Progression in Maths

Implementation:

- 1 Curriculum drivers (Spirituality, Equality, Opportunity, Aspiration and Community) shape our curriculum breadth in maths. They are derived from an exploration of the backgrounds of our students, our beliefs about high quality education and our values. They are used to ensure we give our students appropriate and ambitious curriculum opportunities.
- 2 Cultural capital gives our students the vital background knowledge required to be informed and thoughtful members of our community who understand and believe in British values.
- 3. Curriculum breadth is shaped by our <u>curriculum drivers</u>, <u>cultural capital</u>, <u>subject topics</u> and our ambition for students to study the best of what has been thought and said by many generations of academics and scholars.
- 4. Our curriculum distinguishes between subject topics and 'threshold concepts'. Subject topics are the specific aspects of subjects that are studied.
- 5. <u>Threshold concepts</u> tie together the subject topics into meaningful schema. The same concepts are explored in a wide breadth of topics. Through this 'forwards-and-backwards engineering' of the curriculum, students return to the same concepts over and over and gradually build understanding of them. In Maths, these threshold concepts are; **Counting, Learn its, It's nothing new and calculation (CLIC)**.
- 6. Cognitive science tell us that working memory is limited and that cognitive load is too high if students are rushed through content. This limits the acquisition of long-term memory. Cognitive science also tells us that in order for students to become creative thinkers, or have a greater depth of understanding they must first master the basics, which taken time.
- 7. **Progress Drives:** For each of the threshold concepts, each of which includes the procedural and Knowledge categories in each subject give students a way of expressing their understanding of the threshold concepts.
- 8 <u>Cognitive Domains</u>: Within each progress drive, students gradually progress in their procedural fluency and semantic strength through cognitive domains of: **repeat**, **revisit**, **real life**, **select**, **connect and challenge**. The goal for students is to display sustained mastery of understanding by the end of each progress drive and for the most able to have a greater depth of understanding.
- 9. Pedagogical Content Knowledge and Strategies: At St Georges we use the 'Big Maths' scheme- which is a systematic and structured approach to ensuring all children become numerate and then become fully rounded mathematicians. At the heart of this structure are the detailed sequences of learning through progress drives. Big Maths ensures every child has a solid foundation of Core Knowledge before they start to use and apply it to wider mathematical concepts such as shape, fractions etc. Recognising the evidence of 'Cognitive Load Theory', Big Maths helps to manage the load and maintain balance between working and long-term memory
- 10 Our curriculum design is based on evidence from cognitive science; three main principles underpin it:
 - Learning is most effective with spaced repetition.
 - Interleaving helps pupils to discriminate between topics and aids long-term retention.

- Retrieval of previously learned content is frequent and regular, which increases both storage and retrieval strength.
- 1 In addition to the three principles we also understand that learning is invisible in the short-term and that sustained mastery takes time.
- 12 Our content is subject specific. We make intra-curricular links to strengthen schema.
- 13. Continuous provision, in the form of daily routines, replaces the teaching of some aspects of the curriculum and, in other cases, provides retrieval practice for previously learned content.

EYFS PITA Statements	
Number	Numerical patterns
<u>Baseline:</u>	<u>Baseline:</u>
Uses some number names and number language spontaneously.	*Uses some number names and number language spontaneously.
Uses some number names accurately in play.	*Uses some number names accurately in play.
Recites numbers in order to 10.	*Recites numbers in order to 10.
Shows curiosity about numbers offering comments or asking questions.	*Shows curiosity about numbers offering comments or asking questions.
Compares two groups of objects (up to 4) saying when they are the same.	*Compares two groups of objects (up to 4) saying when they are the same.
Shows an interest in number problems.	*Shows an interest in number problems.
Shows an interest in numerals in the environment.	*Shows an interest in numerals in the environment.
Advent:	Advent:
Accurately counts objects/actions in different context to 5 (1-1 correspondence)	*Verbally count confidently to 10,
Laentity composition of numbers U-5.	*Recognises and re-orders numbers 0-5
Begin to subitise to 5. Identify game doubling facts to 2	*Selects the correct numeral to represent 1-5, then 1-10 objects
Lent.	*Begins to recognise the pattern of the counting system (0-9)
Begin to count objects/actions in different ways to 10 (1-1 correspondence)	*Compares quantities to 5 and beyond
Indetify composition of numbers 5-7 then 8-10	*Knowing what is more
Begin to subitise up to 5.	*Begins to use the vocabulary involved in adding and subtracting (more, add,
Finds some number bonds to 5.	altogether, take, away, less, less, than fewer)
Identify some subtraction facts of 5.	Lent:
Identify some doubling facts to 5.	*Verbally count beyond 10, then to 20.
Pentecost/ELG:	*Recognises and re-orders numbers 0-10.
Have deep understanding of number to 10, including the composition of each number.	*Selects the correct numeral to represent 1-10 objects.
Subitise up to 5.	*Begins to recognise the pattern of the counting system (11-19).
Automatically recall (without reference to rhymes or counting aids) number bonds to	*Compares quantities to 10 knowing what is less or more.
5 (including subtraction facts) and some number bonds to 10, including double facts.	*To use with increasing accuracy vocabulary involved in adding and subtracting
	(greater, less than, same, double, half, total, equals).

Pentecost/ELG:
*Verbally count beyond 20, recognising the pattern of the counting system.
*Compare quantities to 10 in different contexts, recognising when one quantity is
greater than, less than or the same as the other quantity.
*Explore and represent patterns within numbers to 10, including odds and evens,
double facts and how quantities can be distributed equally.

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Number - number and place value

Curriculum Statement	Big Maths Location
count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	CLIC: Counting: Saying Numbers: Step 5
count, read and write numbers to 100 in numerals, count in different multiples including ones, twos, fives and tens	CLIC: Counting: Reading Numbers: Step 4 CLIC: Counting: Count Fourways: Steps 1 - 3 CLIC: Counting Multiples: Steps 1 - 3
given a number, identify one more and one less	CLIC: Counting: Counting On: Step 1
identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	CLIC: Counting: Actual Counting: Step 4 CLIC: Counting: Count Fourways LBM: Amounts: Amounts Compared CLIC: Counting: CORE Numbers: Step 2
read and write numbers from 1 to 20 in digits and words	CLIC: Counting: Reading Numbers: Step 2

Number - addition and subtraction

Curriculum Statement	Big Maths Location
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	CLIC: Calculation: Addition: Steps 6, 7 CLIC: Calculation: Subtraction: Steps 6, 7
represent and use number bonds and related subtraction facts within 20	CLIC: Learn Its: Steps 1 - 6 CLIC: It's Nothing New: Fact Families: Step 1
add and subtract one-digit and two-digit numbers to 20, including zero	CLIC: Calculation: Addition: Steps 8 - 12 CLIC: Calculation: Subtraction: Steps 8 - 12
solve simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [] - 9	CLIC: Calculation: Addition: Steps 7, 8 CLIC: Calculation: Subtraction: Steps 7, 8 CLIC: It's Nothing New: Fact Families: Step 1

Number - multiplication and division

Curriculum Statement	Big Maths Location
solve one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	CLIC: Calculation: Multiplication: Steps 1 - 6 CLIC: Calculation: Division: Steps 1 - 11

Number - fractions

Curriculum Statement	Big Maths Location
recognise, find and name a half as one of two equal parts of an object, shape or quantity	 SAFE: Fractions: Fractions of a Whole: Step 2 SAFE: Fractions: Fractions of a Set: Steps 2, 3
recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	SAFE: Fractions: Fractions of a Whole: Step 4 SAFE: Fractions: Fractions of a Set: Step 5

Measurement

Curriculum Statement	Big Maths Location
 compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later] 	 SAFE: Amounts: Amounts of Distance: Steps 5, 6 SAFE: Amounts: Amounts of Mass: Steps 5, 6 SAFE: Amounts: Amounts of Space: Steps 5, 6 SAFE: Amounts: Amounts of Time: Step 11
 measure and begin to record the following: lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) 	 SAFE: Amounts: Amounts of Distance: Steps 5, 6 SAFE: Amounts: Amounts of Mass: Steps 5, 6 SAFE: Amounts: Amounts of Space: Steps 5, 6 SAFE: Amounts: Amounts of Time: Step 11

Curriculum Statement	Big Maths Location
recognise and know the value of different denominations of coins and notes	SAFE: Amounts: Amounts of Money: Step 5
sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow,	SAFE: Amounts: Amounts of Time: Step 10
recognise and use language relating to dates, including days of the week, weeks, months and years	SAFE: Amounts: Amounts of Time: Step 12
tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	SAFE: Amounts of Time: Telling the Time: Step 4

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
 recognise and name common 2-D and 3- D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	 SAFE: Shape: 2D Shape: Step 13 SAFE: Shape: 3D Shape: Step 10

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
describe position, direction and	SAFE: Shape: Position & Direction:
movement, including whole, half,	Step 9
quarter and three-quarter turns	SAFE: Amounts: Amounts of Turn: Step 3

number and place value

Curriculum Statement	Big Maths Location
count in steps of 2, 3, and 5 from 0, and	CLIC: Counting: Count Fourways
count in tens from any number, forward or backward	CLIC: Counting: Counting Multiples: Step 4
recognise the place value of each digit in a two-digit number (tens, ones)	CLIC: Counting: Squiggleworth: Step 1
identify, represent and estimate numbers using different representations, including the number line	CLIC: Counting: CORE Numbers: Step 3
compare and order numbers from 0 up to 100; use <, > and = signs	CLIC: Counting: CORE Numbers: Step 3
read and write numbers to at least 100 in numerals and in words	CLIC: Counting: Reading Numbers: Step 4
use place value and number facts to solve problems	CLIC: Calculation: Addition CLIC: Calculation: Subtraction

Number - addition and subtraction

Curriculum Statement	Big Maths Location
 solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods 	CLIC: Calculation: Addition CLIC: Calculation: Subtraction
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	CLIC: Learn Its: Steps 7 - 9 CLIC: It's Nothing New: Fact Families: Step 2 CLIC: It's Nothing New: Pim's Addition: Step 1
 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 	CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: Calculation: Addition: Step 20 CLIC: Calculation: Subtraction: Step 18 CLIC: Calculation: Addition: Step 23 CLIC: Calculation: Subtraction: Step 25 CLIC: Calculation: Addition: Step 24 CLIC: Calculation: Subtraction: Step 27
 adding three one-digit numbers 	CLIC: Calculation: Subtraction: Step 27 CLIC: Calculation: Addition: Step 19

Curriculum Statement	Big Maths Location
show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	CLIC: It's Nothing New: Fact Families: Step 2
recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	CLIC: It's Nothing New: Fact Families: Step 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
 recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers 	 CLIC: Learn Its: Steps 7 - 9 CLIC: Calculation: Division: Steps 16, 17 CLIC: Counting: Count Fourways
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs	CLIC: Calculation: Multiplication: Steps 7 - 9 CLIC: Calculation: Division: Step 13
recognise and use the inverse relationship between multiplication and division in calculations	CLIC: It's Nothing New: Fact Families: Step 4
show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	CLIC: It's Nothing New: Fact Families: Step 4
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	CLIC: Calculation: Division: Steps 12 - 15 CLIC: Calculation: Multiplication: Steps 7 - 9

Number - fractions

Curriculum Statement	Big Maths Location
recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity	SAFE: Fractions: Fractions of a Whole: Steps 6, 8 SAFE: Fractions: Fractions of a Set: Step 6
write simple fractions for example, $1/2$ of $6 = 3$ and recognise the equivalence of $2/4$ and $1/2$	SAFE: Fractions: Fractions of a Set: Step 6 SAFE: Fractions: Fractions: Learn Its: Step 3

Measurement

Curriculum Statement	Big Maths Location
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 	SAFE: Amounts: Amounts of Distance: Step 10 SAFE: Amounts: Amounts of Mass: Step 10 SAFE: Amounts: Amounts of Temperature: Step 7 SAFE: Amounts of Space: Step 10
 compare and order: lengths, mass, volume/capacity and record the results using >, < and = 	SAFE: Amounts: Amounts of Distance: Step 7 SAFE: Amounts: Amounts of Mass: Step 7 SAFE: Amounts: Amounts of Space: Step 7
recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	SAFE: Amounts: Amounts of Money: Step 10
find different combinations of coins that equal the same amounts of money	SAFE: Amounts: Amounts of Money: Step 8
solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	SAFE: Amounts: Amounts of Money: Step 12
compare and sequence intervals of time	SAFE: Amounts: Amounts of Time: Step 19
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	SAFE: Amounts: Amounts of Time: Telling the Time: Step 8
know the number of minutes in an hour and the number of hours in a day	SAFE: Amounts: Amounts of Time: Steps 14, 15

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	SAFE: Shape: 2D Shape: Step 17 SAFE: Shape: Explore & Draw: Step 10
identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	SAFE: Shape: 3D Shape: Step 16
identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	SAFE: Shape: 3D Shape: Step 13
compare and sort common 2-D and 3-D shapes and everyday objects	SAFE: Shape: 2D Shape: Step 17 SAFE: Shape: 3D Shape: Step 16

Geometry - position and direction

Curriculum Statement	Big Maths Location
order and arrange combinations of mathematical objects in patterns and sequences	Dangerous Maths: Pattern Spotting: Step 9
use mathematical vocabulary to describe position, direction and movement, including 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 anticlockwise)	SAFE: Shape: Position & Direction: Steps 9 - 11 SAFE: Amounts: Amounts of Turn: Step 6

Statistics

Curriculum Statement	Big Maths Location
interpret and construct simple pictograms, tally charts, block diagrams and simple tables	SAFE: Explaining Data: Diagrams & Tables: Steps 8 - 16
ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity	SAFE: Explaining Data: Diagrams & Tables: Steps 8 - 16
ask and answer questions about totalling and comparing categorical data	SAFE: Explaining Data: Bar Charts: Step 3

Year 3

Number - number and place value

Curriculum Statement	Big Maths Location
count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number	CLIC: Counting: Count Fourways CLIC: Counting: Counting Multiples: Steps 5, 6
recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	CLIC: Counting: Squiggleworth: Step 2
compare and order numbers up to 1000	CLIC: Counting: CORE Numbers: Step 4
identify, represent and estimate numbers using different representations	CLIC: Counting: CORE Numbers: Step 4
read and write numbers to at least 1000 in numerals and in words	CLIC: Counting: Reading Numbers: Steps 5, 6
solve number problems and practical problems involving these ideas	CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: Counting: Counting Along CLIC: It's Nothing New: The Pim Principle: Steps 2, 3

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds 	 CLIC: Calculation: Addition: Step 20 CLIC: Calculation: Subtraction: Step 19 CLIC: Calculation: Addition: Step 26 CLIC: Calculation: Subtraction: Step 29 CLIC: Calculation: Addition: Step 28 CLIC: Calculation: Subtraction: Step 29
add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction	Cool Moves: Column Methods: Addition: Step 5 Cool Moves: Column Methods: Subtraction: Step 5
estimate the answer to a calculation and use inverse operations to check answers	CLIC: Counting: Core Numbers CLIC: It's Nothing New: Fact Families
solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Real Life Maths CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: It's Nothing New: The Pim Principle: Steps 1 - 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	CLIC: Learn Its: Steps 10 - 12
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 efficient written methods	CLIC: It's Nothing New: Fact Families: Steps 1 - 3 CLIC: It's Nothing New: Smile Multiplication: Steps 1 - 3 CLIC: Calculation: Multiplication: Step 11 Cool Moves: Column Methods: Multiplication: Step 1
 solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects 	 Real Life Maths CLIC: It's Nothing New: Fact Families: Steps 4, 5 SAFE: Fractions: Ratio: Step 3 Dangerous Maths: Prove It!: Step 3

Number - fractions

Curriculum Statement	Big Maths Location
count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	SAFE: Fractions: Fractions: Counting: Steps 7, 8
recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	SAFE: Fractions: Fractions of a Set: Steps 9, 10
recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	SAFE: Fractions: Fractions: Calculation: Step 1
recognise and show, using diagrams, equivalent fractions with small denominators	SAFE: Fractions: Fractions of a Whole: Step 15
add and subtract fractions with the same denominator within one whole, for example, $5/7 + 1/7 = 6/7$	SAFE: Fractions: It's Nothing New: Step 4
compare and order unit fractions, and fractions with the same denominators	SAFE: Fractions: Fractions: Counting: Step 9
solve problems that involve all of the above	SAFE: Fractions

Measurement

Curriculum Statement	Big Maths Location
measure, compare, add and subtract: lengths (m/cm/mm); 	SAFE: Amounts: Amounts of Distance: Step 14
 mass (kg/g); volume/capacity (l/ml) 	 SAFE: Amounts: Amounts of Mass: Step 13 SAFE: Amounts: Amounts of Space: Step 13
measure the perimeter of simple 2-D shapes	SAFE: Amounts: Amounts of Distance: Step 18
add and subtract amounts of money to give change, using both £ and p in practical contexts	SAFE: Amounts: Amounts of Money: Step 13
tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	SAFE: Amounts: Amounts of Time: Telling the Time: Steps 12, 14
estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight	SAFE: Amounts: Amounts of Time: Telling the Time: Steps 11, 13
know the number of seconds in a minute and the number of days in each month, year and leap year	SAFE: Amounts: Amounts of Time: Steps 16, 22
compare durations of events [for example to calculate the time taken by particular events or tasks].	SAFE: Amounts: Amounts of Time: Step 21

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	SAFE: Shape: 3D Shape: Steps 17 - 19
recognise angles as a property of shape or a description of a turn	SAFE: Amounts: Amounts of Turn: Steps 4, 14
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	SAFE: Amounts: Amounts of Turn: Step 8

Year 3

Curriculum Statement	Big Maths Location
identify horizontal and vertical lines and	
pairs of perpendicular and parallel lines	SAFE: Shape: Explore & Draw: Steps 15 - 17

Statistics

Curriculum Statement	Big Maths Location
interpret and present data using bar charts, pictograms and tables	SAFE: Explaining Data: Bar Charts: Steps 5, 6 SAFE: Explaining Data: Diagrams & Tables: Steps 17 - 20
solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	SAFE: Explaining Data: Bar Charts: Steps 7 - 9 SAFE: Explaining Data: Diagrams & Tables: Steps 17 - 20

Year 4

Number - number and place value

Curriculum Statement	Big Maths Location
count in multiples of 6, 7, 9, 25 and 1000	CLIC: Counting: Count Fourways CLIC: Counting: Counting Multiples:
find 1000 more or less than a given number	CLIC: Counting: Count Fourways CLIC: Counting: CORE Numbers
count backwards through zero to include negative numbers	CLIC: Counting: Count Fourways
recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	CLIC: Counting: Squiggleworth: Step 2
order and compare numbers beyond 1000	CLIC: Counting: CORE Numbers: Step 5
identify, represent and estimate numbers using different representations	CLIC: Counting: CORE Numbers: Step 5
round any number to the nearest 10, 100 or 1000	CLIC: Counting: CORE Numbers: Step 5
solve number and practical problems that involve all of the above and with increasingly large positive numbers	CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: Counting: Counting Along
read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value	SAFE: Amounts: Amounts of Time: Telling the Time: Step 17

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate	Cool Moves: Column Methods: Addition: Step 8 Cool Moves: Column Methods: Subtraction: Step 8
estimate and use inverse operations to check answers to a calculation	CLIC: Counting: CORE Numbers CLIC: It's Nothing New: Fact Families
solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	CLIC: Calculation: Addition CLIC: Calculation: Subtraction

Number - multiplication and division

Curriculum Statement	Big Maths Location
recall multiplication and division facts for multiplication tables up to 12×12	CLIC: Learn Its: Steps 13 - 15
 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 	CLIC: Calculation: Multiplication CLIC: Calculation: Division Dangerous Maths: Prove It!: Step 4
recognise and use factor pairs and commutativity in mental calculations	CLIC: It's Nothing New: Pom's Words: Step 2
multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Cool Moves: Column Methods: Multiplication: Steps 2, 3
 solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which n objects are connected to m objects 	 CLIC: Calculation: Addition CLIC: Calculation: Multiplication CLIC: It's Nothing New: Coin Multiplication SAFE: Fractions: Ratio: Step 4 Big Maths Mastery

Number - fractions (including decimals)

Curriculum Statement	Big Maths Location
recognise and show, using diagrams, families of common equivalent fractions	SAFE: Fractions: Fractions of a Whole: Step 17
count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	SAFE: Fractions: Fractions: Counting: Step 15
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	SAFE: Fractions: Fractions: Calculation: Step 4 SAFE: Fractions: Fractions of a Set: Step 12
add and subtract fractions with the same denominator	SAFE: Fractions: Fractions: It's Nothing New: Step 5
recognise and write decimal equivalents of any number of tenths or hundredths	SAFE: Fractions: Fractions: Counting: Step 16
recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$	SAFE: Fractions: Fractions: Learn Its: Step 7

Curriculum Statement	Big Maths Location
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	CLIC: It's Nothing New: Dividing by 10: Step 2
round decimals with one decimal place to the nearest whole number	CLIC: Counting: CORE Numbers: Step 6 SAFE: Fractions: Fractions: Counting: Step 12
compare numbers with the same number of decimal places up to two decimal places	CLIC: Counting: Core Numbers: Step 7
solve simple measure and money problems involving fractions and decimals to two decimal places	Real Life Maths CLIC: It's Nothing New: The Pim Principle: Steps 1 - 3

Measurement

Curriculum Statement	Big Maths Location
Convert between different units of measure	SAFE: Amounts: Amounts of Distance: Step 22
[for example, kilometre to metre; hour to	SAFE: Amounts: Amounts of Mass: Step 16
minute]	SAFE: Amounts: Amounts of Space: Step 20
	SAFE: Amounts: Amounts of Time: Step 24
measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	SAFE: Amounts: Amounts of Distance: Step 20
find the area of rectilinear shapes by counting squares	SAFE: Amounts: Amounts of Space: Step 17
estimate, compare and calculate different measures, including money in pounds and pence	SAFE: Amounts
read, write and convert time between analogue and digital 12- and 24-hour clocks	SAFE: Amounts: Amounts of Time: Telling the Time: Step 16
solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	SAFE: Amounts: Amounts of Time: Step 24

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	SAFE: Shape: 2D Shape: Step 23
identify acute and obtuse angles and compare and order angles up to two right angles by size	SAFE: Amounts: Amounts of Turn: Step 15
identify lines of symmetry in 2-D shapes presented in different orientations	SAFE: Shape: Explore & Draw: Step 20
complete a simple symmetric figure with respect to a specific line of symmetry	SAFE: Explore & Draw: Step 21

Geometry – position and direction

Curriculum Statement	Big Maths Location
describe positions on a 2-D grid as coordinates in the first quadrant	SAFE: Shape: Position & Direction: Step 16
describe movements between positions as translations of a given unit to the left/right and up/down	SAFE: Shape: Position & Direction: Steps 23, 24
plot specified points and draw sides to complete a given polygon	SAFE: Shape: Position & Direction: Step 21

Statistics

Curriculum Statement	Big Maths Location
interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	SAFE: Explaining Data: Bar Charts: Steps 10, 11 SAFE: Explaining Data: Line Graphs: Step 3
solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	SAFE: Explaining Data: Bar Charts: Steps 10, 11 SAFE: Explaining Data: Diagrams & Tables: Steps 21 - 24

Year 5

Number - number and place value

Curriculum Statement	Big Maths Location
read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	CLIC: Counting: Reading Numbers: Steps 7 - 9 CLIC: Counting: CORE Numbers: Step 9
count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	CLIC: Counting: Count Fourways
interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero	CLIC: Counting: Count Fourways CLIC: Counting: Counting Along SAFE: Amounts: Amounts of Temperature: Step 14
round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	CLIC: Counting: CORE Numbers: Step 9
solve number problems and practical problems that involve all of the above	Real Life Maths CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: Counting: Counting Along CLIC: It's Nothing New: The Pim Principle: Steps 1 - 3
read Roman numerals to 1000 (M) and recognise years written in Roman numerals	SAFE: Amounts: Amounts of Time: Telling the Time: Step 18

Number - addition and subtraction

Curriculum Statement	Big Maths Location
add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction)	Cool Moves: Column Methods: Addition: Step 10 Cool Moves: Column Methods: Subtraction: Step 10
add and subtract numbers mentally with increasingly large numbers	CLIC: Calculation: Addition: Step 38 CLIC: Calculation: Subtraction: Step 36
use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	CLIC: Counting: CORE Numbers: Steps 8, 9
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Real Life Maths CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: It's Nothing New: The Pim Principle: Steps 1 - 3

Number - multiplication and division

Curriculum Statement	Big Maths Location
identify multiples and factors, including finding all factor pairs	CLIC: It's Nothing New: Pom's Words: Steps 1, 2
solve problems involving multiplication and	
division where larger numbers are used by	CLIC: It's Nothing New: Pom's Words:
decomposing them into their factors	Step 2
know and use the vocabulary of prime	
numbers, prime factors and composite (non-	CLIC: It's Nothing New: Pom's Words:
prime) numbers	Step 4
establish whether a number up to 100 is prime and recall prime numbers up to 19	CLIC: It's Nothing New: Pom's Words: Step 4
multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers	Cool Moves: Column Methods: Multiplication: Steps 4 - 7
multiply and divide numbers mentally drawing upon known facts	CLIC: Calculation: Multiplication: Step 15 CLIC: Calculation: Division: Steps 24 - 27
divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context	Cool Moves: Column Methods: Division: Step 7
multiply and divide whole numbers and	
those involving decimals by 10, 100 and	CLIC: It's Nothing New: Multiplying by 10
1000	CLIC: It's Nothing New: Dividing by 10
recognise and use square numbers and	
cube numbers, and the notation for squared	CLIC: It's Nothing New: Pom's Words:
(2) and cubed (3)	Step 3
solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	CLIC: Calculation
solve problems involving multiplication	Real Life Maths
and division, including scaling by simple	CLIC: Calculation: Multiplication
fractions and problems involving simple	CLIC: Calculation: Division
rates	SAFE: Fractions: Fractions: Ratio: Steps 5 - 7

Number - fractions (including decimals and percentages)

Curriculum Statement	Big Maths Location
compare and order fractions whose denominators are all multiples of the same	SAFE: Fractions: Fractions: Calculation:
number	
identify, name and write equivalent fractions	SAEE: Eractions: Eractions: Calculation:
of a given fraction, represented visually,	Sten 8
including tenths and hundredths	
recognise mixed numbers and improper fractions and convert from one form to the	
other and write mathematical statements > 1	SAFE: Fractions: Fractions: Calculation:
as a mixed number, for example, $2/5 + 4/5 = 6/5 = 1 1/5$	Steps 13, 14
add and subtract fractions with the same	
denominator and denominators that are	SAFE: Fractions: Fractions: Calculation:
multiples of the same number	
multiply proper fractions and mixed numbers by whole numbers, supported by materials	SAFE: Fractions: Fractions: Calculation:
and diagrams	Steps 15, 16
read and write decimal numbers as fractions, for example, 0.71 = 71/100	SAFE: Fractions: Fractions: Counting: Step 16
recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	SAFE: Fractions: Fractions: Counting: Step 19 CLIC: Counting: CORE Numbers: Step 8
round decimals with two decimal places to the nearest whole number and to one decimal place	CLIC: Counting: CORE Numbers: Step 7
read, write, order and compare numbers with up to three decimal places	CLIC: Counting: CORE Numbers: Step 8
solve problems involving number up to three decimal places	Real Life Maths CLIC: Calculation
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, and as a decimal	SAFE: Fractions: Fractions: Counting: Step 20 SAFE: Fractions: Percentage: Step 1
solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	SAFE: Fractions: Fractions: Calculation: Step 17 SAFE: Fractions: Fractions: Learn Its: Step 10 SAFE: Fractions: Percentages: Steps 2, 3

Measurement

Curriculum Statement	Big Maths Location
convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	SAFE: Amounts: Amounts of Distance: Step 27 SAFE: Amounts: Amounts of Mass: Step 17 SAFE: Amounts: Amounts of Space: Step 23
understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	SAFE: Amounts: Amounts of Distance: Step 28 SAFE: Amounts: Amounts of Mass: Step 18 SAFE: Amounts: Amounts of Space: Step 24
measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	SAFE: Amounts: Amounts of Distance: Step 25
calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm ₂) and square metres (m ₂) and estimate the area of irregular shapes	SAFE: Amounts: Amounts of Space: Step 22
estimate volume [for example, using 1 cm ₃ blocks to build cuboids (including cubes)] and capacity [for example, using water]	SAFE: Amounts: Amounts of Space: Step 25
solve problems involving converting between units of time	SAFE: Amounts: Amounts of Time: Step 31
use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	Real Life Maths

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
identify 3-D shapes, including cubes and	
other cuboids, from 2-D representations	SAFE: Shape: 3D Shape: Step 23
know angles are measured in degrees:	
estimate and compare acute, obtuse and	SAFE: Amounts: Amounts of Turn:
reflex angles	Steps 18, 22
draw given angles, and measure them in	SAFE: Amounts: Amounts of Turn:
degrees (^o)	Steps 23 - 29

Curriculum Statement	Big Maths Location
identify:	
 angles at a point and one whole turn (total 360₀) 	
 angles at a point on a straight line and 1/2 a turn (total 180₀) 	SAFE: Amounts: Amounts of Turn: Step 21
 other multiples of 90. 	
use the properties of rectangles to deduce	
related facts and find missing lengths and	SAFE: Shape: 2D Shape: Step 24
angles	SAFE: Amounts: Amounts of Turn: Step 30
distinguish between regular and irregular	
polygons based on reasoning about equal	SAFE: Shape: 2D Shape: Step 24
sides and angles	

Geometry - position and direction

Curriculum Statement	Big Maths Location
identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	SAFE: Shape: Position & Direction: Step 29

Statistics

Curriculum Statement	Big Maths Location
solve comparison, sum and difference problems using information presented in a line graph	SAFE: Explaining Data: Line Graphs: Step 6
complete, read and interpret information in tables, including timetables	SAFE: Explaining Data: Diagrams & Tables: Step 25

Year 6

Number - number and place value

Curriculum Statement	Big Maths Location
read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	CLIC: Counting: Reading Numbers: Step 10 CLIC: Counting: CORE Numbers: Step 9
round any whole number to a required degree of accuracy	CLIC: Counting: CORE Numbers: Step 9
use negative numbers in context, and calculate intervals across zero	CLIC: Counting: Counting Along: Step 7
solve number problems and practical problems that involve all of the above	CLIC: Calculation: Addition CLIC: Calculation: Subtraction CLIC: Counting: Counting Along Real Life Maths

Number - addition, subtraction, multiplication & division

Curriculum Statement	Big Maths Location
multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication	Cool Moves: Column Methods: Multiplication: Step 7
divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	Cool Moves: Column Methods: Division: Step 9
perform mental calculations, including with mixed operations and large numbers	CLIC: Calculation: Addition CLIC: Calculation: Subtraction
identify common factors, common multiples and prime numbers	CLIC: It's Nothing New: Pom's Words: Steps 1 - 4
use their knowledge of the order of operations to carry out calculations involving the four operations	Dangerous Maths: Algebra: Step 18
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	CLIC: Calculation: Addition CLIC: Calculation: Subtraction Cool Moves: Column Methods: Addition Cool Moves: Column Methods: Subtraction

Curriculum Statement	Big Maths Location
solve problems involving addition, subtraction, multiplication and division	CLIC: Calculation: Addition CLIC: Calculation: Subtraction Real Life Maths
use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy	CLIC: Counting: CORE Numbers

Number - fractions (including decimals and percentages)

Curriculum Statement	Big Maths Location
use common factors to simplify fractions; use common multiples to express fractions in the same denomination	SAFE: Fractions: Fractions: Calculation: Steps 18, 19
compare and order fractions, including fractions > 1	SAFE: Fractions: Fractions: Calculation: Step 21
add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	SAFE: Fractions: Fractions: Calculation: Step 22
multiply simple pairs of proper fractions, writing the answer in its simplest form, for example, $1/4 \times 1/2 = 1/8$	SAFE: Fractions: Fractions: Calculation: Step 20
divide proper fractions by whole numbers, for example, $1/3 \div 2 = 1/6$	SAFE: Fractions: Fractions: Calculation: Step 23
identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	CLIC: Counting: Squiggleworth: Step 5 CLIC: Counting: CORE Numbers: Step 8
multiply one-digit numbers with up to two decimal places by whole numbers	CLIC: Calculation: Multiplication: Step 18
use written division methods in cases where the answer has up to two decimal places	Cool Moves: Column Methods: Division: Step 10
solve problems which require answers to be rounded to specified degrees of accuracy	CLIC: Counting: CORE Numbers: Steps 6 - 10
recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	SAFE: Fractions: Fractions: Calculation: Step 17

Ratio and proportion

Curriculum Statement	Big Maths Location
solve problems involving the relative sizes of two quantities where missing values can SAFI be found by using integer multiplication and division facts	E: Fractions: Ratio: Step 8
solve problems involving the calculation of percentages [for example, of measures, SAFE and such as 15% of 360] and the use of percentages for comparison	: Fractions: Percentages: Step 6
solve problems involving similar shapes where the scale factor is known or can be SA found	FE: Fractions: Ratio: Step 9
solve problems involving unequal sharing and grouping using knowledge of fractions S and multiples	AFE: Fractions: Ratio: Step 8

Algebra

Curriculum Statement	Big Maths Location
use simple formulae	SAFE: Amounts: Amounts of Space: Steps 31, 32
generate and describe linear number sequences	Dangerous Maths: Pattern Spotting: Step 19
express missing number problems algebraically	Dangerous Maths: Algebra: Step 17
find pairs of numbers that satisfy an equation with two unknowns	Dangerous Maths: Algebra: Step 20
enumerate possibilities of combinations of two variables	Dangerous Maths: Algebra: Step 21

Measurement

Curriculum Statement	Big Maths Location
solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	SAFE: Amounts: Amounts of Distance: Step 29 SAFE: Amounts: Amounts of Mass: Step 19 SAFE: Amounts: Amounts of Space: Step 27

Curriculum Statement	Big Maths Location
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	SAFE: Amounts: Amounts of Distance: Step 29 SAFE: Amounts: Amounts of Mass: Step 19 SAFE: Amounts: Amounts of Space: Step 27 SAFE: Amounts: Amounts of Time: Step 31
convert between miles and kilometres	SAFE: Amounts: Amounts of Distance: Step 28 SAFE: Explaining Data: Line Graphs: Step 7 SAFE: Fractions: Ratio: Step 12
recognise that shapes with the same areas can have different perimeters and vice versa	SAFE: Amounts: Amounts of Space: Step 29
recognise when it is possible to use formulae for area and volume of shapes	SAFE: Amounts: Amounts of Space: Steps 30, 31
calculate the area of parallelograms and triangles	SAFE: Amounts: Amounts of Space: Steps 30, 31
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 [for example, mm ₃ and km ₃].	SAFE: Amounts: Amounts of Space: Step 28

Geometry - properties of shapes

Curriculum Statement	Big Maths Location
draw 2-D shapes using given dimensions and angles	SAFE: Shape: Explore & Draw: Step 28
recognise, describe and build simple 3-D shapes, including making nets	SAFE: Shape: 3D Shape: Step 26
compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	SAFE: Shape: 2D Shape: Step 27 SAFE: Shape: 3D Shape: Step 27
illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	SAFE: Amounts: Amounts of Distance: Steps 30, 31, 32
recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	SAFE: Amounts: Amounts of Turn: Step 34

Geometry – position and direction

Curriculum Statement	Big Maths Location
describe positions on the full coordinate grid (all four quadrants)	SAFE: Shape: Position & Direction: Step 31
draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	SAFE: Shape: Position & Direction: Steps 33, 34

Statistics

Curriculum Statement	Big Maths Location	
interpret and construct pie charts and line	SAFE: Explaining Data: Pie Charts: Steps 9, 10, 11	
graphs and use these to solve problems	SAFE: Explaining Data: Line Graphs: Step 8	
calculate and interpret the mean as an average	SAFE: Explaining Data: Averages: Step 6	

Progression in Reasoning



- Step one: Describing: simply tells what they did.
- Step two: Explaining: offers some reasons for what they did. These may or may not be correct. The argument may yet not hang together coherently. This is the beginning of inductive reasoning.
- Step three: Proving: a watertight argument that is mathematically sound, often based on generalisations and underlying structure. This is also called deductive reasoning.
- Step four: Convincing: confident that their chain of reasoning is right and may use words such as, 'I reckon' or 'without doubt'. The underlying mathematical argument may or may not be accurate yet is likely to have more coherence and completeness than the explaining stage. This is called inductive reasoning.
- Step five: Justifying: a correct logical argument that has a complete chain of reasoning to it and uses words such as 'because', 'therefore', 'and so', 'that leads to'

Progression in Questioning









Dragon	<u>KS1</u>	K52
	How can you find the answer the fastest?	Is there a more efficient method?
STAR	Can you group these in some way?	Can you write it another way?
Use it!	Where can this number go?	What would be the best equipment to use to support us?
EYFS	Which manipulatives could we use to help us?	Use your knowledge of to?
Can they follow the number sequence?	What comes next?	When would we use this method?
Show me what is next	What have we been working on	
Show me which is more/	that might	Is there a way to record what
less?.	help with this problem?	you've
What could you use to show		found that might help us see
me this number? (drawing and	What Maths skills do you have	more
manipulatives)	that will help you solve this	patterns?
	problem?	
	Both of these shapes have the	Summarise how you solved the
En all	same sides/corners etc. True or False?	problem?
Explain it!	What is the first step you take	Do you agree or disagree, why?
	to?	Are there any other methods you could use to find the anguar2
EYFS	that answer?	
What is the mistake?		How could you use this answer
What is hidden beneath the splat?	Do you agree or disagree, why?	TO WORK OUT?
What do you see?	Can you draw it?	What multiplication facts have
Tell me a story?	What can you see?	you used to help you calculate 2400/6
	Can you see any patterns?	Would you be able to use the
	What is the same and what is	same
	different?	method to solve a different problem?
	How did you group these?	
	What's the same? What's different?	
	Can you group these in some	
	way?	
	Can you see a pattern?	
	What do you notice?	
	How do you know that is the	
	missing number	

	What have you found out?	What have you discovered?
	What can we use to help us find	Can you group these in some
	the answer?	way?
SRUGG	How do you know the answer is	How can you use this equipment
Prove it!	correct?	to check this answer?
	How can you show me the	What do you know about
XE	answer is correct?	counting that can help you with
	Can you show me how you got	proving this answer is correct?
	that answer?	How can this pattern help you
	Can you show me if it is true or	find an answer?
	false?	
		What have you discovered?
		How did you find that out?
		Why do you think that?
		What made you decide to do it
		that way?
		inar way:
	Spot the mistake	What made you decide to do
N	I think this is false/True	that?
Add I want	because	Why did you do it like that?
		Why have we got two different
- Elina	Tell me what is wrong with	answers? Who is correct?
Convince me!	Ts it ever false that 2 (always	Have we found all the
	true that	possibilities?
		Who has a different solution?
	Are everybody's answers the	Are everybody's results the
	same? Why/	same? Why/
	why not?	why not?
	,	
	Do you agree or disagree?	Do you agree or disagree, why?
	Heavily scaffolded	Why did you use that method?
		Can you explain this in a
JELLE .	Is there a quicker way?	different way?
Evaluate it!	How do you know you have	How would the method change
	found the only answer?	if?
2		How many more solutions can
	Is there more than one answer?	you find?
		What would happen if we
	How do we know we have found	change?
	out all the possible answers?	Can you find a different way to
		reach your answer?
		Could you choose a different
		method to solve this question?
		Do you think we have found the
		best solution?

St George's approach to Mathematical Problem solving.

Our approach is based on a number of recommendations made in the guidance report published by the EEF.



So at St Georges we have come up with an approach based on the 7 step model for teaching metacognition strategies below:



2. Share

simple numbers and discuss understanding of problem.

- 3. Share Worked example.
- 4. Model by thinking out loud- use visual aids and manipulatives to support.
- 5. Introduce a similar problem but a different context to complete independently but with support and scaffolds and extensions for those rapid graspers.
- 6. Check understanding and reflect- explain and evaluate.



An example of exploring and understanding the problem.

An example of materials used in the 6 step approach.





