Numicon – Sequence of Teaching and Fluency Expectations of Basic Facts

Addition and subtraction facts to 10 - Numicon 1
Commutative Rule: e.g. 2 + 3 = 3 + 2
+ 0
+ 1 (Connect that add +1 = 1 more than, = the next number etc.)
Addition to and with 5: *1+4*, *2+3, 5+1, 5+2, 5+3, 5+4*
Groupings within 10:   *1+9, 2+8, 3+7, 4+6, 5+5*
Doubles to 10:   *1+1, 2+2, 3+3, 4+4, 5+5*
Remaining facts to 10: *2+4, 2+6, 2+7, 3+4, 3+6*
Knowing when to add and subtract to solve problems
Adjusting known facts to find facts for 11 and 12: **9 + 1 = 10, so 9 + 2 = 11**
Teen Numbers: *10+1, 10+2, 10+3, 10+4, 10+5, 10+6, 10+7,*
                     10+8, 10+9

Fluency in facts to 10 – Numicon 2

Addition and subtraction facts to 20 –Numicon 2, Fluency in Numicon 3
+ 1 and – 1, + 10 – 10: **3 + 1, 30 + 10, 3 – 1, 30 - 10**
Doubles to 20:   *6+6, 7+7, 8+8, 9+9, 10+10*
Near Doubles*:   5+6, 6+7, 6+8, 7+8,*
Partitioning 2-digit numbers for adding and subtracting: **35 + 2 = 30 + 5 + 2 35 - 2 = 30 + 5 – 2**
Rounding 2-digit numbers using - and + to nearest multiple: **38 + 2 = 40 43 – 3 = 40**
+ 9 (add 10 & subtract 1): *2+9, 3+9, 4+9, 5+9, 6+9, 7+9, 8+9* **Numicon 3**
Remaining Facts :   *3+8, 4+7, 4+8, 5+7, 5+8,*
Bridging through multiples of 10 when adding and subtracting:
Using knowledge facts within 20 fluently and use efficient strategies to calculate those not known.

Addition and subtraction facts to 30 –Numicon 3, Fluency in Numicon 4
Using known addition and subtraction facts to derive facts up to 30: 28 = 20 + 8, 10 + 10 = 10
Use of the empty box as an unknown and using the inverse to solve the problem 3 + ( ) = 7
Use of strategies and written notation to solve problems mentally and/or written down.

Addition and subtraction facts to 30 –Numicon 5, Fluency in Numicon 6
Solve adding and subtracting problems involving fractions and decimals efficiently, including money.
Calculating with integers
Using efficient column and other methods to solve problems

x2, x5, x10 – Numicon 2, Fluency Numicon 3
Commutative Rule: **5 x 4 = 4 x 5**
x 0
x 1
x 10 and ÷10:   **'y means ten', e.g. sixty means six tens. Multiples of 10**
x 2 and ÷ 2: **Doubling and halving relationship**
x 5 : **Relationship between x10 and x5**
Explore patterns **i.e. an odd multiplier results in the answer ending in a 5, an even multiplier ends in 0**
Recall of facts from 2x, 3x, 5x, 10x tables
Division problems do not use the commutativity rule to solve problems
Knowing when to multiply and divide to solve problems

x4, x6, x7, x8, x 9, x 11, x 12 – Numicon 3 and 4, Fluency Numicon 5
x 9 : **Patterns of nine and within 9. First digit of the answer is 1 less than multiplier, and sum of digits total 9.**
Solving problems with 9, knowing the nearest 10 rule. Multiply by 10 then subtract one group.
Squares: *2x2, 3x3, 4x4, 5x5, 6x6, 7x7, 8x8, 9x9, 10x10,…*
x 3 facts: *3x4, 3x6, 3x7, 3x8,* (double then add 1 more set)
x 4 facts: *4x6, 4x7, 4x8* (double the 2x table)
Multiplying and dividing multiples of 10, 100: **2 x 3, 20 x 30, 200, 300**
Finding halves and quarters of higher numbers: **x2 and ÷2**
Differentiate between finding half of a number and finding how many halves are in a number
The use of multiples and factors in solving problems.
Dividing for understanding fractions and decimal numbers
Beginning to use known facts to predict possibilities and think flexibly about numbers
Use of strategies and written notation to solve problems mentally and/or written down.

Addition and subtraction facts to 30 –Numicon 5, Fluency in Numicon 6
Solve multiplying and dividing problems involving fractions and decimals efficiently, including money.
Calculating with integers
Using multiplying and dividing and multiples and factors to solve problems including scaling, ratio, percentages, fractions, and cube numbers
Using efficient column and other methods to solve problems