# Mathematics Intent, Implementation and Impact

## Intent

The curriculum intent for mathematics is firmly rooted in our school desire to give all children strong foundations from which they may become **successful, independent learners for life** and is centred around our school values of **think, collaborate, persist.**

Teaching and learning throughout our inclusive mathematics curriculum provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject so they are able to independently flourish in a complex world.

Through a teaching for mastery approach, we aim to ensure that all pupils:

- **Become fluent in the fundamentals of mathematics** through varied and frequent practice with increasingly complex problems, developing conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Develop a deep, secure and adaptable understanding of mathematical concepts**, making connections between different areas of mathematics and applying learning confidently in new contexts.
- **Experience carefully crafted lessons, rich mathematical talk and purposeful practice** that foster curiosity, resilience and high expectations for all pupils.
- **Reason mathematically** by following lines of enquiry, identifying patterns and relationships, making generalisations, and developing arguments, justifications and proofs using precise mathematical language.
- **Solve problems with increasing sophistication**, applying mathematics to a range of routine and non-routine contexts, breaking complex problems into manageable steps and persevering in seeking solutions.

The end points are defined in the national curriculum for each year group. At Parklands, we have adopted the Power Maths scheme to aid the delivery of the national curriculum and the ensure knowledge and skills are sequenced and develop well to ensure children can achieve the defined end points.

## Implementation

- A mastery approach to daily mathematics lessons
- The use of Power Maths ensures consistency and progression within and across all years
- The calculation policy also provides clear progression across the school
- Lessons are structured using modelled, guided and independent practice (I do, we do, you do)
- Teachers identify potential barriers to learning and use appropriate adaptations, scaffolds, resources and additional practice whilst maintaining high expectations.
- Lessons are built around the reasoning element of mathematics
- Fluency and arithmetic practice take place three times a week in addition to mathematics lessons. In KS2, Mastering Number is taught as an additional 15-minute session four times a week. In EYFS and KS1, Mastering Number consists of an additional 15-minute mathematics session four times a week to develop number sense.
- Use of stage and age manipulatives for all pupils to build solid foundations on which to apply more difficult concepts.

- Conceptual variation (the opportunity to work on different representations of the same mathematical idea) is ensured.
- A 'Parklands' approach to the teaching of times tables is taught twice a week with the following structure: teach, review, practice and assess.
- Pupils are given the opportunity throughout the day to recall number facts through chanting, singing and other various recall strategies; regular retrieval practice of fluency through morning maths.
- Regular, low-stakes testing of fluency: 'Flashback 4'
- Formative assessment is used on task and addresses misconceptions at the point of need
- Summative assessment is used to provide accurate information on pupil progress; pupils self-mark their work in green to reinforce what is right and learn from their mistakes.
- Teachers model high-quality spoken language and the accurate use of Standard English to support the development of pupils' oracy skills.
- Pupils are provided with regular opportunities to develop and demonstrate their oracy skills through activities such as exit tickets, hinge questions, and one-sentence summaries.
- In EYFS, teachers provide opportunities for children to become mathematicians through structured play and directed teaching sessions both indoors and outdoors.
- EYFS Teachers will provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion within maths and across continuous provision.

## Impact

By the time our pupils leave Parklands they:

- Have a bank of efficient and accurate skills that can be used to calculate effectively from foundations underpinned by the concrete, pictorial and abstract process so that children have a depth of understanding.
- Have enthusiasm for the subject and understand the relevance and important of what they have learnt in relation to real, wider-world concepts.
- Talk confidently and enthusiastically about mathematics, their learning and the links between mathematical concepts.
- Have mastered efficient mental and written methods of calculation.
- Quickly recall facts and procedures, including times table facts.
- Are competent in mathematical reasoning and justify their thought processes.
- Solve increasingly sophisticated and contextual problems with high levels of resilience.
- Make rich connections across mathematical ideas and have gained transferrable skills which are applied across all areas of the curriculum.
- Children who have gaps in their knowledge receive appropriate support and intervention.
- Achieve age-related expectations in mathematics and some will have progressed further and achieved greater depth.
- Recognise mathematics as a vital lifelong skill and are equipped with the skills and confidence necessary to progress to their learning in key stage 3.