

# QCES Calculation Policy: Multiplication X

## Stage 1

- Double a number (use objects)
- Counting in tens



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Vocabulary:

Equal  
Double  
Groups of

## Stage 2

- Introduction of sign x and understand multiplication as repeated addition
- 'groups of' jottings are recorded pictorially
- A more formal array is recorded
- Counting on in 2's/5's/10's.

$$2 \times 4 = 8$$

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$$4 \times 2 = 8$$

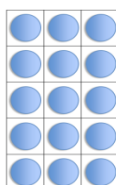
○ ○ ○ ○

Vocabulary:

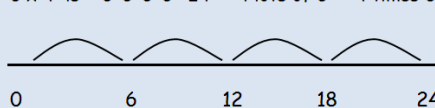
Multiply  
Multiplication  
Multiplied by  
Array  
Groups of

## Stage 3 2,3,4,5 and 10

- Number sentences recorded  $3 \times 5 = 15$
- Further use of pictorial arrays
- Number line using repeated addition is used
- Know the inverse between multiplication and division



$6 \times 4$  is  $6+6+6+6=24$  4 lots of 6 4 times 6



Vocabulary:

Once, twice, three times...  
Repeated addition  
Row  
Column

## Stage 4 2,3,4,5,6,8 and 10

- Begin to use partitioning and record simple multiplication as a number sentence eg  $25 \times 4 = (20 \times 4) + (5 \times 4)$
- Use grid method to calculate TU x U

		20	5	
4	x	80	20	
80	+	20	=	100

Vocabulary:

Product (the answer to a multiplication calculation)  
Associated number facts

## Stage 5

- Grid method HTO x O and TO x TO
- Calculations involve times tables up to  $12 \times 12$
- Column method for two digit numbers, chunking in columns, exchanging.

$346 \times 9 =$				
		300	40	6
9	x	2700	360	54
2700	+	360	+	54
= 3114				

x	30	5
20	600	100
6	180	30

$600 + 100 = 700$   
 $180 + 30 = 210$   
 $700 + 210 = 910$

Vocabulary:

Product (the answer to a multiplication calculation)  
Associated number facts

## Stage 6

- Use grid method to calculate HTO x O involving decimals

$4.9 \times 3 =$		
	4	0.9
3	x	12
12	+	2.7
=		

Vocabulary:

Grid multiplication method

## Stage 7

- This stage will only be taught when a good understanding of the grid method is shown.
- Formal short multiplication method begins HTO x T

$934 \times 6 =$			
	9	3	4
x			6
5	8	0	4
	2	2	

$269 \times 78 =$			
	2	6	9
x		7	8
1	8	8	3
2	0	9	8
1			

Vocabulary:

Short Multiplication with a 1 digit number

A good mathematician is one who understands the problem and then chooses an appropriate method to solve it!

**Stage 8****Vocabulary:**

- Multiplication of 2 decimal places for expanded and formal written methods.
- Partitioning to 2 decimal places the number multiplied by a 2 digit number.
- Expanded written method to decimal places multiplied by a 2 digit number.
- Formal written method