Spaxton
Founded 1860
C of E Primary School

Our Curriculum

Maths

'Together we Flourish and Achieve'

Maths Curriculum

Contents

Intent

At Spaxton, we believe that all children should have:

- A secure understand of maths and number.
- A positive and resilient attitude towards mathematics.
- Competence and confidence in mathematic knowledge, concepts and skills.
- An ability to solve problems, to reason, to think logically and to work systematically and accurately.
- A range of learning of learning strategies: working both collaboratively and independently.
- Fluency in mathematics where children can express ideas confidently and talk about the subject using mathematical language.
- An understanding of the importance of mathematics in everyday life.
- Independent learners who take responsibility for their own learning.

This is underpinned by our school curriculum intent which in turn is underpinned by the QET principles.

At Spaxton, we deliver a broad and balanced curriculum to all our pupils. Through our ambitious curriculum offer, that has been carefully designed to ensure it is sequential and progressive through each stage, we believe it allows:

1. **Holistic Development**: It supports the overall development of our children, addressing their academic, social, emotional, and physical needs. This approach ensures that our pupils at Spaxton are well-rounded and prepared for next stage of learning and any other future challenges.
2. **Engagement and Motivation**: A varied curriculum keeps our pupils engaged and motivated by offering a range of subjects and activities. Our broad and balanced curriculum offer helps cater to different interests and learning styles, making education more enjoyable and effective for all.
3. **Critical Thinking and Problem-Solving**: Exposure to a wide range of subjects encourages critical thinking and problem-solving skills. Our pupils learn to make connections between different areas of knowledge, enhancing their cognitive abilities.
4. **Cultural Awareness and Respect**: Our broad curriculum includes subjects like history, geography, and the arts, which help our pupils understand and appreciate different cultures and perspectives. This fosters respect and empathy for others. This is particularly important due to our village rural location.
5. **Preparation for Future Learning**: Our balanced curriculum provides a strong foundation in core subjects like English and maths while also introducing pupils to other areas of knowledge. This prepares them for more specialised learning in secondary education and beyond
6. **Personal Growth and Well-being**: Subjects like physical education, music, and art contribute to pupils' physical and emotional well-being. They provide opportunities for self-expression, creativity, and physical activity, which are crucial for healthy development.

Our school curriculum is bespoke and designed to meet the needs of the children in our school. It is underpinned by the Quantock Education Trust curriculum principles (SMART) which guide the development and review of the curriculum in all schools in the Trust:

- A strong and carefully Sequenced curriculum, so that children and young people's learning progresses in a way that builds knowledge intentionally and cumulatively
- A curriculum that Motivates children and young people so they can value and experience joy in learning whilst developing their own unique voice.
- An Ambitious curriculum, so that children and young people are challenged and empowered to think deeply and critically and grapple with complexity, challenge assumptions, question accepted authorities and embrace curiosity.
- A curriculum that is Responsive, so that it meets the needs of children and young people in our local community as well as opening doors to the wider world.
- A curriculum that is Transformative, so that children and young people can put their learning to use as active citizens, working for social justice, environmental stewardship and a healthy, equitable world, enabling them to build character and shape their future.

Implementation

At Spaxton, we deliver our mathematics curriculum using a mastery approach. The main difference that stands out with the Mastery approach is that children are taught together to master their own year group's objectives and deepen rather than rush onto the next year's content. All children are capable of learning Maths to a high level. Some children will take longer than others to grasp content and others will grasp content rapidly. This doesn't necessarily make them better Mathematicians. Teachers put in place appropriate adaptations, where necessary, to ensure all achieve.

Mathematics plays an important role in children's lives and in our we want all children to Flourish and achieve together. The rationale behind this policy is that in order for children to progress as Mathematicians, they need to gain a deep understanding of the concepts underpinning Mathematics in order to succeed in the three aims of Fluency, Problem Solving and Reasoning.

We follow the overview from NCETM and do not follow a spiral curriculum. The sequence is well-thought out and the order builds on previous units, encouraging interleaving. The small-steps approach builds on prior learning both from the previous lesson, previous units and previous years. Topics are revisited each year except for year-specific topics. The order of the knowledge to be gained varies per year group. Methods of calculations are taken from our calculation policy.

Due to the size of our school, we have worked with the Boolean Maths Hub to adapt the NCETM curriculum to allow us to teach a 2-year rolling programme in Years 3 and 4 and in Years 5 and 6. Therefore we are teaching the whole class the same objective and by the end of their time in that class, the will have covered all objectives for the 2 year groups.

Fluency, problem solving and reasoning are built into every lesson and tasks reflect this. 'Rapid graspers' get an opportunity in every lesson to build a portfolio of greater depth work, growing in complexity and connections through 'If you finish tasks'.

EYFS Curriculum Overview

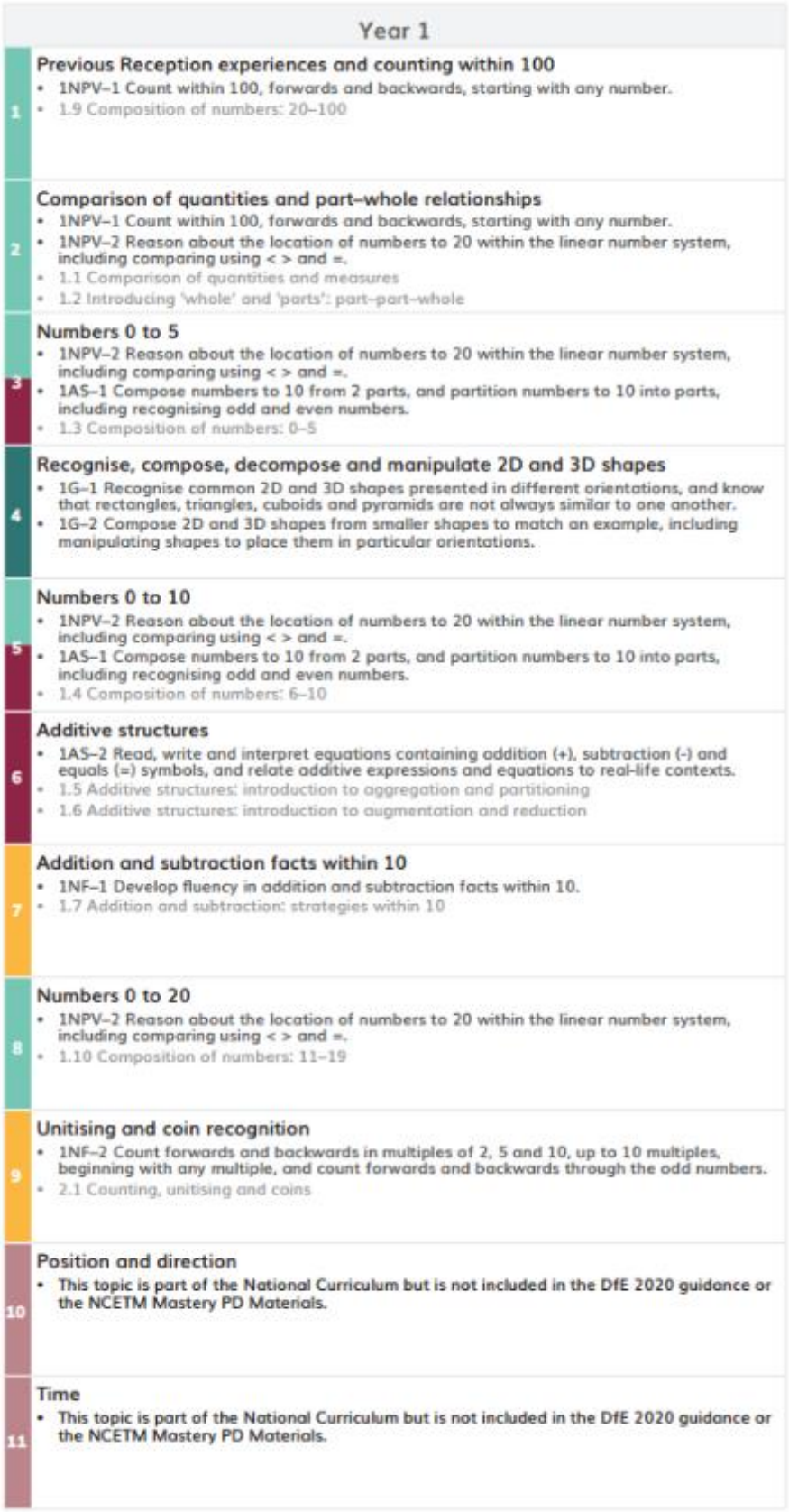
Mastering Number

Reception Overview

Term 1	Term 2	Term 3
Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison. **Pupils will:** • identify when a set can be subitised and when counting is needed • subitise different arrangements, both unstructured and structured, including using the Hungarian number frame • make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills • spot smaller numbers 'hiding' inside larger numbers	Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals. **Pupils will:** • continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals • begin to identify missing parts for numbers within 5 • explore the structure of the numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame • focus on equal and unequal groups when comparing numbers	Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice. **Pupils will:** • continue to develop their counting skills, counting larger sets as well as counting actions and sounds • explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame • compare quantities and numbers, including sets of objects which have different attributes • continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2

• connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers • hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number • develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds • compare sets of objects by matching • begin to develop the language of 'whole' when talking about objects which have parts	• understand that two equal groups can be called a 'double' and connect this to finger patterns • sort odd and even numbers according to their 'shape' • continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern • order numbers and play track games • join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers	• begin to generalise about 'one more than' and 'one less than' numbers within 10 • continue to identify when sets can be subitised and when counting is necessary • develop conceptual subitising skills including when using a rekenrek

Year 1 Maths Overview



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Year 2 Maths Overview

Year 2

1 Numbers 10 to 100
- 2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.
- 2NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.
- 1.8 Composition of numbers: multiples of 10 up to 100
- 1.9 Composition of numbers: 20–100

2 Calculations within 20
- 2AS–1 Add and subtract across 10.
- 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".
- 1.11 Addition and subtraction: bridging 10
- 1.12 Subtraction as difference

3 Fluently add and subtract within 10
- 2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice.
- 1.7 Addition and subtraction: strategies within 10

4 Addition and subtraction of two-digit numbers (1)
- 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.
- 1.13 Addition and subtraction: two-digit and single-digit numbers
- 1.14 Addition and subtraction: two-digit numbers and multiples of ten

5 Introduction to multiplication
- 2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.
- 2.2 Structures: multiplication representing equal groups
- 2.3 Times tables: groups of 2 and commutativity (part 1)
- 2.4 Times tables: groups of 10 and of 5, and factors of 0 and 1
- 2.5 Commutativity (part 2), doubling and halving

6 Introduction to division structures
- 2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).
- 2.6 Structures: quotitive and partitive division

7 Shape
- 2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.

8 Addition and subtraction of two-digit numbers (2)
- 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.
- 1.15 Addition: two-digit and two-digit numbers
- 1.16 Subtraction: two-digit and two-digit numbers

9 Money
- This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.

10 Fractions
- 3.0 Guidance on the teaching of fractions in Key Stage 1

11 Time
- This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.

12 Position and direction
- This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.

13 Multiplication and division – doubling, halving, quotitive and partitive division
- 2.5 Commutativity (part 2), doubling and halving
- 2.6 Structures: quotitive and partitive division

14 Sense of measure – capacity, volume, mass
- This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.

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

Dark grey references are ready-to-progress criteria from the DfE Guidance 2020

Light grey references are from the NCETM Primary Mastery Professional Development materials

Both are available online

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Year 3/4 Maths Overview

Y3/4 Year A 24-25	1	2	3	4	5	6	7	8	9	10	11	12	13
Term 1 and 2	**Y3 Unit 1** ** Adding and subtracting across 10		**Y3 Unit 2** ** Numbers to 1,000										Consolidation/ catch up week/ **Y4 Unit 3** Perimeter (condensed)
Term 3 and 4	**Y4 Unit 2** Numbers to 10,000					**Y3 Unit 5 and Y3 Unit 7 (same as Y4 Unit 1)** ** Column Addition ** Column Subtraction			**Y4 Unit 6** Understanding & Manipulating multiplicative relationships				
Term 5 and 6	**Y4 Unit 12** Division with remainders		**Y4 Unit 8** Review of fractions from KS1	**Y3 Unit 8** ** Unit fractions (condensed)	**Y3 Unit 9** ** Non-unit fractions (condensed)	**Y4 Unit 9** ** Fractions greater than 1 (slight condense)				**Y3 Unit 10** Parallel and perpendicular sides in polygons	**Y4 Unit 10** Symmetry in 2D shapes (condensed)		Consolidation/ catch up week/ **Y4 Unit 7** Coordinates (condensed)

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Y3/4 Year B 25-26	1	2	3	4	5	6	7	8	9	10	11	12	13
Term 1 and 2	**Y3 Unit 1** ** Adding and subtracting across 10		**Y3 Unit 2** ** Numbers to 1,000 (condensed)		**Y3 Unit 4** Manipulating the additive relationship and securing mental calculation				**Y3 Unit 5 and Y3 Unit 7 (same as Y4 Unit 1)** ** Column Addition ** Column Subtraction			**Y3 Unit 6** 2, 4, 8 times tables →	
Term 3 and 4	**Y3 Unit 6** → 2, 4, 8 times tables	**Y4 Unit 6** Understanding & Manipulating multiplicative relationships							**Y3 Unit 8** ** Unit fractions			**Y3 Unit 9** ** Non-unit fractions →	
Term 5 and 6	**Y3 Unit 9** ** → Non-unit fractions		**Y4 Unit 9** ** Fractions greater than 1 (condensed 'intro')		**Y4 Unit 12** Division with remainders		**Y3 Unit 3** Right angles		**Y4 Unit 3** Perimeter		**Y4 Unit 7** Coordinates		Consolidation/ catch up week

Year 5/6 Maths Overview

Y5/6 Year A 24-25	1	2	3	4	5	6	7	8	9	10	11	12	13
Term 1 and 2	**Y6 Unit 1** Calculating using knowledge of structures (1) (slight condense)				**Y6 Unit 2** Multiples of 1,000 (slight condense)	**Y6 Unit 3** Numbers up to 10,000,000 (condensed)		**Y5 Unit 1** **Decimal fractions (condensed)		**Y5 Unit 8** **Fractions (condensed)		**Y6 Unit 5 →** **Multiplication and division	
Ongoing		***Y6 Unit 12*** ***Order of operations (1 week of materials)*										***Y6 Unit 11 →*** ***Solving problems with two unknowns*	
Term 3 and 4	**→ Y6 Unit 5** **continued	**Y6 Unit 6** Area, perimeter, position and direction			**Y6 Unit 7** **Fractions and percentages					**Y6 Unit 8** Statistics		**Y6 Unit 9** Ratio and proportion	
Ongoing	***Y6 Unit 11*** ***continued (2 weeks of materials)*		***Y5 Unit 3*** ***Negative numbers (2 weeks of materials)*							***Y6 Unit 13*** ***Mean average (1 week of materials)*			
Term 5 and 6	Revision for KS2 SATs (including content from Year B and light touch converting units of measure (Y5 Unit 9) and angles (Y5 Unit 10))				SATs	**Y6 Unit 13** Mean average	**Y6 Unit 4** Draw, compose and decompose shapes (including circles)	**Y6 Unit 10** Calculating using knowledge of structures (2)		**Y6 Unit 11** Solving problems with two unknowns		**Y6 Unit 12** Order of operations	

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Y5/6 Year B 25-26	1	2	3	4	5	6	7	8	9	10	11	12	13
Term 1 and 2	**Y5 Unit 1** **Decimal fractions					**Y5 Unit 2** Money		**Y5 Unit 3** **Negative numbers		**Y5 Unit 4** Short multiplication and short division (slight condense)			
Ongoing		***Y6 Unit 12*** ***Order of operations (1 week of materials)*										***Y6 Unit 11 →*** ***Solving problems with two unknowns*	
Term 3 and 4	**Y6 Unit 5** **Multiplication and division (condensed)		**Y5 Unit 8** **Fractions (slight condense)					**Y6 Unit 7** **Fractions and percentages (condensed)	**Y5 Unit 6** Calculating with decimal fractions			**Y5 Unit 5** Area and scaling (condensed)	
Ongoing	***Y6 Unit 11*** ***continued (2 weeks of materials)*									***Y6 Unit 13*** ***Mean average (1 week of materials)*			
Term 5 and 6	Revision for KS2 SATs (including content from Year A and light touch converting units of measure (Y5 Unit 9) and angles (Y5 Unit 10))				SATs	**Y5 Unit 7** Factors, multiples and primes (slight condense)			**Y5 Unit 9** Converting units	**Y5 Unit 10** Angles			

Progression

Number – Number and Place Value

COUNTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
given a number, identify one more and one less		find 10 or 100 more or less than a given number	find 1000 more or less than a given number		
COMPARING NUMBERS					
use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use <, > and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1000 *compare numbers with the same number of decimal places up to two decimal places* (copied from Fractions)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS					
identify and represent numbers using objects	identify, represent and estimate numbers using	identify, represent and estimate numbers	identify, represent and estimate numbers		

and pictorial representations including the number line	different representations, including the number line	using different representations	using different representations		

READING AND WRITING NUMBERS (including Roman Numerals)					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1000 in numerals and in words	read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value)
		tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement)		read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
UNDERSTANDING PLACE VALUE					
	recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)

			find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)	*recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents* (copied from Fractions)	*identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places* (copied from Fractions)

ROUNDING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			round any number to the nearest 10, 100 or 1 000	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000	round any whole number to a required degree of accuracy
			round decimals with one decimal place to the nearest whole number (copied from Fractions)	*round decimals with two decimal places to the nearest whole number and to one decimal place* (copied from Fractions)	*solve problems which require answers to be rounded to specified degrees of accuracy* (copied from Fractions)
PROBLEM SOLVING					
	use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above

Number – Addition and Subtraction

NUMBER BONDS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100				
MENTAL CALCULATION					
add and subtract one-digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers	add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				use their knowledge of the order of operations to carry out calculations involving the four operations
WRITTEN METHODS					

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

	of mental and written methods				
	solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)				Solve problems involving addition, subtraction, multiplication and division

Number – Multiplication and Division

MULTIPLICATION & DIVISION FACTS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count in multiples of twos, fives and tens (copied from Number and Place Value)	*count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward* (copied from Number and Place Value)	*count from 0 in multiples of 4, 8, 50 and 100* (copied from Number and Place Value)	*count in multiples of 6, 7, 9, 25 and 1 000* (copied from Number and Place Value)	*count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000* (copied from Number and Place Value)	
	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12 × 12		

MENTAL CALCULATION					
		write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Written Methods)	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	multiply and divide numbers mentally drawing upon known facts	perform mental calculations, including with mixed operations and large numbers
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	*associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)* (copied from Fractions)

WRITTEN CALCULATION					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

		mental and progressing to formal written methods (appears also in Mental Methods)			
				divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
					use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))

PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			recognise and use factor pairs and commutativity in mental calculations (repeated)	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	identify common factors, common multiples and prime numbers
				know and use the vocabulary of prime	*use common factors to simplify fractions; use*

				numbers, prime factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19	*common multiples to express fractions in the same denomination* (copied from Fractions)
				recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	*calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3* (copied from Measures)

ORDER OF OPERATIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					use their knowledge of the order of operations to carry out calculations involving the four operations
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					

		estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)	*estimate and use inverse operations to check answers to a calculation* (copied from Addition and Subtraction)		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	solve problems involving addition, subtraction, multiplication and division
				solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	
				solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	*solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion)

Number – Fractions (including decimals and percentages)

COUNTING IN FRACTIONAL STEPS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)	count up and down in tenths	count up and down in hundredths		
RECOGNISING FRACTIONS					
recognise, find and name a half as one of two equal parts of an object, shape or quantity	recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	
		recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.			
recognise, find and name a quarter as one of four equal parts of an object, shape or quantity		recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
COMPARING FRACTIONS					
		compare and order unit fractions, and fractions		compare and order fractions whose denominators are all	compare and order fractions, including fractions >1

		with the same denominators		multiples of the same number	

COMPARING DECIMALS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places
ROUNDING INCLUDING DECIMALS					
			round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)					
	write simple fractions e.g. $^{1}/_{2}$ of 6 = 3 and recognise the equivalence of $^{2}/_{4}$ and $^{1}/_{2}$.	recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
			recognise and write decimal equivalents of any number of tenths or hundredths	read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)

			recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$	recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

ADDITION AND SUBTRACTION OF FRACTIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
MULTIPLICATION AND DIVISION OF FRACTIONS					
				multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times ^1/_2 = ^1/_8$)

					multiply one-digit numbers with up to two decimal places by whole numbers
					divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)
MULTIPLICATION AND DIVISION OF DECIMALS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					multiply one-digit numbers with up to two decimal places by whole numbers
			find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					associate a fraction with division and

					calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)
					use written division methods in cases where the answer has up to two decimal places
PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		solve problems that involve all of the above	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	solve problems involving numbers up to three decimal places	
			solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25.	

Ratio and Proportion

Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division					
					Year 6
					solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
					solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
					solve problems involving similar shapes where the scale factor is known or can be found
					solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Measurement

COMPARING AND ESTIMATING

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]	compare and order lengths, mass, volume/capacity and record the results using >, < and =		estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.
sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	compare and sequence intervals of time	compare durations of events, for example to calculate the time taken by particular events or tasks			
		estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms			

		of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)			
MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure and begin to record the following: * **lengths and heights** * **mass/weight** * **capacity and volume** * **time** (hours, minutes, seconds**)**	choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); **mass** (kg/g); **temperature** (°C); **capacity** (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml)	estimate, compare and calculate **different measures,** including **money in pounds and pence** (appears also in Comparing)	use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling.	solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate (appears also in Converting)
		measure the **perimeter** of simple 2-D shapes	measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres	measure and calculate the **perimeter** of composite rectilinear shapes in centimetres and metres	recognise that shapes with the same areas can have different **perimeters** and vice versa

MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

recognise and know the value of different denominations of **coins and notes**	recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular value find different combinations of coins that equal the same amounts of money **solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change	add and subtract amounts of **money** to give change, using both £ and p in practical contexts			
			find the area of rectilinear shapes by counting squares	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes *recognise and use square numbers and cube numbers, and the*	calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3].

				notation for squared (^{2}) and cubed (^{3}) (copied from Multiplication and Division)	recognise when it is possible to use formulae for area and volume of shapes
TELLING THE TIME					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)		
recognise and use language relating to dates, including days of the week, weeks, months and years	know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)			
			solve problems involving converting from hours to minutes; minutes to seconds;	solve problems involving converting between units of time	

			years to months; weeks to days (appears also in Converting)		

CONVERTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year	convert between different units of measure (e.g. kilometre to metre; hour to minute)	convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
			read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	solve problems involving converting between units of time	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)

			solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	convert between miles and kilometres

Geometry – Properties of Shape

IDENTIFYING SHAPES AND THIER PROPERTIES					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		identify lines of symmetry in 2-D shapes presented in different orientations	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)
	identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
	identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder				

	and a triangle on a pyramid]				
DRAWING AND CONSTRUCTING					
		draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees (^{o})	draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
COMPARING AND CLASSIFYING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons

ANGLES					
		recognise angles as a property of shape or a description of a turn		know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
		identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle	identify acute and obtuse angles and compare and order angles up to two right angles by size	identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
		identify horizontal and vertical lines and pairs of perpendicular and parallel lines			

Geometry – Position, Direction and Movement

POSITION, DIRECTION AND MOVEMENT					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
describe position, direction and movement, including	use mathematical vocabulary to describe position, direction and movement including		describe positions on a 2-D grid as coordinates in the first quadrant	identify, describe and represent the position of a shape following a reflection or	describe positions on the full coordinate grid (all four quadrants)

half, quarter and three-quarter turns.	movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		describe movements between positions as translations of a given unit to the left/right and up/down	translation, using the appropriate language, and know that the shape has not changed	draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
			plot specified points and draw sides to complete a given polygon		
PATTERN					
	order and arrange combinations of mathematical objects in patterns and sequences				

Statistics

INTERPRETING, CONSTRUCTING AND PRESENTING DATA					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	interpret and construct simple pictograms, tally charts, block diagrams and simple tables	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems
	ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity				

	ask and answer questions about totalling and comparing categorical data				
SOLVING PROBLEMS					
		solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	solve comparison, sum and difference problems using information presented in a line graph	calculate and interpret the mean as an average

Algebra

EQUATIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and ***missing number problems*** *such as* *7 = □ - 9* (copied from Addition and Subtraction)	*recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.* (copied from Addition and Subtraction)	solve problems, *including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction) *solve problems, including* ***missing number*** *problems, involving multiplication and division, including integer scaling* (copied from		*use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** (copied from Geometry: Properties of Shapes)	express missing number problems algebraically

		Multiplication and Division)			
	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)				find pairs of numbers that satisfy number sentences involving two unknowns
represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)					enumerate all possibilities of combinations of two variables

Impact and Assessment

Impact of small steps are assessed during and after each lesson using a variety of AfL techniques. This allows teachers and TAs to identify individual children who are in need to additional support/in the moment interventions to ensure they keep up with the mastery approach.

Teachers formally assess the knowledge gained through Maths lessons, 3 times a year. These are entered into our whole school tracking system, Arbor.

Teachers assess through practice quizzes, tables tests, end of unit assessments and full standardised tests (GL PTMs) twice yearly (February and June).

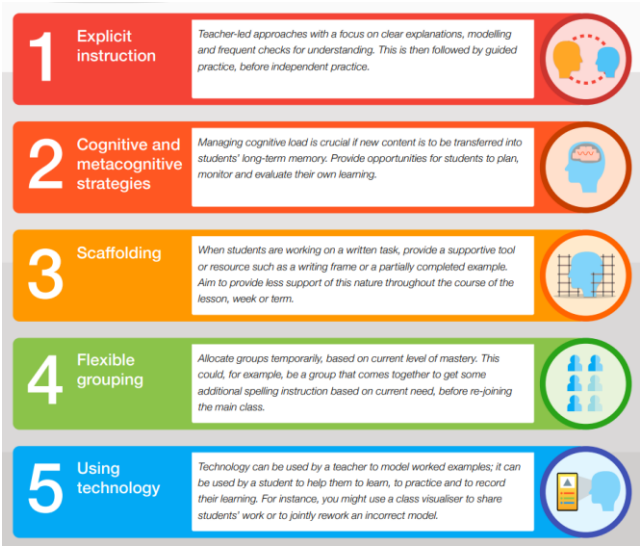
Children's progress and attainment is investigated by Senior Leaders and Trust staff at Pupil Progress Meetings.

Inclusion

At Spaxton we believe that **All** leaders are leaders of SEND, and as such is it our responsibility to ensure an inclusive approach to promote the wellbeing and academic progress of **all** our children in whole curriculum. By removing barriers to learning and supporting the growth of the whole child we are helping **all** to succeed.

In the Trust, we have adopted an evidence-based approach to supporting **all** of our children as we believe what is good for all can be vital for some.

We use the EEF 'Five a day' principles to support our repertoire of teaching strategies daily in response to individual needs.



These work in conjunction with the work we have been doing on Retrieval with Kate Jones and Rosenshine's Principles of instruction such as small step learning, modelled examples, independent practice.