

# Mathematics Policy

## 1. Vision and Intent

At our specialist school, we believe every student can achieve mathematical confidence and competence through high-quality, structured teaching. Our curriculum—underpinned by the White Rose Maths framework—is designed to be accessible, engaging, and challenging, using practical, pictorial, and symbolic methods to develop deep understanding and transferable skills.

## 2. Teaching and Learning Approach

### 2.1 Concrete-Pictorial-Abstract (CPA)

We follow a CPA approach to ensure all students can access and understand mathematical concepts:

- Practical (Concrete): Use of real objects and manipulatives (e.g. Numicon, Base 10) to model concepts.
- Pictorial: Transition to visual representations (bar models, number lines, diagrams).
- Symbolic (Abstract): Introduce mathematical notation and symbolic reasoning after conceptual understanding is secure.

### 2.2 White Rose Maths Structure

We use the White Rose Maths curriculum to provide:

- Small-step progression that builds on prior knowledge
- Regular opportunities to revisit and consolidate concepts
- Deep reasoning and problem-solving tasks integrated throughout

## 3. Language and Communication in Maths

Mathematical language is explicitly taught, modelled, and expected in student responses. We:

- Discussion scaffolds
- Encourage full sentence verbal reasoning and mathematical explanations
- Ensure students understand and use correct terms for operations, properties, and processes

## 4. Metacognition and Conceptual Connections

To build strong mathematical thinkers, we teach students how to think mathematically:

- Model metacognitive strategies (e.g. “What do I already know?” “How does this relate to previous learning?”)
- show links across units and topics
- Prompt students to verbalise their thought processes and reflect on strategies

## 5. Use of Technology

Technology is integrated purposefully to:

- Enhance engagement and visual understanding (e.g. Doodle Maths)
- Provide adaptive practice and instant feedback (e.g. Doodle maths, White Rose digital resources)



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- Encourage exploration, generalisation, and application of concepts (e.g. practical mathematical elements of the farm such as food ordering and paddock creation, spreadsheet modelling)

## 6. Questioning, Reasoning and Problem-Solving

We use tiered questioning to:

- Assess understanding (What do you notice? Can you explain why?)
- Promote reasoning (Is there another way? What happens if...?)
- Extend problem-solving (Can you apply this to a new situation? Can you create your own question?)

All lessons include:

- Opportunities for both guided and independent problem-solving
- Collaborative reasoning discussions

## 7. Assessment for Learning

Ongoing assessment includes:

- Diagnostic questioning
- Verbal responses and student explanations
- Use of White Rose end-of-block assessments
- Feedback that encourages reflection and metacognitive planning

## 8. Cross-Curricular and Generalisation

Students are supported in applying maths beyond the maths classroom:

- Real-world problem-solving tasks
- Mathematical links to science, technology, and other curriculum areas
- Projects that require data handling, measurement, spatial reasoning, or financial literacy

## 9. Inclusion and Support

All students receive access to high-quality maths education:

- Differentiated resources and scaffolded support
- Access to visual aids, manipulatives, and technology
- Targeted interventions using White Rose's diagnostic tools

## 10. Monitoring and Review

We regularly review curriculum delivery through:

- Book reviews and lesson observations
- Student voice and engagement surveys
- Ongoing CPD focusing on mastery, metacognition, and digital integration

## Review

This policy will be reviewed on an annual basis as a minimum. Next review date 01.09.2025



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