

St Mary's Catholic Primary Mathematics Curriculum



“I am the way, the truth and the life.”

(John 14:6)

We place our children at the heart of all we do,
inspired by the love, life and teachings of Jesus.

We aim to:

Nurture, Prepare, Support, Enable

Intent

Maths is a skill we use on a daily basis and is an essential part of everyday life. Therefore, mathematics forms an important part of our broad and balanced curriculum where we endeavour to ensure that children develop an enjoyment and enthusiasm for maths that will stay with them throughout their lives and empower them in future life. We believe that unlocking mathematical fluency is an essential life skill for all learners and is a pre-requisite to being able to reason and solve problems mathematically. Our aim is to develop a positive culture of deep understanding, confidence and competence in maths that produces strong, secure learning. As a school, we recognise that the key to unlocking the potential in our children is through the development of basic mathematical skills and the understanding of mathematical concepts. We therefore place great emphasis on the use of concrete resources and pictorial representations at all ages, to enable children to fully understand the concepts and principals, when presented with abstract calculations and questions.

In short, our three main aims in the teaching of mathematics are that all pupils:

- Become fluent in the fundamentals of mathematics
- Can reason mathematically
- Can solve increasingly complex problems

Our intention is:

To ensure all of our pupils become numerate.

To instil confidence in them to apply their mathematical skills to solve problems.

To enable our pupils to use the correct mathematical language when reasoning about the subject.

To develop a positive attitude towards mathematics and be aware of its importance as a life skill.

Implementation

Mathematics at St Mary's school is taught through the 'Power Maths' mastery mathematics programme. This programme is being developed across the Plymouth CAST schools. It is a mastery programme of study.

The school and the teachers follow the programme of study which is a spiral curriculum reviewing and revisiting key concepts and components of knowledge over time. Alongside the thorough programme of study pupils also have an opportunity to recall arithmetic facts through a '5 in 5 fluency' check. These are adapted by teachers and consist of low stake tasks that are revisited over and over again and applied through a variety of ways.

The children answer 5 questions in 5 minutes in order to build pace, fluency in maths and recall skills.

Although Power Maths provides a great basis for learning mathematics we are also conscious of the need to have further challenge for pupils who are already mathematical proficient. Further challenge is provided through access to NCETM and NRICH. These challenges provide pupils with the opportunity to deepen their learning even further once they have a good understanding of concept or component of knowledge.

What is mastery?

5 big principles to teaching mastery

Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

Mathematical Thinking

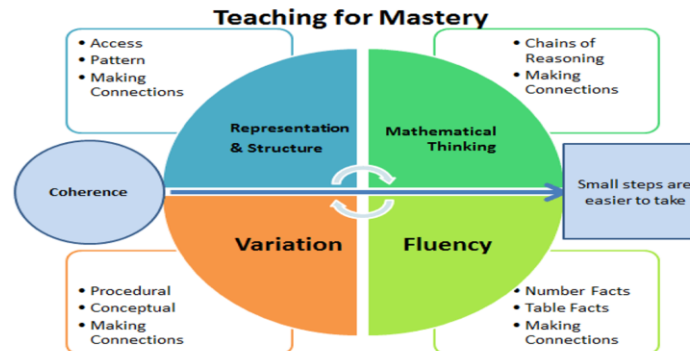
If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.



When teaching mastery, it is important to remember that fluency and variation, representation, mathematical thinking, coherence with small steps which enable children to develop as mathematicians.

Please refer to these if asked about your teaching and learning in mathematics.

Year 1 – Yearly 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
Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)				Geometry: Shape	Number: Place Value (within 20)		Consolidation
Spring	Number: Addition and Subtractions (within 20)				Number: Place Value (within 50) (Multiples of 2, 5, 10 to be included)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Number: Multiplication and Division (Reinforce multiples of 2, 5 and 10 to be included)			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time		Consolidation

Year 2 – Yearly 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
Autumn	Number: Place Value			Number: Addition and Subtraction				Measurement: Money		Number: <u>Multiplication</u> and Division		
Spring	Number: <u>Multiplication</u> and <u>Division</u>		Statistics		Geometry: Properties of Shape		Number: Fractions			Measurement: Length and Height	Consolidation	
Summer	Position and Direction			Problem solving and efficient methods		Measurement: Time		Measurement: Mass, Capacity and Temperature		Investigations		

Year 3 – Yearly 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
Autumn	Number: Place Value			Number: Addition and Subtraction				Number: Multiplication and Division			Consolidation	
Spring	Number: Multiplication and Division			Measurement: Money	Statistics	Measurement: Length and Perimeter			Number: Fractions		Consolidation	
Summer	Number: Fractions			Measurement: Time		Geometry: Property of Shapes		Measurement: Mass and Capacity			Consolidation	

Year 4 – Yearly 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
Autumn	Number: Place Value				Number: Addition and Subtraction			Measurement: Length and Perimeter	Number: Multiplication and Division			Consolidation
Spring	Number: Multiplication and Division			Measurement: Area	Fractions				Decimals			Consolidation
Summer	Decimals		Measurement: Money		Measurement: Time	Statistics		Geometry: Property of Shape			Geometry: Position and Direction	Consolidation

Year 5 – Yearly 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
Autumn	Number: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division		Perimeter and Area		Consolidation
Spring	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
Summer	Number: Decimals				Geometry: Properties of Shapes			Geometry: Position and Direction	Measurements: Converting Units		Measurement: Volume	Consolidation

Year 6 – Yearly 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
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division				Fractions				Geometry: Position and Direction	Consolidation
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Consolidation
Summer	Geometry: Properties of Shapes		Problem solving			Statistics		Investigations				Consolidation

Links to websites

Pearson <https://www.pearson.com/international-schools/british-curriculum/primary-curriculum/power-maths.html>

NCETM <https://www.ncetm.org.uk/teaching-for-mastery/>

NRICH maths <https://nrich.maths.org/>

Resources

An introduction to Power Maths <https://www.youtube.com/watch?v=6eqM50ulj6M>

Power up Power Maths <https://www.youtube.com/watch?v=6eqM50ulj6M>

Understand the Power Maths lessons <https://www.youtube.com/watch?v=dP1cRinTmAc>

Daily maths challenge <https://mathshub.thirdspacelearning.com/topical>

5 in 5 resources <https://mathshub.thirdspacelearning.com/resources?text=5+in+5>

Games and puzzles <https://nrich.maths.org/primary>

Subject leadership

Primary Subject Audit materials <https://www.ncetm.org.uk/classroom-resources/pska-primary-subject-knowledge-audit/>