### St Nicholas C.E Primary School



# **Calculation Progression Policy**

Multiplication

#### ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION $\rightarrow$ YEAR ONE

Objective	Concrete	Pictorial	Abstract
Repeated grouping/ repeated addition	3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group.	Children to represent the practical resources in a picture and use a bar model	TEACHER MODELLED  Alongside concrete/pictorial
		?	$3 \times 4 = 12$ 4 + 4 + 4 = 12
Numberlines to show	Using a beadstring	Represent this	TEACHER MODELLED
repeated groups		pictorially alongside a number line	Alongside concrete/pictorial
	A0000-0000-00.	(000) (000) (000)	Abstract number line showing three jumps of four
			9 12
Doubling	Using Numicon with part-whole model	Using dots with part-whole model	Using numbers with part- whole model
			3 3
Vocabulary		Stem Sentences	
repeated addition grouping equal groups of double multiply times lots of		The whole is  There are equal groups with in each group.	

#### ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION→ YEAR TWO

Objective	Concrete	Pictorial	Abstract
Repeated grouping/ repeated addition	3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group.	Children to represent the practical resources in a picture and use a bar model	TEACHER MODELLED  Alongside concrete/pictorial
		00 00 W	$3 \times 4 = 12$ 4 + 4 + 4 = 12
Numberlines to show	Using a beadstring	Represent this	TEACHER MODELLED
repeated groups		pictorially alongside a number line	Alongside concrete/pictorial
	3000 - 3000 - 300 × 300	0000 (0000	Abstract number line showing three jumps of four
			9 12
Doubling	Using Numicon with part-whole model	Using dots with part-whole model	Using numbers with part- whole model
			3 3
Arrays to illustrate	Counters and other resources	Represent arrays pictorially	Use arrays to write and
commutivity	$2 \times 5 = 5 \times 2$ $2 \text{ lots of } 5$ $5 \text{ lots of } 2$	00 00000	interoret a range of calculations 10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5
Vocabulary		Stem Se	ntences
repeated addition grouping equal groups of double		The whole is	
multiply	times lots of <b>array</b>	There are equal group	os with in each group.

#### ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION→ YEAR THREE

Objective	Concrete	Pictorial	Abstract
Numberlines to show repeated groups	Using a beadstring	Represent this pictorially alongside a	TEACHER MODELLED
		number line	Alongside concrete/pictorial
	40000 - 0000 - 000	000 00000	Abstract number line showing three jumps of four
			O 4 8 12
Doubling	Using Numicon with part-whole model	Using dots with part-whole model	Using numbers with part- whole model
			3 3
Arrays to illustrate	Counters and other resources	Represent arrays pictorially	Use arrays to write and
commutivity	2×5=5×2		interoret a range of
	2 lots of 5 5 lots of 2	00000	calculations 10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5
Partition to multiply	Using numicon, base 10, place	Children to represent the	Use grid method
	value counters or Cuisenaire rods  4×15  ———————————————————————————————————	concrete pictorially	x 1 0 5 4 4 0 20 + 20
Vocabulary		Stem Sentences	
repeated addition grouping equal groups of double multiply times lots of array partitioning grid method product		The whole is  There are equal groups with in each group.	
		The product is There a	re equal groups of

### ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION→ YEAR FOUR

Objective	Concrete	Pictorial	Abstract
Formal Method (no exchanging)	With place value C13 x 23  10s 1s 6 9	Represent the counters pictorially  10s   1s   1s   1s   1s   1s   1s   1s	Use of formal method
Formal Method ( exchanging required) TO X O HTO X O	With place value cou 100s 10s 1s	Represent the counters pictorially 100s 10s 1s	Use of formal method
Vocabulary		Stem Sentences	
repeated addition grouping equal groups of double multiply times lots of array partitioning grid method product short multiplication column exchange		The whole is  There are equal groups with in each group.  The product is There are equal groups of	

## ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION- YEAR FIVE

Objective	Concrete	Pictorial	Abstract
Short multiplication ThHTO X O			Formal method  1 3 9 2  x 5  1 4 1  6 9 6 0
Long Multiplication ThHTO X O	When children start to mul × 2d etc., they should be co		Formal method  328  × 14  472  13312  × 38  6280  134160  7592 17936
Vocabulary		Stem Sentences	
repeated addition grouping equal groups of double multiply time lots of array partitioning grid method product short multiplication column exchange long multiplication		The whole is  There are equal groups with in each group.  The product is There are equal groups of	

## ST NICHOLAS C.E. PRIMARY SCHOOL MULTIPLICATION- YEAR SIX

Objective	Concrete	Pictorial	Abstract
Long Multiplication			Formal method
ThHTO X O			328 × 14 472 113°12 × 38 6280 124160 124160 17936
Using known facts			
			7 x 3 = 21
			0.7 x 3 = 2.1
			$0.7 \times 0.3 = 0.21$
			70 x 3 = 210
			70 x 30 = 2100
Vocabulary		Stem Sentences	
repeated addition grouping equal groups of double multiply times lots of array		The whole is	
partitioning grid method product short		There are equal groups with in each group.	
multiplication column exchange long multiplication		The product is There are equal groups of	