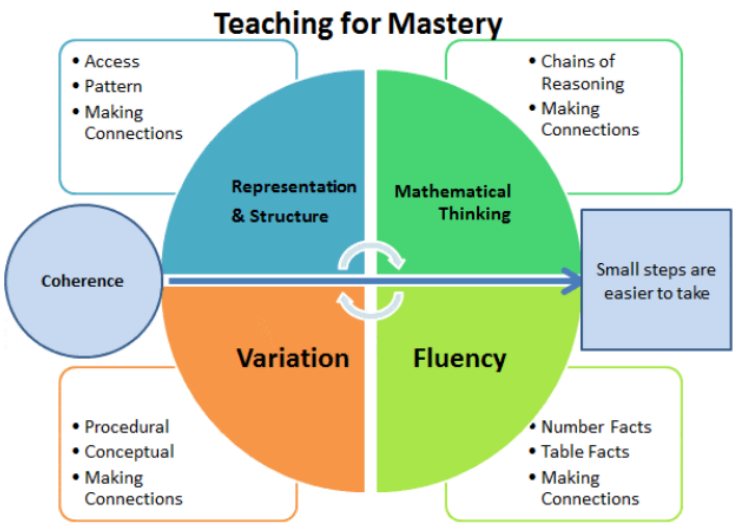
Maths – Long-term overview

Following the White Rose Maths single aged planning in all year groups. All pupils have their own maths books for all pieces of maths work. Opportunities for further learning are built in to align with key dates and events in the academic calendar.

Intent

Curriculum Aims

Our mathematics curriculum aims to develop confident, resilient and enthusiastic mathematicians who are equipped with the knowledge, skills and understanding needed to succeed in everyday life and future learning. We have adopted the mathematics mastery approach to the teaching and learning of maths. Using White Rose Maths as the foundation of our curriculum, we provide a carefully sequenced and ambitious programme of learning that enables pupils to develop a deep understanding of mathematical concepts over time. Through a balance of fluency, reasoning and problem-solving, children build secure mathematical knowledge, make connections between ideas and develop the confidence to explain and justify their thinking.



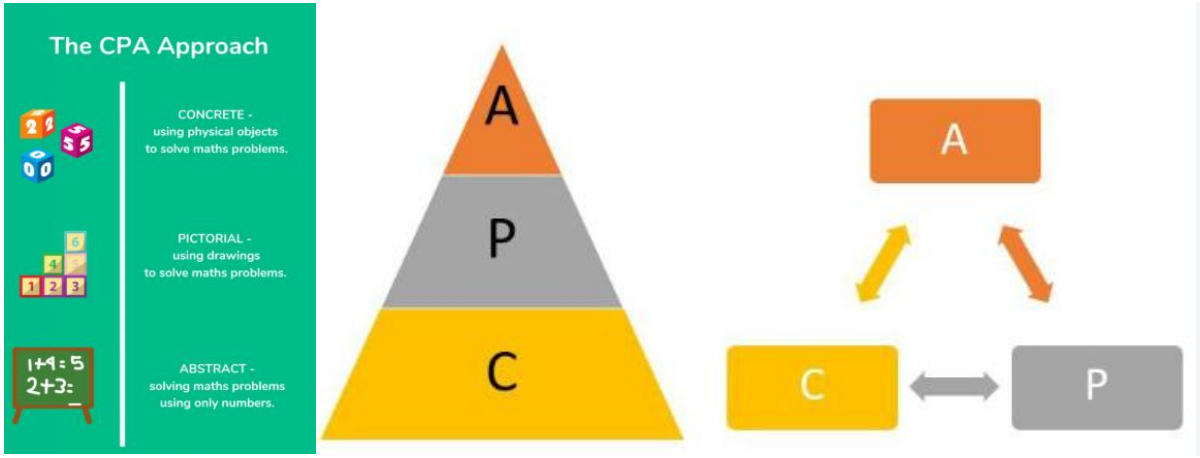
Mastery approach: Fluency and mathematical thinking:

We are committed to developing mathematical fluency from the earliest stages of learning. Alongside White Rose Maths, we select elements appropriate to the needs to the pupils from Mastering Number and NRICH to strengthen pupils' number sense, reasoning and mathematical thinking skills and secure their understanding of key mathematical concepts

through exploration and investigation. Through regular, focused sessions, at the end of each unit, children develop rapid recall of number facts, flexibility with number relationships and confidence in mental calculation strategies. This strong foundation supports future learning and enables pupils to approach increasingly complex mathematical concepts with confidence. We also use NumBots and TT Rockstars to develop mathematical fluency. Children have access to these at home.

The CPA approach

We aim to ensure that all pupils experience success in mathematics through high-quality teaching, appropriate challenge and timely support. The White Rose approach, underpinned by the Concrete–Pictorial–Abstract (CPA) model, supports children in developing strong conceptual understanding and secure procedural fluency. By promoting curiosity, resilience and a positive attitude towards learning, we encourage pupils to embrace challenge and view mistakes as valuable opportunities for learning. Our curriculum prepares children to apply their mathematical knowledge confidently across the curriculum, in real-life situations and in their future education.



National Curriculum

Our mathematics curriculum is designed to fulfil the statutory requirements of the National Curriculum (2014). Using White Rose Maths as the foundation of our planning, the curriculum is carefully sequenced to ensure progression in knowledge, skills and understanding across all year groups.

The curriculum reflects current research in mathematics education, drawing on evidence-informed approaches such as the Concrete–Pictorial–Abstract (CPA) model, mastery principles and cognitive science. Through a coherent sequence of learning, pupils develop fluency, mathematical reasoning and problem-solving skills, enabling them to make connections between concepts and apply their understanding in a range of contexts.

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The curriculum includes clear progression in number, calculation, geometry, measurement and statistics, alongside regular opportunities for retrieval and practice to secure long-term learning. Through the use of White Rose Maths, Mastering Number and NRICH, pupils build strong number sense, develop efficient calculation strategies and gain the confidence to explain, justify and evaluate their mathematical thinking. This ensures that all children develop a secure and connected understanding of mathematics, preparing them for future learning and everyday life.

Purpose of study

Our mathematics curriculum supports pupils in meeting the aims of the National Curriculum by developing their knowledge, understanding and confidence across the following key strands:

- **Fluency** – developing secure recall of number facts, efficient calculation strategies and confidence when working with mathematical concepts.
- **Reasoning** – encouraging pupils to explain their thinking, make connections, justify their answers and communicate mathematically using precise vocabulary.
- **Problem Solving** – applying mathematical knowledge and skills to a range of contexts, selecting appropriate strategies and persevering when tackling unfamiliar challenges.
- **Representation and Structure** – using concrete resources, pictorial models and abstract methods to deepen conceptual understanding and reveal mathematical relationships.
- **Mathematical Communication** – developing the ability to discuss, question and articulate mathematical ideas clearly and confidently.

To ensure progression across all areas of mathematics, the curriculum is organised into the following key domains:

- **Number** – developing secure understanding of place value, calculation, fractions, decimals and percentages.
- **Measurement** – understanding and applying concepts relating to length, mass, capacity, time, area, perimeter and volume.
- **Geometry** – exploring properties of shape, position, direction and spatial reasoning.
- **Statistics** – collecting, presenting, interpreting and analysing data.
- **Algebra and Ratio** (where appropriate in Key Stage 2) – recognising patterns, relationships and generalisations within mathematics.

Each unit is carefully sequenced within White Rose Maths' blocks of learning and contributes to the development of fluency, reasoning and problem-solving. The spiral curriculum ensures that pupils revisit and build upon prior learning, deepening their understanding and securing long-term retention of key concepts.

Alongside White Rose Maths, Mastering Number and NRICH is used to strengthen number sense and fluency in the early years and Key Stage 1, providing a strong foundation for future mathematical learning. All lessons are mapped to the National Curriculum programmes of study and are designed to support pupils in becoming confident, capable and successful mathematicians.

Maths – Long-term overview

EYFS (Reception)

The mathematics curriculum in Reception aligns with the EYFS Statutory Framework, focusing primarily on the Mathematics area of learning and supporting children's development across the Characteristics of Effective Teaching and Learning. Teaching is informed by White Rose Maths, Mastering Number and NRICH, providing a structured and coherent approach to developing early mathematical understanding.

Activities are designed to support the development of key mathematical concepts through practical exploration, discussion, play and purposeful adult-led learning. Drawing on guidance from Development Matters (non-statutory), children are encouraged to develop a deep understanding of number, numerical patterns, shape, space and measure through hands-on experiences and rich mathematical talk.

The curriculum introduces the foundational knowledge, skills and behaviours that prepare children for the National Curriculum in Key Stage 1 and beyond. Through carefully sequenced learning, children develop confidence with counting, subitising, number bonds, comparison, pattern and early calculation. The use of concrete resources, pictorial representations and mathematical language helps children build strong conceptual understanding and positive attitudes towards mathematics.

The progression of skills and knowledge document clearly demonstrates the transition from EYFS to Key Stage 1, ensuring that learning builds systematically over time. Component knowledge and skills are mapped across the key areas of early mathematics, including number, numerical patterns, geometry and measures. This provides a consistent and developmentally appropriate pathway from Reception through to Year 6, supporting pupils in becoming fluent, confident and successful mathematicians.

Continuity of learning from EYFS to KS1

The curriculum aligns with the statutory EYFS guidance.

Key themes and skills introduced in EYFS (Reception) are revisited and developed further in KS1, ensuring continuity and progression.

Progression

The units of work and lesson within each unit planning adopts a spiral curriculum model; this is where key knowledge and skills are revisited and built on at a level appropriate to children’s development.

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A spiral curriculum enables us to introduce complex topics to young children in a way that is both accessible and engaging. This method builds a strong pedagogical foundation, which can be developed further as children progress through primary school.

The progression of skills can be found in our **Curriculum progression document: Maths**

Inclusion and diversity

We believe that all pupils should see themselves as mathematicians and have access to a mathematics curriculum that is ambitious, inclusive and relevant. Mathematics is a universal language that transcends cultures, countries and generations, and our curriculum aims to ensure that every child develops confidence, enjoyment and success in the subject.

Our curriculum aims to achieve this by:

- Maintaining high expectations for all pupils through the mastery approach, ensuring that every child can access and succeed in age-related learning with appropriate support and challenge.
- Using the White Rose Maths Concrete–Pictorial–Abstract (CPA) approach to provide multiple representations of mathematical concepts, enabling pupils with different learning needs and strengths to develop secure understanding.
- Providing access to a range of manipulatives, visual models and scaffolds to support conceptual understanding while promoting independence and mathematical confidence.
- Encouraging mathematical discussion, reasoning and collaborative learning so that all pupils can share ideas, explain their thinking and learn from the perspectives of others.
- Making purposeful links between mathematics and the wider world, demonstrating how mathematics is used across different cultures, professions and everyday contexts.
- Identifying and addressing gaps in learning through responsive teaching and targeted interventions, including Mastering Number, NRICH, and additional support where appropriate.
- Promoting positive mathematical mindsets by valuing effort, perseverance and resilience, helping pupils to recognise that everyone can make progress and achieve success in mathematics.

This approach ensures that mathematics is accessible to all learners while providing opportunities for every pupil to develop fluency, reasoning and problem-solving skills. By fostering an inclusive learning environment, we aim to develop confident mathematicians who are prepared to participate fully in school life and the wider world.

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Implementation

Timetabling

Maths is timetabled in for a lesson a day, with NRICH being taught at the end of each White Rose unit and Mastering Number being taught daily for 10 minutes.

Mathematics is taught daily using the White Rose Maths scheme of learning, ensuring regular revisiting of knowledge and skills to support fluency, retention and progression. Lessons follow a structured sequence that allows pupils to build on prior learning, consolidate understanding and apply skills in increasingly complex contexts.

Mastering Number is used daily to strengthen number sense, develop secure recall of number facts and build confidence with mental calculation strategies. This consistent practice ensures that key knowledge is embedded and ready to be applied within wider mathematical learning.

NRICH problem-solving activities are used at the end of each White Rose unit to consolidate learning. These tasks provide opportunities for pupils to apply their knowledge in unfamiliar and challenging contexts, deepening understanding and promoting reasoning and resilience.

Pupils in Key Stage 2 develop fluency in multiplication using TT Rockstars and other appropriate resources outside of the daily mathematics lesson.

CPD

The White Rose Maths scheme of work includes teacher videos and schemes of learning for each unit. This ensures the teachers have a thorough understanding of the knowledge, skills, key concepts and best practice to ensure effective implementation of the curriculum. Further opportunities for CPD and support are provided by the school's subject lead and leadership team as appropriate.

Unit Structure

Within the White Rose Maths curriculum, there are key documents to support the teaching of each unit, such as the Progression of skills and knowledge and vocabulary progression.

Opportunities to activate prior learning and cross-curricular links are included within each unit.

Maths – Long-term overview

Lesson structure

Lessons are structured to ensure all pupils are able to access the learning and succeed.

Recap and recall: Each lesson begins with a short retrieval activity that revisits prior learning using the White Rose "Flashback 4" resource. This supports fluency, strengthens long-term memory and helps pupils make connections between previous and new learning. Activities are varied and designed to promote active recall of key knowledge and skills.

Attention grabber: Pupils then complete short, focused fluency activities to secure number facts and reinforce key concepts. This may include Mastering Number style practice or rapid recall tasks to build confidence and accuracy.

Main event: The core part of the lesson follows the White Rose Maths sequence, introducing new learning through the Concrete–Pictorial–Abstract (CPA) approach. This includes clear teacher modelling, guided practice and independent or collaborative tasks, allowing pupils to develop understanding, reasoning and problem-solving skills.

Wrapping up: The lesson ends with a reflective activity that consolidates learning. Pupils may review key strategies, explain their thinking, or apply their understanding in a different context to check depth of learning and address misconceptions. An opportunity to solve a problem related to the task is used to embed taught skills.

Inclusion and SEND

Our mathematics curriculum is designed to be fully inclusive and accessible for all pupils, including those with Special Educational Needs and Disabilities (SEND). Every lesson includes adaptive teaching strategies, ensuring that learning can be appropriately scaffolded, supported or extended to meet individual needs.

Children learn mathematics in a variety of ways, and our curriculum reflects this through a range of approaches that support and challenge all learners:

- **Scaffolding** – Tasks are carefully structured within the White Rose Maths scheme to provide support where needed and appropriate challenge for all pupils.
- **Concrete–Pictorial–Abstract (CPA) approach** – Pupils are supported through practical resources and visual representations to secure understanding before moving to abstract concepts.
- **Clear and structured instruction** – Mathematical language, modelling and step-by-step explanations reduce cognitive load and support accessibility.
- **Adaptive teaching within lessons** – Teachers use ongoing assessment to adjust support, challenge and questioning in response to pupils' needs.
- **Use of manipulatives and visual models** – Resources are readily available to support understanding and build confidence for all learners.
- **Small-step progression** – The White Rose Maths scheme ensures learning is broken into manageable steps, avoiding unnecessary cognitive overload and allowing secure progression over time.

• **Fluency support through Mastering Number** – Daily practice strengthens number sense and provides additional support for pupils who need further consolidation.

This approach ensures that all pupils, regardless of starting points, can access the mathematics curriculum, make meaningful progress and experience success.

IMPACT

Formative: Assessment throughout the lesson

Formative assessment is embedded throughout our curriculum to ensure that teachers can gauge pupils' understanding in real time and adapt their teaching accordingly.

- Questioning – lesson plans include targeted and open-ended questions to check understanding, promote critical thinking and address misconceptions.
- Observation – teachers are supported to observe pupils during tasks, noting how they approach activities, collaborate and apply Art and design skills.
- Discussion and peer interaction – pair and group discussions are built into lessons, providing opportunities for pupils to articulate their thinking and for teachers to assess understanding through dialogue.
- Lesson pauses – plans include strategic pause points for checking comprehension, summarising learning and addressing any common errors before progressing.
- Retrieval practice – recap activities such as short recall tasks and oral explanations are embedded to reinforce prior knowledge and assess retention.
- Use of success criteria – success criteria are shared within lessons, allowing pupils to self-assess or peer-assess their work and reflect on their progress.
- Short reflections in the Wrapping up – lessons end with brief written or verbal reflections, enabling pupils to consolidate learning and teachers to gauge understanding.

Summative: Summative assessment opportunities

Every term, each year group (apart from Year 1 in Autumn and Reception all year) will complete a paper assessment in maths. In the summer, Year 2, will complete the optional SATs papers instead. This evidence is then used by teachers to assess the pupils against the national curriculum descriptors for maths at the end of each unit. This is added to our Insight assessment tracker.

Evidencing progress

Insight is used to track progress.

The children's responses in lessons whether written, oral, photographic and creative are used as evidence of progress.

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The children's books, show progress as it builds up over time, evidence that is collected are added to these.

	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Reception	Getting to know you Match, sort and compare It's me 1,2,3	Circles and triangles 1, 2, 3, 4, 5 Shapes with 4 sides	Alive in 5 Mass and capacity Growing 6, 7, 8	Length, height and time Building 9 and 10 Explore 3D shapes	To 20 and beyond How many now? Manipulate, compose and decompose	Sharing and grouping Visualise, build and map Make connections
Year 1	Place value Addition and subtraction (within 10)	Addition and subtraction (within 10) continued Shape	Place value (within 20) Additon and subtraction (within 20)	Place value (within 50) Length and height Mass and volume	Multiplication and division Fractions Position and direction	Place value (within 100) Money Time

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Year 2	**Place value** **Addition and subtraction**	**Addition and subtraction continued** **Shape**	**Money** **Multiplication and division**	**Multiplication and division continued** **Length and height** **Mass, capacity and temperature**	**Fractions** **Time**	**Statistics** **Position and direction**
Year 3	**Place value** **Addition and subtraction**	**Addition and subtraction continued** **Multiplication and division A**	**Multiplication and division B** **Length and perimeter**	**Fractions A** **Mass and capacity**	**Fractions B** **Money** **Time**	**Time continued** **Shape** **Statistics**
Year 4	**Place Value** **Addition and subtraction**	**Addition and subtraction continued** **Area** **Multiplication and division A**	**Multiplication and division B** **Length and perimeter** **Fractions**	**Fractions continued** **Decimals A**	**Decimals B** **Money** **Time**	**Shape** **Statistics** **Position and direction**