Multiplication

- Making equal groups of objects - How many altogether?

- Repeated Addition - three groups of 2
- Lots of   *2's* 5's   10's
- Add another group

- Drawing objects in groups – There are 3 sweets in one bag, how many sweets are there in 5 bags?
- Match numerals to groups of objects

- Record numbers, possibly in a horizontal sentence along with drawings
- Use x sign to indicate groups of

- Draw arrays (arrangements of dots/marks)
- Write related horizontal calculations.

```
 *    *    *        3x 2 = 6
 *    *    *
 2 x 3 = 6
```

- Complete missing number sums _ **x 2 = 14, 7 x _ = 14, 14 = _ x 7**

- Regular times table practise begins – Y2 x 2, 5, 10 - Y3 x 2, 3, 4, 5, 6, 10 - Y4 x and – 10 x 10
- Doubling and multiples of 5 to 50
- Make the connection with the inverse and matching division facts

Vocabulary

times
groups of
multiply
product
lots of
multiplied by
sets of
multiple of
once
twice
repeated-addition
array
row
column

- Use a number line or hundred square to count on in groups of a number.
- Record the horizontal number sentence to go with it.
- Use a number line to jump forward in groups and record the horizontal number sentence to go with it.

$8 \times 2 = 16$

$2 \times 8 = 16$
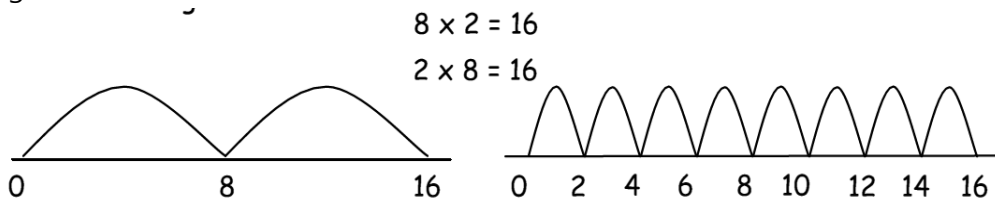
(I count on in groups of 8/lots of 8)   (I count on in groups of 2/lots of 2)

- Write horizontal number sentences and use partitioning

$$8 \times 23 \;=\; 8 \times 10 \;+\; 8 \times 10 \;+\; 8 \times 3$$
$$=\; 80 \;+\; 80 \;+\; 24$$
$$=\; 184$$

- This develops into the grid method

X	10	10	3	
8	80	80	24	=184

leading to

X	20	3	
8	160	24	= 184

The grid method can then be used for 2-digit by 2-digit multiplication.

66 x 34 =

X	60	6	
30	1800	180	
4	240	24	
	= 2040	= 204	= 2244

Or

X	60	6	
30	1800	180	= 1980
4	240	24	= 264
			= 2244

This is extended to larger numbers

2035 x 17

X	2000	30	5	
10	20000	300	50	
7	14000	210	35	
	= 34000	= 510	= 85	= 34595

Pencil and paper procedures

Extended form

```
      2 4 6
x         7
  1 4 0 0      (200 x 7)
    2 8 0      (40 x 7)
      4 2      (6 x 7)
  1 7 2 2
```

Non-extended form

Leading to long multiplication

```
    3  5  2
  x     2 7
  2  4  6 4
  7  0  4 0

  9  5  0 4
```

- Extend to decimals with up to two decimal places

```
      4 . 6 2
x       1    3
  1 3 . 8 6
```

Please note:

- Use of any method is appropriate depending on the type and context of calculation.

- In problem solving situations practise choosing the most appropriate method for a variety of calculations.

- Apply methods learnt and use confidently in a range of situations

- Ongoing consolidation of times tables and related division facts

- Instant recall of 2, 5, 10, 3, 4, 6, 7, 8, 9 times tables (usually in that order)