

## **Maths at Old Park**

**Mathematics is led by our Maths leader.**

### **Why Do We Teach Mathematics at Old Park?**

At Old Park Primary School, we are committed to providing our children with a curriculum that has a clear intention, is skillfully implemented and impacts positively upon their needs.

The National Curriculum for Mathematics intends to ensure that all pupils:

1. 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.
2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
3. 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. Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas.

Notwithstanding the distinct domains, pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Old Park Primary School follows the White Rose Maths scheme, with Deepening Understanding used to extend fluency, reasoning and problem solving. Children should also apply their mathematical knowledge to science and other subjects. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich mastery and sophisticated problems. End of Unit assessments identify those needing support and children are given extra tuition to develop their understanding of that topic.

When teaching mathematics at Old Park Primary School, we intend to provide a curriculum which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful in their future ventures and working life. We incorporate sustained levels of challenge through varied and high-quality contextual activities with a focus on fluency, reasoning and problem solving. Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete, pictorial and abstract form wherever suitable. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage our school values (especially: Optimism, Love of Learning, Perseverance and Ambition). Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life.

Expectations	All children are expected to succeed and make progress from their starting points.
Modelling	Teachers teach the skills needed to succeed in mathematics providing examples of good practice and having high expectations.
Language	We create a vocabulary-rich environment, where mathematical language supports understanding
Fluency	We intend for all pupils to 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.
Reasoning	We intend for all pupils to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
Problem Solving	We intend for all pupils to solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
Understanding	All children secure long-term, adaptable and deep understanding of maths which they can apply in different contexts.

### **How Do We Teach Mathematics at Old Park?**

Every class from EYFS to Y6 follows the White Rose scheme of learning which is based on the National Curriculum. Lessons may be personalised to address the individual needs and requirements for a class but coverage is maintained. In order to further develop the children's fluency, reasoning and problem-solving, we use Deepening Understanding which correlates to the White Rose lessons and further develops children's understanding of a concept and the links between maths topics. We also use a range of planning resources including those provided by the NCETM, Maths No Problem, ISeeMaths and NRICH to enrich/support our children's maths diet

Concrete, Pictorial, Abstract (CPA)	We implement our approach through high quality teaching delivering appropriately challenging work for all individuals. To support us, we have a range of mathematical resources in classrooms including Numicon, abacus Base10 and counters (concrete equipment). When children have grasped a concept using concrete equipment, images and diagrams are used (pictorial) prior to moving to abstract questions. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to answer and solve maths without equipment or images.
Times Tables	In order to advance individual children's maths skills in school and at home,

	we utilise Times Tables Rock Stars for multiplication practise, application and consolidation.
Assessment	Regular Flashback 4 recap aids children's understanding and memory of topics taught. FB4 gives regular opportunities for children to practise something from the last lesson, last week, last unit and last year. Children complete end of unit and end of term assessments
Intervention	Children working well below expectations complete Sandwell Numeracy Intervention to do regular practise of basic maths. Children not achieving the marks they should on tests or identified to need support in lessons are given further support with weekly intervention on topics of concern. Children are assessed following the intervention to judge the success.
TTRS	Children are encouraged to play TTRS often but for short periods. Progress is checked weekly. Daily, times tables are taught, using strategies like number lines, partner work, competitions etc, in KS2 to support their development. Whole school competitions take place termly and an annual Rockstar Day increases engagement with the concept
CPD	Staff have general, and in some cases specified, CPD with Maths. All staff have been trained externally by CPA specialists such as Anthony Reddy and White Rose Maths. Some have had further training with Gareth Metcalfe, looking at deepening understanding. The Maths coordinator carries out specialist team-teaching and learning as well as delivering the and ensuring the Old Park Primary Maths vision is being adhered to. All staff moderate books and work to ensure quality and consistency.
Cross-curricular and context.	Every Maths lesson has a purpose and a context for children to be able to grasp concepts with more understanding. Maths lessons include concepts from most other subjects in the curriculum and vice versa.

### **Does Our Well-being Curriculum Influence Our Children?**

Old Park Primary School has consistently surpassed local, regional and national averages in terms of attainment and progress in Maths

Evidence in knowledge	Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential. Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table. This knowledge is verified by regular assessments and moderation.
Evidence in skills	Pupils use acquired vocabulary in maths lessons. They have the skills to use methods independently and show resilience when tackling problems. The flexibility and fluidity to move between different contexts and representations of maths. Children show a high level of pride in the

	<p>presentation and understanding of the work. The chance to develop the ability to recognise relationships and make connections in maths lessons. These skills are verified by regular assessments and moderation.</p>
Outcomes	<p>At the end of each year, we expect the children to have achieved Age Related Expectations (ARE) for their year group or to have made rapid progress towards ARE. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and intervention in the form of the Sandwell Numeracy Intervention for those working between Y1-3 and White Rose bespoke intervention across the school.</p>
Pupil voice	<p>Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.</p>