



Mathematics Curriculum

Intent

The mathematics curriculum at Porters Grange Primary School aims to instil lifelong mathematical skills in our pupils, enabling them to aspire to succeed in the subject academically - as well as into their adult lives. It develops pupils' deeper mathematical understanding using the White Rose scheme of work, with a holistic classroom approach to collaborative learning, deep mathematical problem solving strategies and use of concrete, pictorial and abstract resources and techniques to enable all learners an opportunity to succeed from reception to the end of KS2.

Due to our location, many of our pupils come from deprived backgrounds. We have high proportions of EAL children, as well as pupil premium children. Maths is a universal language, and allows pupils - with low language and reasoning skills - who join our school a chance to succeed. White Rose mathematics promotes use of language and discussion during lessons - expanding all pupils' vocabulary- which will benefit their learning at our school, by enabling opportunities for oracy. This is embedded in classrooms through working walls, with a designated 'Maths Talk' area containing key vocabulary and STEM sentence starters to encourage collaborative discussion.

White Rose maths fosters a wonderful collaborative learning environment in each classroom, with peer learning, with developing depth of questions requiring concrete, pictorial and eventually abstract models to assist pupils. There are designated 'deeper thinking questions' and cognitive challenges for the higher learners combining to create independent, metacognitive learners.

The culmination of the curriculum taught to our pupils means that by the time they leave us in Year 6, they are equipped with lifelong mathematical problem solving skills, deeper mathematical understanding and an affinity with the subject that will overcome any reluctance or negativity they may have previously felt. By creating learners who are capable of understanding their emotions - as well as their critical thinking during maths lessons, we mirror our whole school Growth Mindset. This builds resilient pupils, who have a positive approach to problem solving and use all of their learning powers to succeed and fulfil their aspirations.

Implementation

What

Key Stage 1: In this key stage, pupils will work to improve their understanding of the fundamentals of number through continuous provision and engaging maths areas. Here, new concepts will be introduced by teachers following the White Rose scheme of learning, before being made available for pupils to explore concepts: such as place value, using concrete resources to answer questions using the four operations and problem solving. They will also begin to understand the concept of fractions, estimation, shape and measure as well as direction and interpreting data. Alongside the White Rose provision, our practitioners also secure the pupils understanding of number by following the 'Number Blocks' scheme of work to ensure a solid base of the fundamentals of mathematics. The early mathematical skills our pupils acquire in this key stage enable them to successfully transition to key stage 2.

Lower Key Stage 2: There is a strong emphasis on securing times tables understanding in these year groups, enabling their arithmetic skills to progress in the next stage of their learning. This is achieved by weekly testing, assessment and error analysis and use of Times Table Rock Stars to check pupils' progress using 'sound checks' which closely mirror the MTC pupils undertake in Year 4. Understanding number is a priority in the

	<p>curriculum, giving our children a secure platform to advance their reasoning skills. Pupils will also begin to use a wider range of problem solving strategies, with collaborative learning assisting pupils developing their understanding of more abstract mathematical concepts.</p> <p>Upper Key Stage 2: The key aim for these year groups is to push on their mathematical understanding with a wide range of arithmetic skills, with number a key focus once more, giving them a toolbox of strategies to approach a range of questions. Using the White Rose scheme, the pupils' skills are supported by pictorial and abstract scaffolds, with the aim being to build on skills gained in prior years, to advance their skills and understanding. They will take their secure times tables and expanding arithmetic skills gathered from the autumn and spring terms, to fully tackle deeper, more abstract concepts, such as shape and measure in the later terms. By the end of year 6, we have pupils equipped with mathematical problem solving toolkit, a strong arithmetic skill set and a positive outlook on mathematics as a whole – helping them to aspire to their aims and goals in secondary school as well as later life.</p>		
How	Resources and Equipment	Planning	Environment
	<p>At Porters Grange, we have a widely stocked central maths resources area, with equipment suitable for every key stage. Resources are checked and maintained regularly, with any gaps in equipment restocked as quickly as possible.</p> <p>There is a strong focus on concrete materials, tailored to work alongside our White Rose scheme of learning for teachers and children to use in their classrooms.</p>	<p>Planning for maths is taken from the White Rose scheme of work, which utilises a maths mastery approach to deliver strands of the national curriculum.</p> <p>Teachers are able to access lesson plans, resources for differentiation and lesson guidance through an online hub.</p>	<p>Within our classrooms, maths will be prominent on working walls. Here, pupils will see modelled examples of calculations and methods currently being studied. A dedicated 'Maths Talk' area of each mathematics display will feature key questions, STEM sentence starters as well as key vocabulary for pupils to use and build their understanding of the maths being taught. Concrete resources will also be made available to learners to assist their understanding.</p> <p>Times tables are promoted and celebrated around the school through assemblies, with tournament winners appearing on our Times Table Rockstar 'Board of Rock' display, which is placed prominently in the corridor.</p>
Impact	Quality of Education	Behaviour and Attitudes	Personal Development
	<p>Learners have a good breadth of arithmetic, which enhances their understanding and application of a range of reasoning skills.</p> <p>Times tables are embedded into teaching practice, given a large focus by teachers and</p>	<p>Learning powers promoted throughout the school embed a growth mind-set attitude, which lends itself excellently to mathematics.</p> <p>Mistakes are encouraged in class and used as learning tools.</p>	<p>Learners develop lifelong mathematical skills across each year group:</p> <ul style="list-style-type: none"> • Building ever-expanding 'Maths Talk' vocabulary, learning how to use this language to explain their learning.

	<p>gaps in learning are targeted to ensure all pupils have equal opportunities to succeed.</p> <p>Pupils develop a varied range of problem solving strategies, enabling them opportunities to tackle cognitive challenges independently and confidently.</p> <p>Pupils will continuously cultivate their mathematical vocabulary, developing in depth across each key stage.</p>	<p>Teachers strive to make maths 'fun' and promote joy of understanding and exploring mathematical concepts.</p> <p>Discoveries are praised in lessons and critical thinking is encouraged through collaborative learning and extension tasks.</p>	<ul style="list-style-type: none"> • Developing resilience, problem solving strategies, and an ability to find solutions independently. • Working collaboratively, learners are given opportunities to display their mastery of mathematics by explaining their ideas to their learning partners. • Understanding that mathematics links fundamentally in many future careers and aspirations – from entrepreneurship, to the cost of materials for a building project. 		
Monitoring	Conversations with Pupils	Work Scrutiny	Results analysis	Teaching and Learning Observations	