Maths - Faculty curriculum Guidance

Vision and intent

At Kelford school, we passionately strive to provide an exciting, engaging and purposeful curriculum that allows our pupils to be the best that they can be. As a core subject, Mathematics is recognised not just as a vital part of this curriculum, but as an essential tool for everyday life. It is vital that pupils are given every opportunity to build skills to support them to understand and change the world. We provide all pupils with a high-quality mathematical education, laying the foundation for understanding and applying mathematics in their world. Mathematic learning begins at the earliest stage of development, long before the acquisition of number skills and at Kelford we aim to ensure that all of our learners have the building blocks for success within mathematics, recognising that mastery of key knowledge and skill concepts is essential in order to progress.

Our aims within Mathematics are:

- To promote a love of mathematical learning through engaging, practical activities, games, exploration and discussion.
- To foster curiosity and ensure that the school environment is maths rich, including a focus on cross curricular mathematical learning.
- To Develop, master and generalise concepts before moving learners on starting with “sensory” maths as the bedrock of mathematical development.
- To promote confidence and encourage learners to be proud of their achievements
- To develop a thorough knowledge and understanding of numbers and the number system (including the core skill of subitizing)
- To develop the ability to solve problems in a range of mathematical and everyday contexts, including time and money.
- To develop a practical understanding of shape and space.
- To develop measuring skills in a range of contexts
- To recognise and develop core functional skills in mathematics that will support pupils in their everyday life
- To develop logical thinking and reasoning skills, encouraging investigation and curiosity
- To understand and use current mathematical language

Implementation

Mathematical learning is an essential part of the curriculum for all pupils at Kelford across all learning pathways & from EYFS to the end of 6th form. Developmental progression documents combined with a carefully sequenced long-term plan and hierarchical schemes of work, ensure that pupils have every opportunity to progress within Maths, developing essential knowledge and skills for life. The use of threshold concepts ensures that pupils master and generalise required skills before moving on to the next developmental stage. The diverse needs of our pupils necessitate a diverse pedagogical approach to implementing the Maths curriculum. This section provides guidance to support the implementation of the planned curriculum.

Learning in Mathematics at Kelford is divided in to the following 3 areas of learning.

- **Number:** Pre-numerate skills; Explore and play with number; Early number; Number and Place Value; Addition and subtraction; multiplication and division; Fractions; Statistics.

- **Shape, Space and Pattern (Geometry):** Explore and play – Shape, space and pattern; 2D & 3D shape; Position and direction; Pattern.

- **Measure:** Time, Money, Size, Weight, Length, Capacity.

Maths is taught either as part of core learning linked to cognition and learning within pupils individual learning plans, or discretely 4 times a week. As highlighted in long term plans, Number is a continuous focus across the half term, as we firmly believe that number skills are the foundation of mathematical understanding. Learning within geometry and measure is then split into blocks with equal weighting during each half term. Teachers also make use of cross curricular opportunities to support learners to use and apply their Mathematical skills, particularly within our STEM curriculum. At the end of each half term, teachers plan opportunities as appropriate for pupils to problem solve utilising the knowledge and skills that they have gained over the unit of work as research shows that In order for pupils to engage in problem solving, they must be fluent in the facts, knowledge and skills that underpin the problems.

Our Maths curriculum has the flexibility to meet a wide variety of learners needs, in accordance with their developmental stage. The learning pathways below highlight the ranging pedagogies and approaches to implementation of maths learning which are required in order to ensure we meet all of our pupils needs. For all pupils, the curriculum is designed to provide appropriate stretch and challenge and build on their knowledge and skills sequentially to deepen mathematical understanding.

- **Yellow Pathway (Pre-Formal learners)**

Yellow pathways follow a pre-subject specific pathway which is led by their needs according their EHCP's. For learners on this pathway, mathematical learning is delivered as part of their core learning offer, rather than in discrete lessons. Teaching and learning focuses on essential pre-numerate skills springing from sensory experiences linked to size, quantity, difference, space, movement, rhythm, sequence, time and possession/loss. Mathematical learning begins before the use of symbols, numbers and words and as such, pedagogies focus on engaging learners in sensory experiences to enable small lateral steps in progress within pre-numerate skills.

- **Lime pathway (Informal learners)**

Learners on the lime pathway are encouraged to play, explore and engage in early mathematical activities to build essential skills that underpin learning. Continuous provision and learning carousels are used to provide a wide variety of engaging opportunities. Some mathematical learning may be delivered discretely, however often core learning will take place in cross curricular opportunities, for example using a story as a vehicle for learning and exploration. Teachers track learners progress against the developmental frameworks and use the hierarchical schemes of work to plan next steps in learning. It is acknowledged that some informal learners do need clear structure and routine and as a result, may learn best through regularly repeated learning opportunities as part of their routine.

- **Green Pathway (Semi formal learners)**

Maths is delivered through 4 discrete lessons weekly and supported by continuous provision and cross curricular opportunities to use and apply mathematical knowledge and skills. Teachers track learners progress against the developmental frameworks, which align to the pre-key stage 1 standards and sequencing is supported by the long-term plan, which is then adapted by teachers to address next steps for individual learners. The Hierarchical scheme of work supports teachers to understand sequential next steps in learning when the long-term plan requires adaptation.

- **Orange Pathway (Formal learners)**

Through 4 weekly discrete lessons and cross curricular opportunities to consolidate and apply learning, pupils on this pathway follow a more formal approach to mathematical learning. Long term planning ensures sequencing, breadth and coverage across the curriculum; however, it is acknowledged that not all formal learners will develop at the same pace. Hierarchical schemes of work should be used to support planning for next steps within the area of learning outlined in the long term plans e.g. addition and subtraction.

- **EYFS**

The maths curriculum at Kelford is based on developmental research and contains all developmental milestones from development matters and Birth to 5 matters. The EYFS policy and guidance highlights the overarching play based approach to mathematics making use of continuous provision and enabling environments and Hierarchical schemes of work are used to support planning and determining next developmental steps.

- **Key Stages 4 & 5 – Functional skills and accreditations.**

In Key stage 4, pupils who are working at K7+ begin to work towards entry level functional skills qualifications allowing a pathway with the potential for them to achieve level 1 functional skills by the end of Key stage 5. Long term plans are in place to support the delivery of functional skills learning.

Learners who are working below K7 in KS4, continue to work on the core Kelford curriculum using hierarchical schemes of work to determine gaps and plan for next steps.

By KS5, Learners who are not on a functional skills pathway work towards the ASDAN personal progress accreditation, which includes mathematical units of work linked to preparation for adulthood and applying mathematical skills in the wider world.

Impact.

Pupils on all pathways will work through the developmental progression document in order to achieve their maximum potential and best prepare them for life beyond School, with essential mathematical knowledge and skills for life. Pupils will learn the functionality of number and how to use and apply knowledge and skills that have been embedded in their long-term memory through problem solving activities which can be applied to life beyond school. It is recognised that pupils work at different rates and as a result good progress is measured through the successful achievement of agreed number objectives within cognition and learning on pupils individual learning plans, linked to long term objectives within education and health care plans. As a result, assessment is ipsative, measuring progress against agreed objectives as opposed to comparing pupils like for like or expecting pupils to develop on a linear flightpath. Developmental trackers are used to support, ensuring that pupils are progressing in all areas of maths and allowing teachers to assess against pre-key standards at the statutory assessment points. some pupils have spiky profiles and may progress at different rates in different strands of maths.