

## Links between the Numicon Teaching Programme and the Primary Framework for mathematics.

We recently asked for feedback about how schools are working with the Numicon teaching materials and have found that many of you are now successfully following the teaching programmes outlined in the teaching binders with really positive effects.

A number of schools still prefer to dip in and out of the teaching materials for different topics or follow the progression in the Primary Framework for Mathematics. With this in mind we have linked the Numicon Teaching Programme to the objectives in the Primary Framework to support teachers in their planning.

## Primary Framework for teaching Mathematics: Foundation Stage

Using and Applying Maths	Firm Foundation Activity Reference
Use developing mathematical ideas and methods to solve practical problems	9a, 9b, 11a, 11b, 14a, 14b
Match sets of objects to numerals that represent the number of objects	1a, 1b, 7b, 8a, 8b
Sort objects, making choices and justifying decisions	1a
Talk about, recognise and recreate simple patterns	5b, 6a
Describe solutions to practical problems drawing on experience talking about their own ideas, methods and choices	–
<b>Numbers as labels and for counting</b>	
Say and use number names in order in familiar contexts	1a, 1b, 6b, 7a, 7b, 8a, 8b, 14a, 14b
Count reliably up to 10 everyday objects	1a, 1b, 6b, 7b, 8b
Know that numbers identify how many objects are in a set	1b, 6a, 6b, 7b, 8a, 8b, 9a
Recognise numerals 1 to 9	1a, 1b, 7b, 8a, 8b
Count aloud in ones, twos, fives or tens	1a,
Use language such as 'more' or 'less' to compare two numbers	10b, 11a, 12a, 12b, 13a, 13b, 14a, 14b
<b>Knowing and using number facts</b>	
Find one more or one less than a number from 1 to 10	11a, 12b, 13b
Observe number relationships and patterns in the environment and use these to derive facts	1a
Select two groups of objects to make a given total of objects	7a, 10a, 10b, 11b
<b>Calculating</b>	
Count repeated groups of the same size	–
Begin to relate addition to combining two groups of object and subtraction to take away	10a, 10b, 11a, 11b, 12a, 12b, 13a, 13b
In practical activities and discussion begin to use the vocabulary involved in adding and subtracting	10a, 10b, 11a, 11b, 12a, 12b, 13a, 13b
Share objects in to equal groups and count how many are in each group	–

## Primary Framework for teaching Mathematics: Year 1

Using and applying mathematics	Numicon Kit 1 Activity Reference		
	Pattern Strand	Numbers and the Number System Strand	Calculating Strand
Solve problems involving counting, adding, subtracting, doubling or halving in the context of numbers, measures or money, for example to 'pay' and 'give change'	–	–	3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b
Describe ways of solving puzzles and problems, explaining choices and decisions orally or using pictures	–	–	–

## Primary Framework for teaching Mathematics: Year 1 (continued)

	Numicon Kit 1 Activity Card Reference		
	Pattern Strand	Numbers and the Number System Strand	Calculating Strand
<b>Using and applying mathematics (continued)</b>			
Describe simple patterns and relationships involving numbers or shapes; decide whether examples satisfy given conditions	1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b	–	4a, 4b
Answer a question by selecting and using suitable equipment, and sorting information, shapes or objects; display results using tables and pictures	–	–	–
Describe a puzzle or problem using numbers, practical materials and diagrams; use these to solve the problem and set the solution in the original context	–	–	1a, 1b, 2a, 2b, 3a
<b>Counting and understanding number</b>			
Count reliably at least 20 objects, recognising that when rearranged the number of objects stays the same; estimate a number of objects that can be checked by counting.	–	1a, 1b, 3a, 3b,	–
Compare and order numbers, using the related vocabulary; use the equals (=) sign.	–	2a, 2b, 3a, 3b, 4b, 5a, 5b, 6a, 6b, 7a	2a, 2b
Read & write numerals from 0 to 20, then beyond; use knowledge of place value to position these numbers on a number track & number line	–	2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a	–
Say the number that is 1 more or less than any given number, and 10 more or less for multiples of 10	3a, 3b	7b	–
Use the vocabulary of halves and quarters in context	–	–	–
<b>Knowing and using number facts</b>			
Derive & recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; work out the corresponding subtraction facts	4a, 4b	–	7b, 8a
Recall the doubles of all numbers to at least 10	–	–	5a, 5b
Count on or back in ones, twos, fives and tens and use this knowledge to derive the multiples of 2, 5 and 10 to the tenth multiple	5a, 5b	–	–
<b>Calculation</b>			
Relate addition to counting on; recognise that addition can be done in any order; use practical and informal written methods to support the addition of a one-digit number or a multiple of 10 to a one-digit or two-digit number	3a, 4a, 6a	4a	1a, 1b, 4a, 5a, 6a, 7b, 8b, 9a, 9b, 10a, 10b, 11a, 12a, 13a
Understand subtraction as 'take away' and find a 'difference' by counting up; use practical and informal written methods to support the subtraction of a one digit number from a one-digit or two-digit number and a multiple of 10 from a two-digit number	3b, 6b	–	3a, 4b, 6b, 7a, 8b, 11b, 12b, 13b
Use the vocabulary related to addition and subtraction and symbols to describe and record addition and subtraction number sentences	3a, 3b, 4a, 4b	–	1a, 1b, 2a, 2b, 3a
Solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups of 10, or sharing into equal groups	5b		

## Primary Framework for teaching Mathematics: Year 2

### Numicon Kit 2 Activity Card Reference

Using and applying mathematics	Pattern Strand	Numbers and the Number System Strand	Calculating Strand
Present solutions to puzzles and problems in an organised way; explain decisions, methods and results in pictorial, spoken or written form, using mathematical language and number sentences	5	–	–
Describe patterns and relationships involving numbers or shapes, make predictions and test these with examples	7	–	–
Solve problems involving addition, subtraction, multiplication or division in contexts of numbers, measures or pounds and pence	–	7, 9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
Follow a line of enquiry; answer questions by choosing and using suitable equipment and selecting, organising and presenting information in lists, tables and simple diagrams	–	–	–
Identify and record the information or calculation needed to solve a puzzle or problem; carry out the steps or calculations and check the solution in the context of the problem	4	–	5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18,
<b>Counting and understanding number</b>			
Read and write two-digit and three-digit numbers in figures and words; describe and extend number sequences and recognise odd and even numbers	2, 6, 7	2, 3, 5, 8, 9	–
Count up to 100 objects by grouping them and counting in tens, fives or twos; explain what each digit in a twodigit number represents, including numbers where 0 is a place holder; partition two-digit numbers in different ways, including into multiples of 10 and 1.	–	1, 2, 3, 5, 8, 9	–
Order two-digit numbers and position them on a number line; use the greater than (>) and less than (<) signs	–	2, 6	–
Estimate a number of objects; round two-digit numbers to the nearest 10	–	1, 10	–
Find one half, one quarter and three quarters of shapes and sets of objects	–	11, 12	21
<b>Knowing and using number facts</b>			
Derive and recall all addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100	5	5	1, 2, 3, 4
Understand that halving is the inverse of doubling and derive and recall doubles of all numbers to 20, and the corresponding halves	–	11, 12	3, 4
Derive and recall multiplication facts for the 2, 5 and 10 times-tables and the related division facts; recognise multiples of 2, 5 and 10	–	–	13, 14, 15, 16, 17, 19
Use knowledge of number facts and operations to estimate and check answers to calculations	1, 5	4	5, 6, 7, 17, 18
<b>Calculation</b>			
Add or subtract mentally a one-digit number or a multiple of 10 to or from any two-digit number; use practical and informal written methods to add and subtract two-digit numbers	5, 8, 9	7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Understand that subtraction is the inverse of addition and vice versa; use this to derive and record related addition and subtraction number sentences	1	–	1, 2, 3

## Primary Framework for teaching Mathematics: Year 2 (continued)

Numicon Kit 2 Activity Card Reference

Calculation (continued)	Pattern Strand	Numbers and the Number System Strand	Calculating Strand
Use the symbols +, −, ×, ÷ and = to record and interpret number sentences involving all four operations; calculate the value of an unknown in a number sentence (e.g. $R \div 2 = 6$ , $30 - R = 24$ )	3, 4	–	1, 11, 12, 17, 18, 19, 20
Represent repeated addition and arrays as multiplication, and sharing and repeated subtraction (grouping) as division; use practical and informal written methods and related vocabulary to support multiplication and division, including calculations with remainders	–	–	11, 12, 13, 14, 15, 16, 17, 18, 19, 20