Policy Name	Numeracy Policy
Policy No.	NA18
Date Written	07.05.24
Date to Review	07.05.25
Author	Anthony Merriman
Cross Reference	• Curriculum Policy • Pupil Assessment Policy • SEND Policy

Contents	

1. Curriculum Overview

In Maths, we are committed to providing a comprehensive mathematics curriculum that equips students with the knowledge, skills, and strategies needed for success in mathematics and beyond. We are proud to implement the White Rose Maths programme, a structured and progressive approach to teaching mathematics.

Declarative Knowledge

Our curriculum plans, aligned with the White Rose Maths programme, outline key facts, formulae, conventions, and symbols to be learned at all phases, along with benchmarks for automaticity. Mathematical vocabulary and concepts are systematically developed alongside key facts and methods, ensuring students have a deep understanding of mathematical language and reasoning. Through carefully scaffolded learning experiences, students readily apply prior learning in more complex tasks and become familiar with principles enabling the conversion of word problems into equations. By the end of each phase, students have a secure grasp of place value, fractions, decimals, percentages, powers, roots, and units, laying a strong foundation for further mathematical exploration.

Procedural Knowledge

Our curriculum plans acknowledge the most efficient and accurate methods that students will use, balancing procedures that rely on derivation with those that train recall. Students are equipped with the knowledge of how to lay out calculations and algebraic notation systematically and legibly, preparing them for abstract mathematical reasoning. Through the White Rose Maths programme, all students develop procedural knowledge that enables them to work confidently in the abstract, calculate with number, use algebraic methods, and apply formal algorithms with speed and accuracy.

Conditional Knowledge

Our curriculum plans ensure that students obtain automaticity in linked facts and methods before being expected to deploy them in problem-solving. Students familiarize themselves with the conditions where combinations of facts and methods will be useful, developing strategic thinking and problem-solving skills. Carefully chosen problems challenge students to see past surface features and recognize the deep structure of problems, promoting confidence and proficiency in problem-solving without resorting to unstructured trial and error approaches.

Components & Sequencing

The White Rose Maths programme meticulously selects content to ensure that pupils acquire the necessary building blocks for later mathematical work. Concepts are introduced progressively, with each phase building upon prior knowledge and skills.

Once key facts and methods are learned, the programme provides opportunities for pupils to apply their learning to different contexts. Through problem-solving tasks and real-world applications, pupils develop a deeper understanding of mathematical concepts and their relevance beyond the classroom.

Progression through the curriculum is carefully structured and guaranteed for all pupils. The programme's coherent and linear progression ensures that every pupil has access to the same high-quality mathematical education, with the pace of learning adjusted to individual needs.

Plans within the White Rose Maths programme engineer successful opportunities to connect concepts within and between topic sequences. Pupils are encouraged to make connections across different areas of mathematics, fostering a holistic understanding of the subject.

The programme actively addresses common misconceptions by providing clear explanations, examples, and opportunities for practice. Lessons are designed to pre-emptively address potential areas of confusion and clarify misconceptions as they arise.

Pupil errors are immediately highlighted and corrected within the White Rose Maths programme. Teachers use formative assessment strategies to identify misconceptions and provide timely feedback, ensuring that pupils have the opportunity to learn from their mistakes and make progress.

This approach ensures that all pupils have access to a high-quality mathematics education that is coherent, progressive, and designed to support their mathematical development effectively.

Memory

- **Overlearning and Consolidation**: The White Rose Maths programme ensures that overlearning and consolidation can take place frequently. Concepts are revisited and reinforced through regular practice, allowing pupils to develop fluency and mastery.
- **Referring to Previous Work**: Pupils are encouraged to refer to work and content learned previously as part of the programme's approach to building a strong foundation of mathematical knowledge. Concepts are interconnected, enabling pupils to make connections between new and previously learned material.
- **Balance Between Rehearsal**: Plans within the White Rose Maths programme strike a balance between rehearsal of explanations and rehearsal of facts and methods to complete exercises and solve problems. Pupils engage in both conceptual understanding and procedural fluency activities to support their mathematical development.
- **Prioritisation of Core Content**: The programme prioritises thinking about core content by ensuring that pupils know what to do. Clear learning objectives and instructional sequences guide pupils through the curriculum, emphasising key concepts and skills.
- **Prevention of Guessing**: Plans actively prevent the need for guessing, casting around for clues, and unstructured trial and error. Tasks and activities are designed to scaffold learning and provide support for pupils, reducing the likelihood of reliance on guesswork.
- **Recall of Facts and Formulae**: Pupils are encouraged to recall, rather than derive, facts and formulae without the use of memory aids. Through regular practice and reinforcement, pupils develop automaticity in recalling mathematical facts and concepts, facilitating problem-solving and application.

2. Pedagogical Principles

Our Maths programme of study is guided by the pedagogical principles of the White Rose Maths programme. These principles underpin our approach to teaching and learning, ensuring that every pupil receives a high-quality mathematics education that is coherent, structured, and engaging.

Concrete-Pictorial-Abstract (CPA) Approach
The White Rose Maths programme adopts a Concrete-Pictorial-Abstract approach, which allows pupils to build their understanding of mathematical concepts through hands-on experiences, visual representations, and abstract reasoning. This approach provides concrete experiences that engage learners and facilitate understanding.

Mastery Learning
Mastery learning is central to the White Rose Maths programme. Lessons are carefully designed to ensure that all pupils have the opportunity to master key mathematical concepts before progressing. This approach fosters a sense of achievement and confidence in learners, helping them to overcome challenges and make progress at their own pace.

Problem-Solving and Reasoning
Problem-solving and reasoning activities are integral to the White Rose Maths programme. These activities provide opportunities for pupils to apply their knowledge and skills in real-world contexts, promoting critical thinking, perseverance, and resilience.

Differentiation and Personalisation
The White Rose Maths programme recognises the diverse needs of all pupils. Lessons are differentiated to meet the needs of individual learners, providing additional support and scaffolding where necessary, while also offering opportunities for challenge and extension. Personalised interventions are provided to address individual learning needs and ensure that every pupil receives the support they require to succeed.

Formative Assessment and Feedback
Formative assessment and feedback are key components of the White Rose Maths programme. Ongoing assessment allows teachers to monitor the progress of pupils, identify areas of strength and weakness, and provide timely feedback to support learning. Constructive feedback helps to build confidence and motivation in learners, empowering them to take ownership of their learning and make meaningful progress.

3. Summative Assessment

We implement Rising Stars as our principal tool for summative assessment in mathematics. This is because it offers a comprehensive array of assessment materials intended to gauge pupils' understanding and attainment across various key mathematical concepts and skills.

Rising Stars provides assessment resources covering a broad spectrum of mathematical topics and abilities, all closely aligned with the National Curriculum. These assessments are structured to evaluate pupils' knowledge, grasp, and application of mathematical principles as they progress through their education, and aligns with the WRM programme we implement.

The standardised assessments provided by Rising Stars enable us to measure pupils' progress and achievement against national benchmarks. This data is invaluable for tracking individual pupil progress over time and pinpointing areas where additional support may be necessary through its QLA output.

Indeed, Rising Stars' assessment materials offer diagnostic insights into pupils' mathematical comprehension. By examining responses to carefully crafted questions and tasks, we can identify any misconceptions, gaps in understanding, or areas of weakness, allowing us to tailor our teaching and interventions to suit each pupil's requirements.

4. Numeracy Culture

7 key principles sit behind establishing a positive numeracy culture:

Celebrating Mastery: We celebrate pupils' mastery of mathematical concepts, fostering a culture where proficiency is recognised and celebrated.

Understanding Real-world Application: Pupils appreciate how mathematics drives advancements in technology and science, understanding its practical applications in the world around them.

Active Engagement: We promote active engagement with mathematics, encouraging pupils to explore, question, and collaborate in their learning.

Rewarding Effort and Achievement: Effort and achievement are rewarded, instilling in pupils the understanding that success in mathematics is the result of dedication and perseverance.

Diverse Enrichment Opportunities: Pupils benefit from diverse enrichment opportunities, including competitions, challenges, and extracurricular activities, to deepen their mathematical understanding and enjoyment.

Cross-curricular Integration: Mathematics is seamlessly integrated across the curriculum, highlighting its connections to other subjects and real-life contexts.

Inclusive Support System: We provide a supportive and inclusive environment where all pupils receive the necessary support and encouragement to succeed in mathematics, ensuring that every pupil reaches their full potential.

5. Systems

There is a designated lead for Maths, whose responsibility covers the delivery and the support of other teachers to deliver this subject effectively, including providing internal and external support/CPD to support instruction.

Implementing whole school models ensures that the subject remains predictable, cohesive, and robust.

6. Monitoring and Evaluation

The Maths Lead / Headteacher will be responsible for the quality of the Maths provision.

Governors will ensure that the quality of education is regularly scrutinised to ensure it is meeting the required standard.

There will be a full monitoring and evaluation schedule in place to quality assure assessment and pro-actively address when appropriate progress is not being made.

Updates

Dates	Comments