

## **Intent and Implementation - Maths**

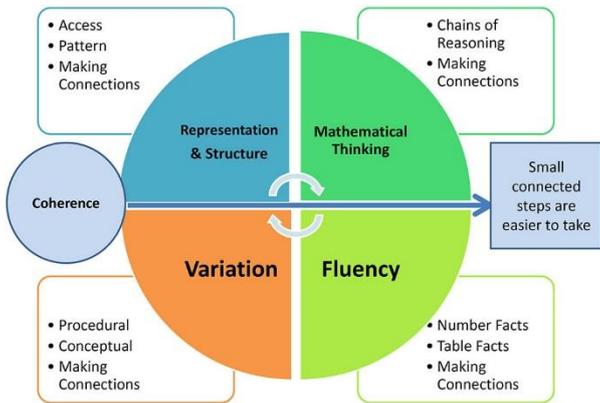
At Illogan, we understand the importance of developing creative, independent, inquisitive and confident mathematicians who have strong mathematical skills to reason, problem solve and think in abstract ways. We understand that a secure and strong understanding on Mathematics underpins our learner's experiences within the curriculum and during adult life. It is our intent to ensure that our pupils leave Illogan as positive, curious and responsible learners who can make sense of numbers, patterns, shapes and data in the world around them. We provide this through our high-quality teaching and a coherent mathematics curriculum which empowers our children to recap, build upon and create links between prior learning.

### **We intend:**

- To enable pupils to be fluent in the fundamentals of mathematics through varied and frequent practice with increasingly complex problems, helping children to develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To support children to reason mathematically by creative and critical thinking, linking ideas and concepts, developing an argument, providing justifications and giving evidence.
- To encourage children to become problem solvers by: applying their mathematics to a variety of contexts; to move fluently between representations of mathematical ideas and concepts; to break down problems into a series of smaller steps; and develop their skills of resilience and perseverance.
- To enable pupils to use the correct mathematical language to communicate, discuss and explain their thinking.
- To develop the children's ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- Please see White Rose Progression National Curriculum document to view out intended outcomes for each year group.

### **Implementation**

At Illogan School, we believe a depth of learning is a fundamental principle to our mathematics teaching. All children explore mathematical challenges through a range of experiences; using manipulatives, representations and visual prompts to scaffold their understanding of mathematical ideas. At Illogan, we use the 5 big mastery principles of coherence, fluency, variation, mathematical thinking and representation and structure to guide our maths teaching and learning. Our coherent mathematics curriculum is broken down into small, achievable and sequential learning outcomes to ensure that prior learning is mastered before being built upon. This ensures that key understanding is embedded and that mathematical understanding is applied before new learning is presented.



At Illogan School, we teach the National Curriculum, supported by clear skills and knowledge progression set out in the White Rose Maths scheme. The scheme ensures that skills and knowledge are built on year by year and sequenced to maximise learning for all children.

We carry out planning in Maths in three phases; long-term, medium-term and short-term.

- **Long-term planning:** Our long-term scheme of work is based on the requirements for math's set out by the National Curriculum for Key Stages 1 and 2. It gives coherent and manageable teaching units for each phase and allows for curriculum continuity and progression in children's learning. Long-term planning is broken down into 'blocks' to support our medium-term plans. These learning blocks are ordered by dependency in most cases – for example place value is always taught first as it is essential children have a solid understanding of this before they can master addition and subtraction. However, other blocks which are classified as 'standalone' units (e.g., shape) are organised to give a varied curriculum.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number Place value <a href="#">VIEW</a>	Number Addition, subtraction, multiplication and division <a href="#">VIEW</a>					Number Fractions A <a href="#">VIEW</a>		Number Fractions B <a href="#">VIEW</a>		Measurement Converting units <a href="#">VIEW</a>	
Spring term	Number Ratio <a href="#">VIEW</a>	Number Algebra <a href="#">VIEW</a>	Number Decimals <a href="#">VIEW</a>	Number Fractions decimals and percentages <a href="#">VIEW</a>	Measurement Area, perimeter and volume <a href="#">VIEW</a>		Statistics <a href="#">VIEW</a>					
Summer term	Geometry Shape <a href="#">VIEW</a>		Geometry Position and direction <a href="#">VIEW</a>		Themed projects, consolidation and problem solving							

- **Medium-term planning:** These plans define the small step learning outcomes for each block. These are sequenced in order of difficulty and dependency to ensure learning is progressive and that prior learning is mastered and then carefully built upon to develop new learning.

Step 1 Numbers to 1,000,000

Step 2 Numbers to 10,000,000

Step 3 Read and write numbers to 10,000,000

Step 4 Powers of 10

Step 5 Number line to 10,000,000

Step 6 Compare and order any integers

Step 7 Round any integer

- *Short-term planning: Lesson plans, slides and resources are devised by class teachers using White Rose and NCETM materials. Our expectation is that the majority of pupils will move through the small steps at broadly the same pace. However, decisions about when to progress are based on the security of pupils' understanding and their readiness to progress to the next stage. Resources are differentiated to support and challenge pupils learning where appropriate. All lessons have a mastery challenges available to deepen children's understanding. Teachers carefully plan their lessons to ensure children are exposed to variation in their learning with a mixture of fluency, reasoning and problem-solving questions to deepen understanding and to support our mastery approach. Developing mathematical language is a critical part to our lessons at Illogan School and key vocabulary and use of sentence stems are used each lesson. Teachers in all year groups ensure that new mathematical concepts are first introduced using manipulatives to support children's deep acquisition of learning and understand the importance of moving children to more visual and written recordings so that they can begin to independently internalise key mathematical ideas.*

## **EYFS**

*EYFS base their teaching on objectives in the 'Curriculum Guidance for the Foundation Stage;' this ensures that they are working towards the 'Early Learning Goals for Mathematics'. The children are given access to daily mathematical challenges through continuous provision and in addition, participate in adult led mathematics sessions in preparation for Year One. They use Mastering Number to give children a good early understanding of number and White Rose materials to support guided group work and assessment for learning.*

## **Fluency**

*At Illogan School, we understand the importance of developing children's fluency in mathematics to enable them to recall and apply basic number calculations rapidly and accurately to more complex problems. Mastering a deep understanding of number gives children the skills and confidence necessary to succeed as mathematicians. Therefore, all children in EYFS and KS1 have daily Number Sense lessons which systematically teaches them to be fluent in basic number facts using a range of*

strategies. Where appropriate, KS2 children have small intervention group sessions to develop their automaticity of basic addition and subtraction calculations.

KS2 children have daily times table practise, and children in Year 5 and 6 complete daily 'fluent in 5' booklets to secure their fluency in mathematics.

### **Retention**

At Illogan School, we recognise the importance of maintaining children's retention and recall of their learning in mathematics. Therefore, all KS1 and KS2 maths lessons start with 'Flashback 4' materials which consist of one question from a learning outcome covered last lesson, last week, last block and last year. These are based on the research behind spaced learning to support children's retention of key learning.

Children in years 2, 3, 4, 5 and 6 have a weekly Maths Whizz homework. This online tutor tailors learning to suit the individual needs of each pupil and enables children to review and learn a range of mathematical concepts. This aims to support children with retention of key learning in mathematics and support any gaps they may have in their learning.

