

Maths at Falconhurst School



Intent for our Mathematicians

At Falconhurst, it is our intention that skills are embedded within Maths lessons and developed consistently over time. We are committed to ensure that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject with the ability to reason mathematically.

Characteristics of a Mathematician

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| <ul style="list-style-type: none">• An ability to make connections within Mathematics• A range of skills in applying and using Mathematics• Fluent knowledge and recall of the number system and number facts | <ul style="list-style-type: none">• The ability to reason, generalise and make sense of solutions• Fluency in performing written and mental calculations and mathematical techniques• A wide range of mathematical vocabulary |
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Implementation of Maths Education

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at Falconhurst reflect the three core skills we aim to instil in children. Through planning and teaching we aim to enable all children to become effective problem solvers who can reason effectively and explain their answers clearly across a number of different contexts.

Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics. Challenges are available in all lessons to encourage all children to push themselves and aim highly in every lesson.

Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge. Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts. Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.

To ensure whole consistency and progression, the school uses the White Rose Maths scheme, supported by Maths Shed. To ensure whole school consistency, all teachers are expected to plan the same lessons following the same structure. Previous learning is first revisited using 'Flashback in Four' which selects four different questions based on children's previous topics of learning, including learning from a previous year group. New concepts are then shared, which may be within the context of an initial related problem, (Captain Conjecture) which children are able to discuss in partners. This initial problem-solving activity prompts discussion and reasoning, as well as promoting an awareness of maths in relatable real-life contexts that link to other areas of learning.

In KS1, these problems are almost always presented with objects (concrete manipulatives) for children to use. Children may also use manipulatives in KS2. Teachers use careful questions to draw out children's discussions and their reasoning. The class teacher then leads children through strategies for solving the problem, including those already discussed. Independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems. Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. Each lesson phase provides the means to achieve greater depth, with more-able children being offered rich and sophisticated problems, as well as exploratory, investigative tasks, within the lesson as appropriate.

To ensure all children are revisiting and revising core skills often, every child in the school has a Maths Passport. These focus on the National Curriculum mental oral targets from Reception-Year 6. Children are encouraged to practise them in school and at home in order to become fluent in their number facts and times table skills. In USK2, passports also include shape and measurement fact recall to support in class learning.

Teachers are expected to ensure that challenges and intended outcomes for children match the expectations articulated within White Rose. Falconhurst School is organised in vertically grouped classes and therefore, in some phases, children access their maths learning in classes which have been organised to reflect their levels of ability. For example, within our vertically grouped KS1 classes, some children are securing Year 1 objectives whilst others are focusing on Year 2 expectations. Where children have not been grouped based on ability, teachers adopt a blended learning approach which ensures that concepts from both year groups are matched together with clarity for differentiated outcomes.

The vertical accumulation of knowledge and skills typically expected from Years 1 to 6 is mapped below

Essential National Curriculum Opportunities Key Stage 1

- Count and calculate in a range of practical contexts.
- Use and apply mathematics in everyday activities and across the curriculum.
- Repeat key concepts in many different practical ways to secure retention.
- Explore numbers and place value up to at least 100.
- Add and subtract using mental and formal written methods in practical contexts.
- Multiply and divide using mental and formal written methods in practical contexts.
- Explore the properties of shapes.
- Use language to describe position, direction and movement.
- Use and apply in practical contexts a range of measures, including time.
- Handle data in practical contexts.

Essential National Curriculum Opportunities Key Stage 2

- Count and calculate in increasingly complex contexts, including those that cannot be experienced first-hand.
- Rigorously apply mathematical knowledge across the curriculum, in particular in science, technology and computing.
- Deepen conceptual understanding of mathematics by frequent repetition and extension of key concepts in a range of engaging and purposeful contexts.
- Explore numbers and place value so as to read and understand the value of all numbers.
- Add and subtract using efficient mental and formal written methods.
- Multiply and divide using efficient mental and formal written methods.
- Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts.
- Describe position, direction and movement in increasingly precise ways.
- Use and apply measures to increasingly complex contexts.
- Gather, organise and interrogate data.
- Understand the practical value of using algebra.

	Year 1 Overview												Year 2 Overview																											
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12																
Key Stage 1	Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)				Geometry: Shape	Number: Place Value (within 20)				Autumn	Number: Place Value				Number: Addition and Subtraction				Measurement: Money	Number: Multiplication and Division	Consolidation														
	Spring	Consolidation	Number: Addition and Subtraction (within 20)				Number: Place Value (within 50)				Measurement: Length and Height	Measurement: Weight and Volume				Consolidation	Spring	Number: Multiplication and Division				Statistics	Geometry: Properties of Shape				Number: Fractions													
	Summer	Consolidation	Number: Multiplication and Division				Number: Fractions	Geometry: Position and Direction	Number: Place Value (within 100)				Measurement: Money	Measurement: Time				Summer	Measurement: Length and Height				Geometry: Position and Direction	Consolidation and problem solving				Measurement: Time	Measurement: Mass, Capacity and Temperature				Consolidation							
Lower Key Stage 2	Year 3 Overview												Year 4 Overview																											
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12																
	Autumn	Number: Place Value				Number: Addition and Subtraction				Number: Multiplication and Division				Autumn	Number: Place Value				Number: Addition and Subtraction				Measurement: Length and Perimeter	Number: Multiplication and Division																
Spring	Number: Multiplication and Division				Measurement: Money	Statistics				Measurement: Length and Perimeter				Number: Fractions	Consolidation	Spring	Number: Multiplication and Division				Measurement: Area	Number: Fractions				Number: Decimals				Consolidation										
Summer	Number: Fractions				Measurement: Time				Geometry: Properties of Shape				Measurement: Mass and Capacity				Consolidation	Summer	Number: Decimals				Measurement: Money				Measurement: Time				Statistics	Geometry: Properties of Shape				Geometry: Position and Direction				Consolidation
	Year 5 Overview												Year 6 Overview																											
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12																
	Autumn	Number: Place Value				Number: Addition and Subtraction				Statistics				Number: Multiplication and Division				Measurement: Perimeter and Area				Autumn	Number: Place Value				Number: Addition, Subtraction, Multiplication and Division				Number: Fractions				Geometry: Position and Direction					
Spring	Number: Multiplication and Division				Number: Fractions				Number: Decimals and Percentages				Consolidation	Spring	Number: Decimals				Number: Percentages				Number: Algebra				Measurement: Converting Units	Measurement: Perimeter, Area and Volume				Number: Ratio				Consolidation				
Summer	Consolidation	Number: Decimals				Geometry: Properties of Shape				Geometry: Position and Direction				Measurement: Converting Units				Measurement: Volume	Summer	Statistics				Geometry: Properties of Shape				Consolidation and themed projects												

Evaluating the Impact of our Maths curriculum on pupils' outcomes

Regular and ongoing assessment, using Headstart assessments, informs teaching, as well as children's passport progression, which are used to support and enable the success of each child. These factors ensure that we are able to maintain high standards, with achievement at the end of KS2 above the national average and a high proportion of children demonstrating greater depth, at the end of each phase.

The school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Children can under perform in Mathematics because they think they can't do it or are not naturally good at it. The White Rose programme addresses these preconceptions by ensuring that all children experience challenge and success in Mathematics by developing a growth mindset. Teachers are expected to give immediate feedback in lessons to as many children as

possible so that misconceptions can be addressed quickly. Teachers will identify incorrect answers and discuss this with children encouraging them then to go back and make the necessary changes to their work. This enables children to become resilient problem solvers; knowing that mistakes are an opportunity to learn and improve.