



Mathematics

At St Osburg's we know that maths is a fundamental life skill which enabling children to think logically, solve problems and understand the world



Intent- We aim to



Deliver a progressive and engaging maths curriculum where our children will develop a secure knowledge of mathematical facts, concepts and strategies.



Develop resilience and promote oracy using increasingly complex mathematical vocabulary as the children progress through the school.



Engage our children in a love for learning of mathematical facts, a curiosity and resilience for problem solving and the mathematical vocabulary to be competent in mathematical reasoning



Create a positive culture of maths where children celebrate success and develop resilience considering themselves as a mathematicians.



Implementation

At St Osburg's we follow the structure of the White Rose Maths scheme of learning from Reception to Yr6. This curriculum is ambitious and challenging with a focus on three key concepts— fluency, reasoning and problem solving.



Fluency



Reasoning



Problem Solving



Key Skills



Calculating



Applying



Recalling



Problem Solving



Checking



Reasoning

Learning Content



Number and Place Value



Four Operations



Fractions, Decimals & Percentages



Measure



Geometry



Statistics



Algebra



Ratio



A Mastery Approach

At St Osburg's we have adopted a mastery approach to the teaching and learning of maths following the National Curriculum. We follow the White Rose schemes of work which are block based in an effective order, with an emphasis on number skills first as number is central to secure fluency, then progressing to calculation and application of skills.

At the start of each lesson, opportunities are carefully built in to revisit and recall prior learning before developing new skills. Our lessons are planned to allow our children the opportunity to develop an understanding through concrete representations then moving to acquire a deeper understanding of concepts, allowing them to think with an enquiring mind and develop a love for maths and a desire to solve problems.

Retention of knowledge and fluency of recall are essential to a secure knowledge and understanding of maths. In order to ensure this, we use Flash Back 4 each day allowing the children the opportunity to consolidate and revisit a range of concepts from the previous day, previous week, previous units and recall prior knowledge of concepts before teaching.

Our schemes of work following White Rose, develop all the areas of the National Curriculum: fluency, reasoning and problem solving. This approach to acquiring a deeper understanding is rooted in the concrete, pictorial and abstract approach (CPA). This allows the children to build a firm and secure understanding, bringing maths to life and making it meaningful through the use of apparatus and resources. This firm grounding sets the way for them to independently apply their knowledge and systematically reason and solve problems.



In order to achieve mastery, children need to become fluent in the fundamentals of maths. To achieve this, we follow a staged approach of visualisation, understanding and application using White Rose resources.



Visualisation (Show it) – Children explore concepts through the use of concrete apparatus and resources, experimenting with representations in order to find an efficient calculation route.



Description (Explain it) – Here the children expand their knowledge as they begin to use the correct mathematical vocabulary to explain processes and concepts. This knowledge is crucial as to become independent learners and thinkers they must be able to explain their understanding clearly and correctly.



Experimental (Test and apply it) – At this stage the children are becoming confident that they have a secure knowledge and understanding of concepts and need the opportunity to apply this in a variety of ways through arithmetic, reasoning and problem solving.



Mastery (Prove it) – A child who has developed mastery of a concept will be able to confidently choose, use and apply methods and strategies efficiently and effectively explaining their mathematical reasoning clearly and confidently using correct vocabulary.



What this looks like at St Osburg's



- Daily dedicated maths lessons building on prior knowledge follow the stages of reasoning using White Rose
- All children are expected to use correct mathematical vocabulary, to articulate concepts clearly and confidently.
- Problem solving skills demonstrated through rich and complex problems.
- Reasoning is challenged through mathematical thinking.
- Daily opportunities outside the maths lesson to develop arithmetic skills and confidence in fluency.
- Daily opportunities outside of the maths lesson to recall prior knowledge and develop fluency through Flash Back 4, Daily 10, Top 5, Fast Maths, Minute Maths
- LKS2 daily opportunities outside the maths lesson to develop recall and retention of multiplication and corresponding division facts (TTRockstars)
- Live marking in every lesson giving effective feedback at point of teaching.
- Whole class marking / peer marking to address misconceptions quickly
- Each class has a rich maths working wall following the stages of reasoning showing the concrete, pictorial and abstract representations, precise vocabulary and sentence stems for reasoning deepening knowledge and understanding.

EYFS

Our children have daily rich and meaningful opportunities to explore maths and numbers in everyday life and the world around them. They explore maths using physical resources to help them secure understanding. Correct mathematical vocabulary is introduced from the start and verbal reasoning promoted daily. Our children engage with maths during continuous provision, small group work and whole class experiences to ensure they are ready to progress to Year 1.



Assessment



End of block tests ensure progression and identify next steps. White Rose Assessments, Test-base and past SAT's papers are used termly to monitor attainment against national benchmarks. These are tracked and monitored on assessment grids and used to provide precise and purposeful interventions.

Cultural Capital



- Mathematical quotes to be displayed in classrooms raising the profile of maths
- Real life maths – Meaningful & Purposeful e.g. links with local building society / skint to mint, bake off, money day, class project, enterprise, STEM projects and cross curricular links.

Impact



Our children will become confident, fluent mathematicians able to demonstrate their fluency, reasoning and problem solving and explain their understanding using accurate mathematical vocabulary. Our children will become efficient and accurate in selecting appropriate methods of calculating. They will work systematically with resilience in applying their knowledge to increasingly complex and unfamiliar problems.