

'Growing and maturing in our learning journey'



Maths

'They are like trees that grow beside a stream, that bear fruit at the right time, and whose leaves do not dry up. They succeed in everything they do.' Psalms 1:3

Intent

Implementation

Impact



WE AIM FOR ALL CHILDREN TO BECOME FLUENT IN THE FUNDAMENTALS OF MATHEMATICS SO THAT PUPILS DEVELOP A CONCEPTUAL UNDERSTANDING AND THE ABILITY TO RECALL, REASON AND APPLY KNOWLEDGE THROUGH PROBLEMS WITH INCREASING SOPHISTICATION.



THEY WILL BE GIVEN FREQUENT, VARIED PRACTISE WITH INCREASING COMPLEX, PROBLEMS AND THE OPPORTUNITIES TO FOLLOW A LINE OR ENQUIRY, CONJECTURING RELATIONSHIPS AND DEVELOP AN ARGUMENT, JUSTIFICATION OR PROOF USING MATHEMATICAL LANGUAGE.



CHILDREN WILL BE ABLE TO SHOW CONCEPTUAL UNDERSTANDING WITH THE ABILITY TO RECALL AND APPLY KNOWLEDGE RAPIDLY AND ACCURATELY. THEY WILL BE ABLE TO BREAK DOWN PROBLEMS IN SMALLER STEPS AND PRESERVE IN SEEKING SOLUTIONS USING THEIR SECURE UNDERSTANDING.

Intent



When planning and teaching mathematics at Spetisbury, we believe in mastery for all. The process of mastering maths - a gradual, accumulative process experienced as a child goes through school- creates a tool for life. All pupils are encouraged by the belief that by working hard at maths they can succeed. It is immeasurably more valuable than the short term ability to answer questions in tests or exams.

We achieve this through talking about, investigating and representing mathematical concepts. Children grow to 'notice' number and invest the time in experimenting, solving, concluding and explaining these patterns. They appreciate that mental calculations and written procedures, when chosen appropriately, can be performed efficiently, fluently and accurately to attain solutions. They develop a breadth of understanding of number, parts of a whole (fractions, decimals & percentages), geometry, measure, statistics and problem solving and are able to apply this to the world around them.

Implementation



At Spetisbury, we use 'White Rose Hub', supplemented by a variety of Mastery based resources including NCETM to ensure pupils will:

- Become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.
- Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

Implementation



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 Subtraction (within 20)				Number: Place Value (within 50) (Multiples of 2, 5 and 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	Time		Consolidation

Implementation



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	

Implementation



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 – Properties of Shapes		Measurement: Mass and Capacity			Consolidation	

Implementation



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		Time	Statistics	Geometry- Properties of Shape			Geometry- Position and Direction	Consolidation		

Implementation



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 & Percentages		Consolidation
Summer	Number – Decimals				Geometry- Properties of Shapes			Geometry- Position and Direction	Measurement- Converting Units		Measures Volume	Consolidation

Implementation



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

Impact



In order to evaluate the level to which children are retaining knowledge and able to apply their learning to a range of situations, we use a range of techniques:

- CPD to ensure that teacher pedagogy and assessment is secure.
- Regular feedback, marking and pupil voice feedback.
- Subject monitoring including book scrutinies.
- Regular low stakes assessment, using a range of creative approaches.
- More formal assessment to track progress and to identify gaps.
- Cross trust moderation to ensure secure teacher judgements.
- Cross-curricular opportunities to enable opportunities to apply the skills through other curriculum areas.

National Curriculum Expectations

EYFS

Develop a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

National Curriculum Expectations

Key Stage 1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

National Curriculum Expectations

Lower Key Stage 2

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling

National Curriculum Expectations

Upper Key Stage 2

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.