St Mary's CE Middle School

Mathematics Curriculum

At St Mary's we have high expectations and endeavour to challenge and inspire all our students to persevere and be the best mathematicians they can be.

As our students progress from Year 5 through to Year 8, we support them to build upon their core foundation skills from First School and extend their numeracy and mathematical reasoning skills, in order to apply these successfully and with increasing confidence in other subject areas and in their everyday lives.

Our Maths Mastery approach is about developing enquiring minds and instilling our enthusiasm and passion for learning in mathematics. We endeavour to enrich our students' mathematical experience, to challenge thinking, and extend subject knowledge into real life applications; we wish our students to develop the confidence and fluency to take their learning out of the maths classroom and apply their skills and strategies efficiently in new, and exciting, cross curricular situations and problem-solving activities.

Analytical thinking is at the heart of mathematics and our intent is to support learners to develop their mathematical thinking and enquiry skills.

Underpinning principles of our Mastery curriculum:

- Mathematics teaching for mastery assumes everyone can learn and enjoy mathematics. We believe that all our students can succeed and we encourage them to learn from their mistakes and persevere when they find something challenging.

- Mathematical learning behaviours are developed such that pupils focus and engage fully as learners who reason and seek to make connections.

- Teachers in our KS2 and KS3 maths teams continually develop their specialist knowledge for teaching mathematics, and work collaboratively to refine and improve their teaching. Staff work alongside the National Centre for Excellence in Teaching Mathematics (NCETM) to develop expertise.

Our curriculum design ensures a coherent and detailed sequence of essential content and skill development to support sustained progression over time. It is focussed on securing the building blocks of mathematical skills and knowledge and scaffolds learning through the 4 years at St Marys. Our curriculum is updated continuously to meet the needs of individual students in response to the outcomes of assessments and the needs of each particular cohort.

Lesson design

- Lesson design links to prior learning to ensure all can access the new learning and identifies carefully sequenced steps in progression to build secure understanding.

- Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling pupils to develop a deep knowledge of mathematics.

- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.

- We recognise that practice is a vital part of learning, but the practice must be designed to build stamina and both reinforce pupils' procedural fluency and develop their conceptual understanding.

In the classroom

- Pupils are taught through whole-class interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence.

- In a typical lesson, the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion, enabling pupils to think, reason and apply their knowledge to solve problems.

- Use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.

- If a pupil fails to grasp a concept or procedure, this is identified quickly, and gaps in understanding are addressed systematically to prevent them falling behind. We offer a range of responsive SEND support programs, including individual learning adaptations, additional pre and post- teaching sessions, and targeted small group 'catch up' and 'keep up' interventions.
- Significant time is spent developing core skills and a deep understanding of the key ideas that are needed to underpin future learning.

- Key number facts are learnt to automaticity, and other key mathematical strategies are learned deeply and practised regularly, to avoid cognitive overload in working memory and to enable our pupils to focus on new learning.

Curriculum Design – Key Stage 2

Students in Years 5 and 6 follow our new mastery curriculum, based on the NCETM Curriculum Prioritisation ideas:

	Unit	Unit name
Autumn 1	1	Decimal fractions
	2	Money
Autumn 2	3	Negative numbers
	4	Short multiplication and short division
Spring 1	5	Area and scaling
Spring 2	6	Calculating with decimal fractions
	7	Factors, multiples and primes
Summer 1	8	Fractions
Summer 2	9	Converting units
	10	Angles

- Number and place value
- Number facts
- Multiplication and division
- Fractions
- Geometry
- Other

Year 5

Curriculum map

NCETM
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Summer 2021

	Unit	Unit name
Autumn 1	1	Calculating using knowledge of structures (1)
	2	Multiples of 1,000
Autumn 2	3	Numbers up to 10,000,000
	4	Draw, compose and decompose shapes
Spring 1	5	Multiplication and division
	6	Area, perimeter, position and direction
Spring 2	7	Fractions and percentages
Summer 1	8	Statistics
		KS2 tests
Summer 2	9	Ratio and proportion
	10	Calculating using knowledge of structures (2)
	11	Solving problems with two unknowns
	12	Order of operations
	13	Mean average

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Geometry
- Other

Year 6

Curriculum map

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June 2021

Curriculum Design – Key Stage 3

As pupils move into Key Stage 3, we adopt the **White Rose scheme**, which builds on mastery principles while introducing greater complexity. Students deepen their knowledge of algebra, geometry, and data handling, preparing them for the challenges of GCSE and beyond.

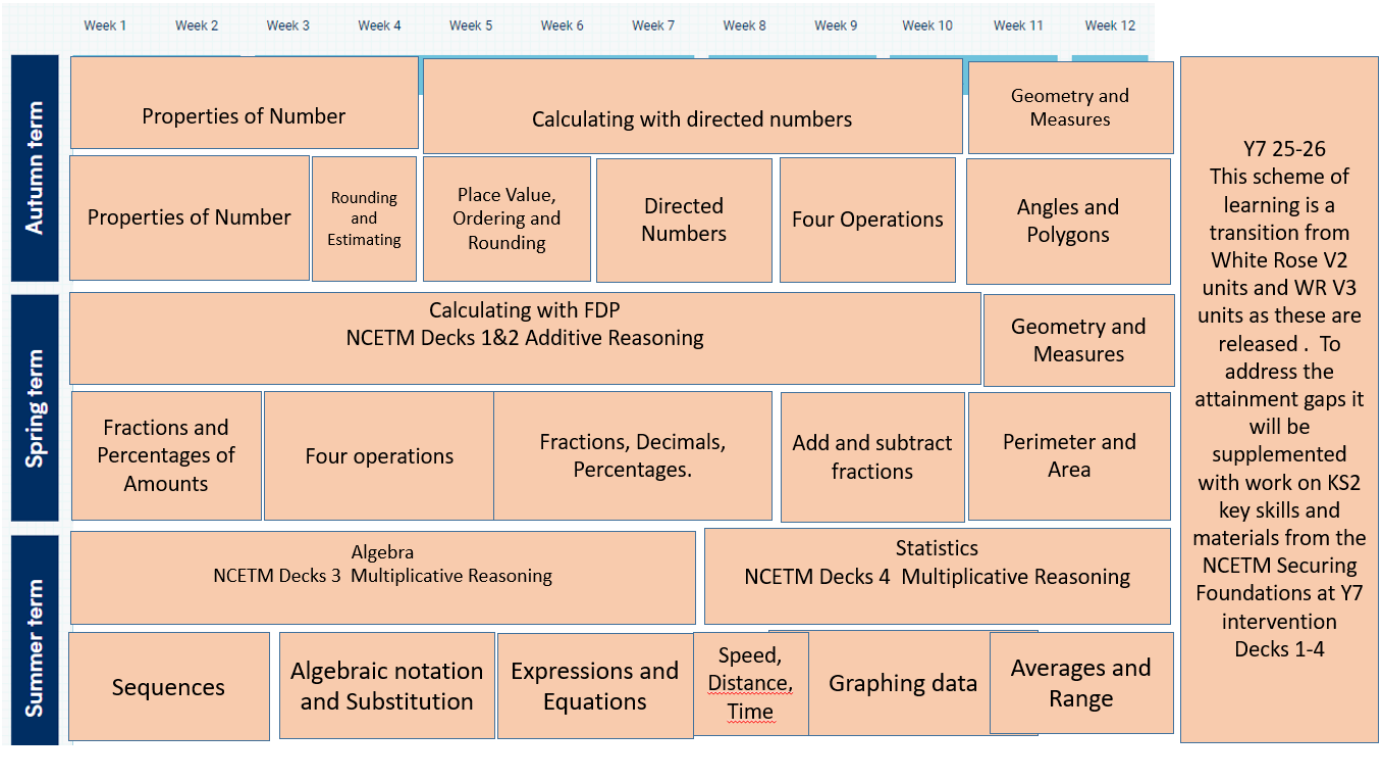
There are 5 Mastery units: **Number**, **Calculation**, **Algebra**, **Geometry and Measures** and **Statistics**. Each half term we target a big idea and continue to develop the building blocks, such as Place Value and reasoning, and explore and refine strategies for problem solving. We make connections across the maths topic areas and build on key skills, vocabulary and the big ideas from the previous terms, to aid use and application of core skills and retention.

Each Mastery unit addresses vocabulary and the key skills within the KS3 programme of study and is scaffolded across the Y7 and Y8 learning journey.

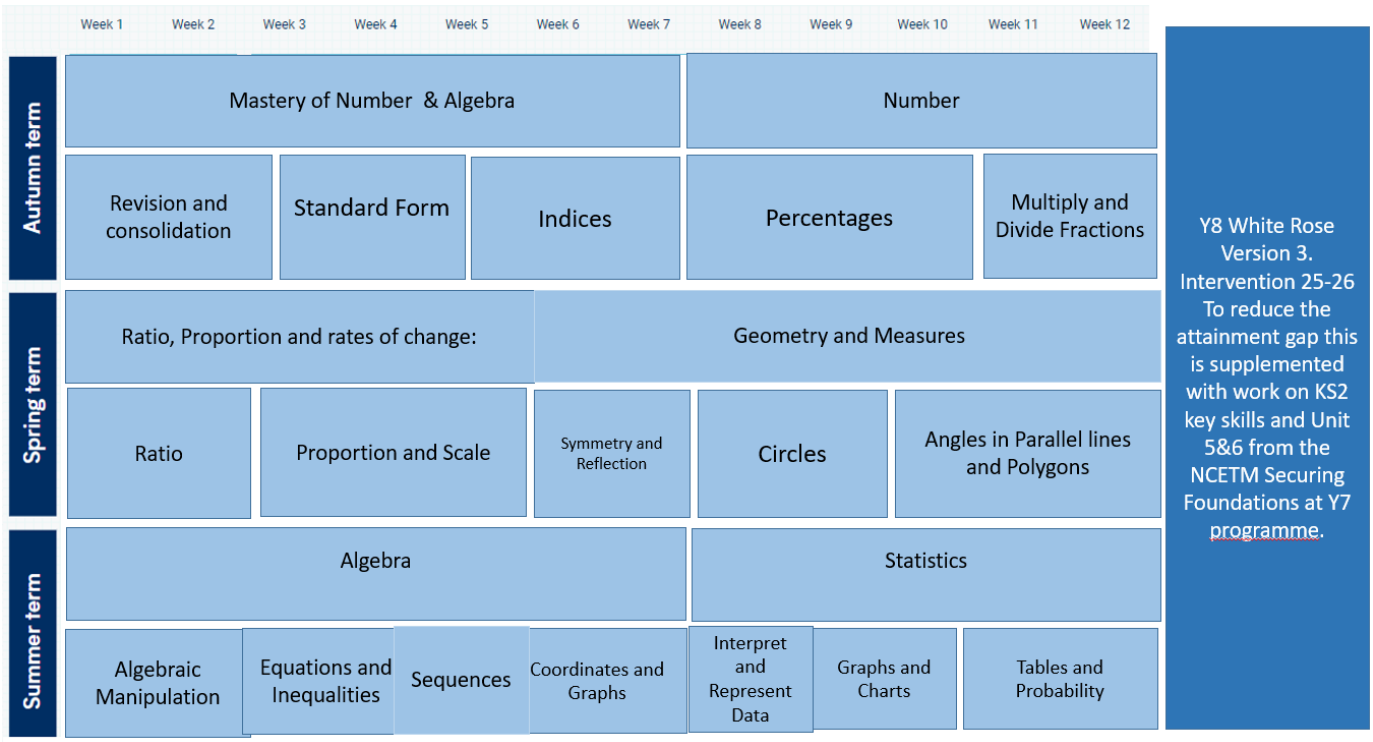
This is supplemented by revisiting prior learning and addressing gaps in foundation skills using the NCETM intervention materials *Securing Foundations at Y7*.

The focus of Year 8 is developing analytical thinking and oracy; to embed rich dialogue and critical thinking; to respectfully agree or disagree with peers. Students are encouraged to share their thinking and to show improved language skills in topic related mathematics. Collaborative learning and sharing strategies when problem solving enables them to develop greater awareness of the importance of flexible thinking and communicating their reasoning effectively both verbally and in written form.

Year 7



Year 8


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 term
Mastery of Number & Algebra
Number
Revision and consolidation
Standard Form
Indices
Percentages
Multiply and Divide Fractions
Spring term
Ratio, Proportion and rates of change:
Geometry and Measures
Ratio
Proportion and Scale
Symmetry and Reflection
Circles
Angles in Parallel lines and Polygons
Summer term
Algebra
Statistics
Algebraic Manipulation
Equations and Inequalities
Sequences
Coordinates and Graphs
Interpret and Represent Data
Graphs and Charts
Tables and Probability
Y8 White Rose Version 3. Intervention 25-26 To reduce the attainment gap this is supplemented with work on KS2 key skills and Unit 5&6 from the NCETM Securing Foundations at Y7 programme.