**Mathematics Intention**

At Buckingham Primary Academy, Mathematics is a key aspect of the curriculum along with reading, writing, speaking, and listening, including **oracy**, it makes a significant contribution to pupils as thinkers through **fluency** and **reasoning**.

Buckingham Primary Academy strives to achieve two primary objectives through our maths curriculum: fostering a lifelong **passion** for mathematics and equipping students with the **confidence** and **fluency** to become proficient mathematicians capable of successful **reasoning** and **problem-solving**. As a school, we prepare children for this as our teachers are highly skilled to ensure **retrieval** and use of **effective** **questioning** is embedded into all aspects of the school day allowing children to be successful. This also **prepares** children for mathematics in further education settings.

Mathematics is introduced **progressively** and **sequentially** throughout the academy, commencing from the Nursery level. During the Foundation Stage, we prioritise instructing pupils through **hands-on** and **practical** learning experiences, emphasising the **mastery** of early numerical concepts. A **diverse** range of learning opportunities, prevalent throughout the entire setting, facilitates the **development** of pupil’s **comprehension** of **relationships** and **patterns**. This approach enables them to engage in **reasoning** about numbers and to solve problems through practical activities.

A collage of a child sitting at a table

Description automatically generatedA collage of children sitting at a table

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**The teaching of Mathematics from Nursery through to Key Stage 2 is underpinned by the expectations and programme of study set out by the DfE’s National Curriculum (2014):**

**Purpose of study:**  
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** mathematics education therefore provides a foundation for **understanding the world**, the ability to **reason** mathematically, an **appreciation** of the power of mathematics, and a sense of **enjoyment** and **curiosity** about the subject.

**Aims:**  
The **predominant** aim for Mathematics within the national curriculum, is to ensure that children develop knowledge to help them be successful later in life but to also encourage the **engagement** in Science, Technology and Engineering (STEM). It is built upon a strong emphasis to ensure that children develop a strong understanding of the world that can enable them to be successfully with employment. Aswell as ensuring children are ‘prepared’ for life after their education it is also important that they experience enjoyment to allow them to become immersed in the subject.

The **National Curriculum for Maths** aims to ensure that all pupils:

* 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.

**School Curriculum:**

The programme of study for Mathematics at Buckingham Primary Academy follows a mastery approach, which is set out in strands that teachers follow. Although set out in strands a significant part of the maths curriculum is the use of retrieval this ensure that links can be made to previous learning to allow knowledge and skills to be further embedded. Our curriculum is supplemented with Gareth Metcalf ‘Goal Led, Goal Free questioning and the NCETM resources.

Embracing a **mastery** approach, we avoid streaming children by ability, aiming to provide every child with the chance to reach age-related expectations. **Mastery** teaching allows our students the time to cultivate a profound and transferable comprehension of mathematical concepts. Our school prioritises a lesson structure that integrates abstract, pictorial, and concrete applications, fostering the development of **fluency** and **reasoning** skills. We take pride in q**uality-first teaching and effective questioning,** which nurtures children's **self-confidence** and belief in every aspect of their learning journey.

Through our **bespoke** layout of maths opportunities throughout the day, which includes the retrieval opportunities at the start of every maths lesson, Rapid Recall focus and Arithmetic opportunities, children are given **high quality opportunities** to both extend their learning and develop a **deeper understanding**. Children show a high level of **perseverance** to ensure key skills are implemented into their long-term memory, which allows them to **achieve and believe** and therefore means they become **confident** learners. In addition to the above, we also appreciate how important it is for our children to become **fluent** in all aspects of **calculation**, therefore, one session per week must be dedicated to practicing arithmetic through a given test.

**Retrieval**

As previously mentioned, as a school we place a **high emphasis** on **retrieval** and understand the importance of children revisiting **prior knowledge** to further deep an enhance their knowledge and understanding. Our **retrieval** opportunities, also allow for children to develop their **oracy** around maths and be able to discuss and explain their learning confidently.

Our retrieval opportunities follow a DNA at the start of lessons, 2-weekly cycle between bar model question and a ‘goal led, goal free’ question and the Rapid Recall:

**DNA**

A group of children in a classroom

Description automatically generatedTherefore, all maths lessons, begin with a ‘Do Now Activity (DNA)’, the DNA is broken down into 4 questions, last lesson, last week, last term, last year. The DNA provides an **opportunity** for teachers to **retrieve prior knowledge** and understanding. The DNA is a done to a fast **pace** to ensure children can develop their fluency. However, we also acknowledge that this is a **valuable** opportunity to cover any misconceptions therefore, effective teacher modelling and questioning is used.

**Bar Model**

A screenshot of a computer

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**Goal Led, Goal Free**

To support the teaching of **reasoning** and **problem** solving we have adapted the process of goal led, goal free by Gareth Metcalfe. Teachers prepare a reasoning and problem-solving questions and slowly reveal the question to the children. The purpose of the slow reveal is for children to think about the steps to success to answering the question and also to develop children’s **oracy** around maths.

A screenshot of a computer

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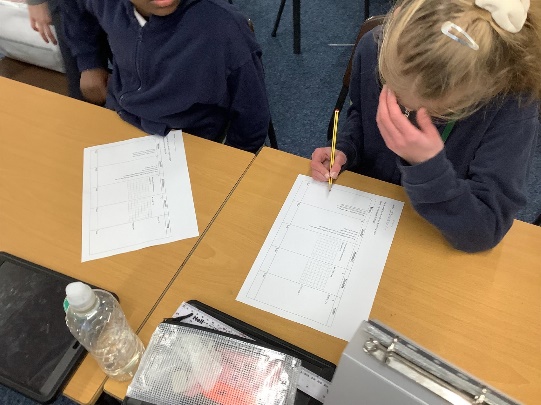
**A bicycle with a question mark

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**Rapid Recall**

Rapid Recall is an **integral** aspect at Buckingham Primary Academy, emphasising the need to cultivate not only children's reasoning and problem-solving skills but also their **fluency**. Each day, following lunchtime, children engage in the Rapid Recall, providing an **opportunity** to reinforce **fluency** across various skills. The weekly focus adjusts based on ongoing assessments and data. Through **consistent** daily practice and **retrieval**, we strive to **instil** **confidence** and **fluency** in the children's skill set.

A collage of children sitting at a desk

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A diagram of numbers and compositions

Description automatically generated with medium confidenceAn example of the Year 2 Autumn 1 overview is provided below: