



# Willow Bank Infant School

## Vision and Rationale for Mathematics

### The Maths Curriculum

#### Our Vision: What we want to see in the future

At Willow Bank Infant School, we aspire to see our children confidently develop the basic skills of mathematics which are vital for future life opportunities. At Willow Bank, our Mathematics Mastery curriculum has been developed to ensure every child can achieve excellence in mathematics. Our aim is for all children to think mathematically, enabling them to reason, solve problems.

At the heart of teaching for mastery is **high aspirations** for everyone. It's the belief that by **nurturing positive attitudes** and **building confidence** in mathematics, **a deep and sustainable** learning is **achievable for all** children. We encourage children to **develop enquiring minds**, **enjoy** their learning and **feel proud** of their achievements.

Our vision for maths ensures every pupil is given a broad, balanced, engaging and relevant curriculum that takes into account the requirements of the National Curriculum and any other guidance documents.

### Intent

**Programme:** We follow the Primary National Curriculum for Maths. We use high quality resources such as White Rose Maths to supplement the National Curriculum.

Our Maths curriculum **aims** to ensure that all children:

- To have a positive and resilient attitudes towards maths and an awareness of the fascination and excitement of discovery through the teaching and learning of mathematical concepts
- Develop a deep understanding of maths and number.
- Can reason mathematically and to use and understand the language of mathematics
- Become Competent and confident in mathematical knowledge, concepts and skills.
- Develop an ability to solve problems, to reason, to think logically and to work systematically and accurately.
- Have a range of learning strategies: working both collaboratively and independently.
- Become Fluent in mathematics where children can express ideas confidently and talk about the subject using mathematical language.
- An understanding of the importance of mathematics in everyday life.
- Develop a 'can do' attitude and perceive themselves as mathematicians.
- To broaden children's knowledge and understanding of how mathematics is used in the wider world.
- Independent learners who take responsibility for their own learning.

### Implementation:

Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y2. At Willow Bank, we follow the National Curriculum and use White Rose Schemes of Work as a guide to support teachers with their planning and assessment.

- The curriculum is progressive and is designed around blocks of learning.
- Our blocks are carefully planned out with small steps for learning. Each year carefully builds upon the skills that have been taught before.

- The calculation policy is used within school to ensure a consistent approach to teaching the four operations over time.
  - Children are taught through targeted small group interventions and whole class mixed ability teaching.
  - To learn mathematics effectively, some things have to be learned before others, e.g. place value needs to be understood before working with addition and subtraction, addition needs to be learnt before looking at multiplication (as a model of repeated addition). Our emphasis is on number skills first, carefully ordered, throughout our curriculum.
  - To ensure there are planned opportunities for children to revisit their learning, teachers in KS1 allocate 15 minutes a day to re-cap and embed learning, last week, last month, last term, last year.
  - Same day intervention is provided for children who are not sufficiently fluent with earlier material to consolidate their understanding.
- **Timetabling: Maths** is taught daily with a whole class input (ping – pong style) additional sessions for the consolidation and deepening of key skills to aid fluency are timetabled daily for 15 minutes a day (KS1). This is at the start of the day.

### **Implementation - Mastery Maths Core Principles**

At Willowbank, we have taken the key components of the mastery approach to teaching mathematics and adapted these to suit the specific needs of our children. This looks slightly different in EYFS. There are **5 Core Principles** agreed by the **whole school** which should be apparent in **every classroom** for **every mathematical concept**.

#### **Whole School**

1. Review – a starter that revisits previous learning (this may be previous knowledge relevant for the learning objective of the maths lesson being taught)
2. A purposeful and meaningful hook to give children with a real life scenario/context
3. Guided/episodic teaching – otherwise known as ‘ping pong’. Featuring:
  - Stem sentences
  - Sentence stems
  - Oral rehearsal
  - Use of the CPA model with resources which are providing the appropriate structures
  - Challenge language and questioning throughout
4. Independent practice, which is the same for all children, with conceptual and procedural variation. During the independent practice some children may require additional adult support or scaffolding through questioning and resources.
5. APE – a challenge to deepen children’s understanding (dong nao ting).

EYFS and KS1 has agreed a set of core principles that are more specific to them which should be seen during a lesson.

#### **EYFS**

- **Mastering number programme daily for 5 to ten minutes**
- Quick revision of previous knowledge e.g. counting, counting on, finding one more, subitising
- Hook – maths in context
- Stem sentences which are orally rehearsed in the classroom (actions may be used in addition to this).
- Resources to support children’s understanding which provide the appropriate mathematical structure.
- Pictorial representations e.g. part whole models, ten frames, numicon, number blocks
- Rich mathematical language

- Questioning to challenge children and deepen their understanding
- Independent practice in both the indoor and outdoor provision which has appropriate pictorial representations with variation
- Small group work to consolidate and challenge

### **Years 1 and 2**

- **Additional 15 minute maths meet that takes place daily outside of the Maths Lesson (SODA) to consolidate and deepen understanding-‘yesterday, last week, last term, last year’, fluency practice**
- **Mastering Number programme is used daily to support fluency**
- Review at the start of every lesson ( jump start) –fluency, odd one out, what’s the same/what’s different? (this may be previous knowledge relevant for the learning objective of the maths lesson being taught)
- Rich mathematical language explained
- Context for the maths lesson which is appropriate, purposeful and meaningful.
- Guided ‘ping pong’ teaching with use of and access to resources throughout
- Stem sentences and sentence stems – visually available to support children.
- Oral rehearsal of stem sentences
- Progression through the CPA model
- Questioning to support and challenge children’s thinking throughout guided teaching
- Use of misconceptions to develop reasoning and understanding
- Independent work, which is the same for all children, with conceptual and procedural variation
- APE ( Analyse it, prove it, explain it) – a challenge to deepen children’s understanding (sometimes referred to as Chilli challenges)

### **Working with parents**

We provide regular feedback to parents through termly parents meetings. EYFS parents have access to their child’s learning journey where achievements are celebrated and next steps highlighted. In addition to this each year group provide parents with a weekly bulletin with ideas of how to support maths at home. All children have access to ‘ purple mash’ and ‘Education City.’ Every year we hold a curriculum evening where parents can learn about our maths curriculum and how to support their child at home.

### **Impact**

As a result of our Maths teaching at Willow Bank you will see:

- Engaged children who are all challenged.
- Confident children who can talk about their learning using mathematical vocabulary and talk the links between mathematical topics.
- Children demonstrate a deep understanding of maths. Concepts or skills are mastered when a child can show it in multiple ways using different representations.
- Each child achieves objectives (expected standard) for year group.
- The flexibility and fluidity to move between different contexts and representations of maths.

**Assessment** of Maths at Willow Bank will:

Children are assessed using a range of approaches, with the aim that all pupils including children with SEN , make sufficient progress to meet or exceed age related expectations.

- Happen daily with the use of whole class feedback sheets. These are an essential element of the ‘plan – do – review’ cycle that teachers use to inform their planning.
- Misconceptions that arise are recorded on the whole class feedback sheets and addressed quickly.

- In EYFS 'Spotlight' children are identified rapidly and supported through their daily play and routines in order for them to meet the learning intentions.
- In KS1 children who have struggled to keep up during the lesson receive a same day catch up guided group or individual support to identify misconceptions.
- Allow ongoing formative assessment that identifies what children have learned and allow teachers to adapt the learning journey accordingly. AFL questions are used at the start of a new block of learning to identify misconceptions and gaps in learning. This in turn informs future sequences of planning.
- In KS1 teachers carry out hot tasks at the end of each block of learning so that gaps can be quickly identified and children struggling to keep up can be given additional support.
- Provide a summative assessment for Maths – statutory end of key stage assessments Year 2) and White Rose end of year test (Year 1)