Introduction

'Mathematics is a creative and highly interconnected discipline that has been developed over centuries providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. A high quality mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.' (DfE 2013)

INTENT

At Bowes our intent for mathematics is to teach a rich, balanced and progressive curriculum using Maths to reason, problem solve and develop fluent conceptual understanding in each area. We want the children to see the importance of maths, how much we use maths skills in everyday life and its world-wide application.

Teachers and governors are kept regularly informed of developments in our curriculum. Lessons are child focused and maths is kept fun and current in school. Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life. Our policies, resources and schemes support our school vision. Teachers use a range of resources to cover the National Curriculum targets, such as White Rose Maths, Target Maths and NCETM Teaching for Mastery. The mapping of Mathematics across school (Durham Maths progression of skills) shows clear progression in line with age related expectations. Pupils are challenged and we believe in a child led approach whereby pupils can take ownership of their learning, choosing practical materials when needed and being constantly challenged.

IMPLEMENTATION

The children have at least 1 hour maths lesson every day. Work is taught in blocks so that skills can be embedded and mastered, then are revisited regularly to ensure 'sticky learning' takes place. Teachers use a variety of schemes and resources to deliver lessons. Mental maths skills are taught, prioritised and practised daily.

Teachers enable the children to follow the mantra – Because I know.....then I can.....

Understanding the four rules of number, and the basic skills that go with this, is the foundation of our implementation. Teachers follow a clear progression of skills and are undergoing CPD, to embed mastery and fluency in skills and knowledge. Basic skills are a priority. We begin with the importance of number bonds and times tables. These are taught in a variety of ways and on a regular basis to keep skills sharp. Making connections is very important e.g. number families and related division/multiplication facts.

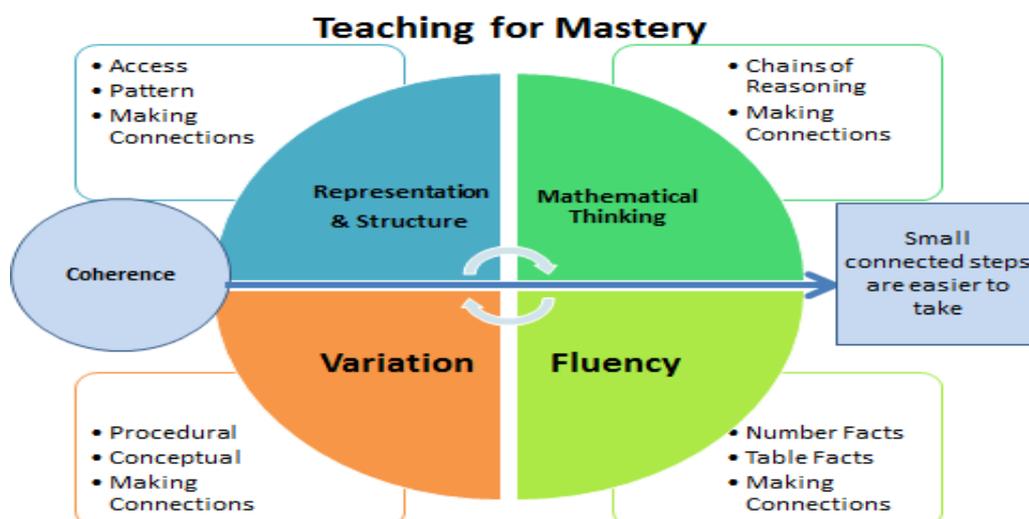
We believe in using many different ways of teaching concepts and these all begin with a visual and practical approach.eg EYFS children look for the number 3 in the classroom and outside, and explore in their home environment. They make 3 using many different concrete apparatus, then see 3 in many visual representations. KS1 children build upon these initial concepts and begin to look at more formal methods alongside practical work/visual work and modelling..

KS2 children use different concrete materials such as multi-base rods, ten frames and place value counters to embed and secure place value. They use digit cards, digit fans, dice and playing cards to consolidate skills through quick fire questioning and by playing maths games. The children use I pads and ICT games to enrich and consolidate learning.

All children learn mathematical vocabulary which is also embedded through cross curricular application.

Our maths coordinator and our Deputy head are currently receiving, training, from the Archimedes NE Maths Hub, on delivering mastery through variety, visuals and representation which is giving them even more scope and enrichment to ensure confident learners. The maths coordinator is a very experienced teacher who regularly leads staff meeting to deliver CPD/ discuss gap analysis and follow up the SATs with any issues.

What is teaching for mastery?



FLUENCY INVOLVES:

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics

REPRESENTATION & STRUCTURE

Mathematical structures are the key patterns and generalisations that underpin sets of numbers – they are the laws and relationships that we want children to spot. Using different representations can help children to ‘see’ these laws and relationships.

VARIATION

Procedural variation – This is a deliberate change in the type of examples used and questions set, to draw attention to certain features.

Conceptual variation – When a concept is presented in different ways, to show what a concept is, in all of its different forms.

MATHEMATICAL THINKING INVOLVES:

- Looking for pattern and relationships
- Logical Reasoning
- Making Connections

COHERENCE

Teachers have developed detailed knowledge of the curriculum in order to break the mathematics down into small steps to develop mastery and address all aspects in a logical progression. This ensures deep and sustainable learning for all pupils.

As a result of teaching and learning in mathematics, our aim is that pupils will be able to meet the key aims of the National Curriculum for maths.

- In our school we aim to promote children’s **curiosity** and enable them to safely take risks and learn from first-hand experience wherever necessary
- Our primary focus is to support the children to become fluent in mathematical **understanding** from the most basic level so that they can build upon their own understanding.
- We aim to enable our children to develop conceptual understanding, **recall** of number facts and patterns and apply their knowledge rapidly and accurately.
- We aim to promote children’s ability to **reason** through opportunities to discuss their thinking and understanding. This emphasis may result in less written work but much deeper understanding.
- We promote **problem solving** and solution finding. This is not only true in mathematical learning but in almost all aspects of school life.
- We aim to support children to make **progress at their own pace**. Often misconceptions cause greater difficulties at a later stage of learning. We will promote smaller group learning opportunities whenever possible and encourage children to revisit their thinking to ensure they feel secure in their understanding and able to move confidently on to next steps and challenges.

At Bowes, we ensure a creative and wide curriculum by delivering cross curricular maths where possible e.g. KS1 do regular cooking sessions where they are counting/ weighing and measuring. KS2 children learn data handling skills through

science lessons. Weather watching produces graph work. Outdoor maths takes places as much as possible. Maths even comes into the foundation subjects e.g. estimating the length of a Viking boat, looking at dates in Roman numerals, links with French language.

Mathematical language and vocabulary is an intrinsic part of the teaching, with maths being seen in many everyday situations e.g. % in the January sales, house prices, money needed for a fund raising day.

We try to make opportunities for maths in our outdoor setting where possible – linked to Forest schools or in a science or geography lesson. We have had a dedicated Maths week where the children took part in many practical activities and mixed ages worked together.

Homework relates to concepts taught very recently. This aims to consolidate/practise skills and show parents what we are teaching and what the children are currently learning. The focus in KS1 is to carry out practical, fun and interesting activities at home with mathematical skills at their core. In KS2 the homework is focussed on the weekly topics and aims to practise and consolidate the work taught that week.

IMPACT

The impact of our mathematics curriculum is that children understand the relevance of what they are learning in relation to real world concepts. We have fostered an environment where Maths is fun and it is OK to be 'wrong' because the journey to finding an answer is most important. Children are helped to become confident, enthusiastic learners through engaging in collaborative and independent activities. Our children learn to make connections and they make measurable progression against their own targets. The children have individual targets in their books. We have the statement 'Because I know.....I can do....' In every classroom.

Our maths books are packed with a range of activities showing evidence of fluency, reasoning and problem solving. Our feedback and interventions are supporting children to strive to be the best mathematicians they can be ensuring a greater proportion of children are on track.

Children 'have a go' and choose the equipment they need to help them to learn along with the strategies they think are best suited to each problem. Children are developing skills in being articulate and are able to verbally, pictorially and in written form, reason well.

Resources and schemes

Teachers use a range of resources and parts of schemes – using their professional judgement. At Bowes Hutchinson's we use the White Rose scheme of videos and work sheets, selected topics in Target Maths text books, Abacus text books and other useful work sheets and power points from the Internet – because we know that children learn in different ways and often there are several ways to approach a topic or explain it. Some resources are very visual whereas others show connections or

use practical apparatus. Our confident teachers do not only use one scheme or one way of working and we are constantly developing our ideas and learning from each other and from our training.

Assessment is carried out informally throughout the week, and formally every half term and term as appropriate. Oral work and whiteboards photos are used as evidence in KS1, as well as more formal written assessments.

In KS2 staff use a variety of resources for assessments – the Headstart assessment tests, previous SATs tests, twinkl resources. Times tables tests. These are done half termly as appropriate.

Assessment allows us to identify gaps and build on existing knowledge to enable sequential learning across topics.

Tracking - termly meetings are held with staff from both key stages and within key stages to highlight needs and priorities. IEPs show interventions that are planned for specific difficulties to be met for individual children.

Monitoring is carried out by the Maths lead teacher –who looks at class books on a regular basis and has detailed discussions with staff regarding progress, tracking, quality of work, standards and resource requirements.

Action Plan

As a staff we are currently working through an action plan created with help from the Maths Hub lead trainer.