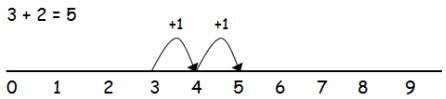
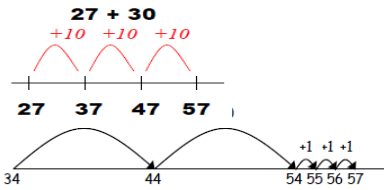
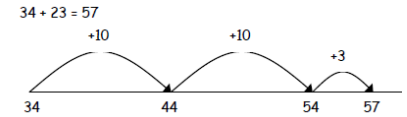
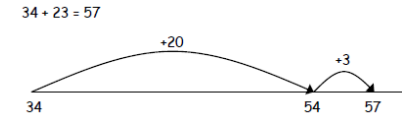
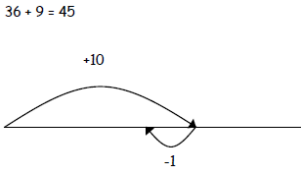
Addition

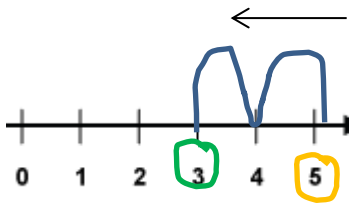
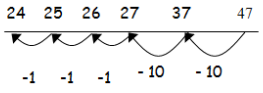
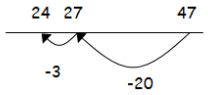
Year Group	Previous Steps.	Aimed teaching strategy for year group.	Examples of what this looks like.	Next steps.
Foundation 1 & 2	Songs and games involving numbers.	Counting set of objects.	Practical games involving counting.	Relating written numbers to amounts of objects. Combining 2 sets of objects into one group and counting practically. Use + and = sign in number sentences.
Year 1	Relating written numbers to amounts of objects. Informal jottings, then counting how many altogether.	Combining 2 sets of objects into one group and counting practically. Use + and = sign in number sentences. Counting on using a number line in ones. Counting on using metal addition strategies.	For 6+2 children may get 6 cubes, then 2 more and count how many altogether. 	Counting on in tens. Partitioning numbers into tens and ones. Addition can be in any order.
Year 2	Counting using groups of objects. Counting on using a number line with	Steps in addition can be recorded on an empty number line. ➢ Counting on in tens.		Use increasingly large numbers to practise this method.

	numbers in ones.	➢ Counting on in tens and ones. **Children must be confident with partitioning numbers into tens and ones.** ➢ Support children to become more efficient by adding the units in one jump, followed by adding the tens in one jump. Adding ten and then compensating when adding 9, 11, 19, 21 etc. Use partitioning to add numbers. Children must add the ones first, then the tens. Introduce column addition at this stage without carrying.	   24 +11 5 (4+1) 30 (20+10) 35	Use column method to complete addition with numbers up to hundreds.

Year 3	Use number lines to record addition. Partition number into tens and ones. Show steps to adding using column method, adding ones first.	Add two digit numbers using column addition. **(Without carrying)** Add two digit number using column addition introducing carrying once children are fully proficient with adding without carrying.	28 +41 69 24 +48 12 60 72 24 +48 72 1	Use hundreds, tens and ones to add using this method.
Year 4	Add two digit numbers without carrying. Add using the column method carry onto the next column.	Add two and three digit numbers using the column method. Children should begin by carrying ten from the ones. Add three and four digit numbers using the column method. Children should now carry from the ones and the tens.	235 +347 582 1 573 +349 922 11	Carry numbers with four digits. Carry from the ones, tens and hundreds.

Year 5	Adding using the column method without carrying. Add using the column method with two and three digit numbers.	Add up to 5 digit numbers using carrying in the column method. Introduce addition using decimals once children are proficient with previous steps. Children will need to look at place value for decimal numbers.	16458 +25783 42241 1111 23.5 +49.7 73.2 1	Add numbers with three, four and five digits using decimals. Explore and understand negative numbers.

Subtraction

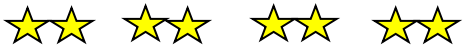
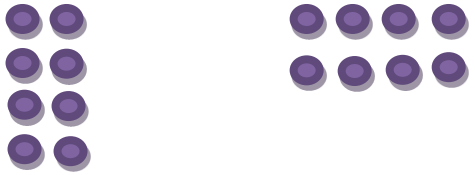
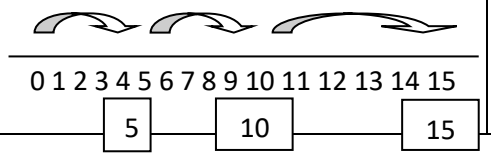
Year Group	Previous Steps.	Aimed teaching strategy for year group.	Examples of what this looks like.	Next steps.
Foundation 1&2	Songs and games involving number.	Practically getting a group of objects and taking some away.		Relating this act of taking away to a number sentence.
Year 1	Practically using groups of objects and taking them away.	Using practical objects and taking them away. Begin to relate this to number sentences. Use a number line to count back.	Subtraction as take away:  5-2=3 Subtraction on a number line: 5-2=3 	Use larger numbers using this method.
Year 2	Use practical objects for subtraction as visual stimulus. Counting back in ones using a number line.	Children to begin to use an empty number line to count back in tens and ones by partitioning. As children become more efficient, subtracting the ones and the tens can be done in one jump.	47 - 23 = 24  47 - 23 = 24 	Using partitioning children will move on to start using the column method.

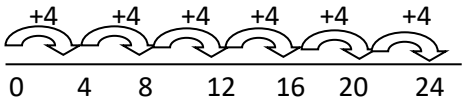
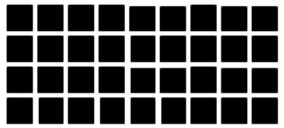
Year 3	Partitioning with tens and ones –use a number line.	Beginning of teaching column method. This needs to be taught with plenty of practical opportunities using dienes blocks and place value cards. Partition numbers with the largest above the smallest. Once this concept has been understood move onto the column method.	63 – 31 = 60 + 3 – 30 + 1 30 + 2 = 32 63 – 31 = 63 – 31 32	Use hundreds, tens and ones using the methods shown.
Year 4	Subtraction on a number line. Subtraction using partitioning of tens and ones. (Year 3)	Subtraction using decomposition. (This should only be taught to children who are confident with the column method in the previous step.)	71 – 46 = 70 + 1 – 40 + 6 Children will spot that you cannot subtract 6 from 1. This is how children will move onto: 60 1 ~~70~~ + 1 – 40 + 6 20 + 5 = 25 → 6 ~~7~~ 1 – 46 25	Partitioning and decomposition using more challenging numbers. (Th, H, T, U)

		Partitioning and decomposition using hundred, tens and units.	654 - 86 600 + 50 + 4 — 80 + 6 (Tens regrouping for units) 600 + 40 + 14 — 80 + 6 (Hundreds regrouping for tens) 500 + 140 + 14 — 80 + 6 500 + 60 + 8 = 568 Once this is understood this method should be record like this: 5141 ~~654~~ — 86 568	

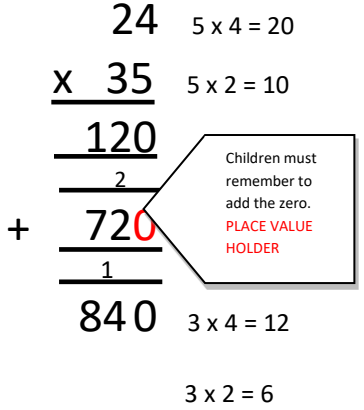
Year 5	Subtraction without decomposition. Subtraction with simple decomposition.	Subtraction using decomposition using thousan3ds, hundreds, tens and units. (Children should not need to partition numbers at this stage.) Subtraction using decomposition with zero. Subtraction using decimals with decomposition.	$\begin{array}{r} 1^{3}\not{8}46 \\ -\ 328 \\ \hline 1518 \end{array}$ $\begin{array}{r} 3005 \\ -\ 1397 \\ \hline 1608 \end{array}$ $\begin{array}{r} {}^{1}\not{1}3.58 \\ -\ 8.53 \\ \hline 5.05 \end{array}$	Increase difficulty by used zero and larger decimal numbers.

Multiplication

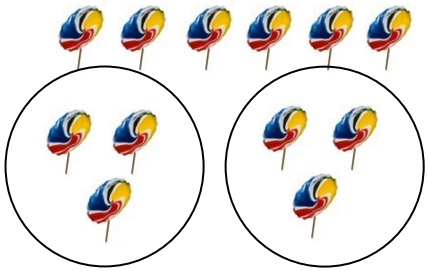
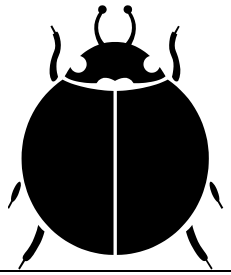
Year Group	Previous Steps.	Aimed teaching strategy for year group.	Examples of what this looks like.	Next steps.
Year 1		Counting groups of 2, 5 and 10 using practical objects and games. Become confident counting in 2's, 5's and 10's.		Recording groups of objects, relating this to written multiplication.
Year 2	Counting in practical objects in groups of 2, 5 and 10.	Children should learn 2,3,4,5 and 10 times table. Grouping objects and relating this to written multiplication. Use arrays to teach inverse. Repeated addition Children should be taught that 5 times 3 is 5 + 5 + 5 which is the same as 5x3. Repeated addition can be shown on a number line.	4x2 = 8  4x2=8 OR 2x4=8  5x3= 5+5+5 	Use repeated addition with an empty number line.

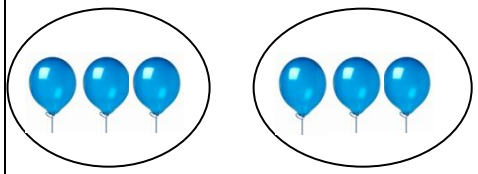
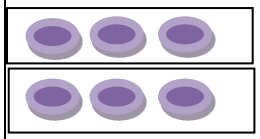
Year 3	Practical activities counting equal groups. Simple arrays.	Children should learn the 2,3,4,5,9 and 10 times table. Children will continue to use repeated addition and arrays until their understanding is secure. As children become more confident they can use an empty number line. Children need to model a multiplication calculation using arrays. This will support children's understanding of the grid method. Short Multiplication Chn need to begin to arrange multiplication problems in column method.	6 times 4 is 4 + 4 + 4 + 4 + 4 + 4 = 24 or 6x4 = 24   4 x 9 = 36 9 x 4 = 36 6 x 6 12	***Teachers should aim to teach chn short multiplication using 1 and 2 digit numbers by the end of year 3.***

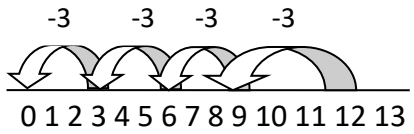
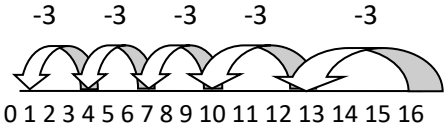
Year 4	Arrays and 1 digit x 1 digit multiplication.	Children should be able to derive and recall all times tables up to 12x12. Children need to build their confidence with simple one digit x one digit problems. Short multiplication: Short multiplication involves the skills of column addition. Children must be confident with carrying before moving onto this step.	90 32 x 3 96 3 x 2 = 6 3 x 30 = 90 26 x 6 156 6 x 6 = 36 6 x 20 = 120 + 3 = 156 3	Move on to long multiplication methods.

Year 5	Short multiplication.	Children should be able to **confidently** derive and recall all times tables up to 10x10. All children moving on to long multiplication must be confident with short multiplication. Long multiplication: Long multiplication involves all skills learnt so far. Children will need to be confident with their times tables and lay out their work clearly to show columns.		Multiplication using three digit numbers.

Division

Year Group	Previous Steps.	Aimed teaching strategy for year group.	Examples of what this looks like.	Next steps.
Year 1	Practical problems where children need to share items so it is fair.	Practical problems that involve sharing into equal groups. Relate halving to dividing by 2.	 What is half of 4? 	Problem solving tasks involving division.

Year 2	Practical problems where children share into equal groups.	Children will continue to build upon knowledge relating halving to dividing by 2. All children must continue to engage in practical activities involving dividing objects into equal groups. Children can also use arrays to show items being divided into equal groups. Children need to be able to derive and recall division facts using the 2, 3, 4, 5 and 10 times table by the end of this year.	Jade and Sam have 6 balloons. How many balloons can they each have?   Children will move on to record this a: 6 ÷ 2 = 3	Use repeated subtraction on a number line.
Year 3	Use practical problems to share items into equal groups. Use arrays and jottings	Children need to continue to engage in practical activities to reinforce understanding of division. Children must learn to derive and recall division facts using the 2,3,4,5,9 and 10 times table.		Using short division.

	to facts to division facts.	Repeated subtraction: Children should begin to use repeated subtraction on number line without remainders. Once children have a secure understanding of this, remainders can be used. Children can be moved on by using an empty number line.	12÷3= 4  16÷3= 5r1  	
Year 4	Practical problems to support understanding of division. Repeated subtraction.	Children need to continue to engage in practical activities to reinforce understanding of division. Children must learn to derive and recall division facts using all times table up to 12x12. Children must be confident with practical methods of division, repeated subtraction and be able to recall division facts before moving on. Short division: To begin with number that divide equally with <u>no</u> remainder.	69 ÷ 3 = 23 $3\overline{)69}$ = 23 60÷3=20 9÷3=3 98 ÷ 3 = $3\overline{)98}$ = 32 r 2 90÷3=30 8÷3=2r2	Using remainders within division.

		Once children are confident with this, allow children to use remainders. Reinforce to children that remainders are not decimal places. E.g. 98÷3 = 32r2 is not 32.2		
Year 5	Simple short division.	Only once children are confident with simple short division, children can move on to carrying.	75 ÷ 3 = 25 $3\overline{)7^{1}5}$ 25 70÷3=20 15÷3=5 585 ÷ 11 = 53 $11\overline{)58_{3}3}$ 53	Divide 4 digit numbers by 2 digit numbers. Convert remainders into decimals.
Year 6	Converting remainders into decimals. Formal Method of dividing by 2 digits. (Long division)	Once children are confident with simple short division with remainders children to follow method for showing remainder as decimals.	765÷4= 193.5 $4\overline{)7_{3}6\,5.{}_{2}0}$ 191.5	Formal metod of dividing with decimal remainders.

		Formal method of long division with 2 digits. Start with the short division method, each time subtract the answer below to leave the remainder then drop down the next digit. Keep doing this till you are left with 0