

## Progression in multiplication Y3 to Y6

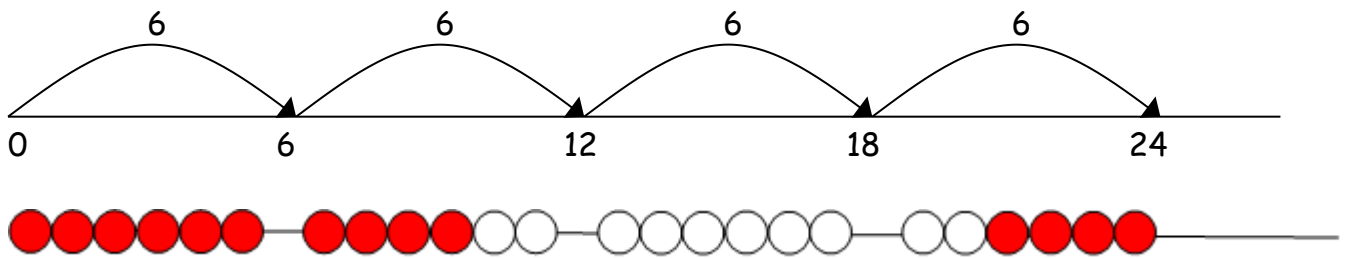
### Y3

Children will continue to use:

✓ **Repeated addition**

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

Children should use number lines or bead bars to support their understanding.



### Y4

**Grid method**

**2 digit x 1 digit using formal written layout**

**3 digit by 1 digit using formal written layout**

$23 \times 8$

Children will approximate first

$23 \times 8$  is approximately  $25 \times 8 = 200$

$$\begin{array}{r} \times \quad 20 \quad 3 \\ 8 \quad \boxed{160} \quad \boxed{24} \end{array}$$

$$\begin{array}{r} 160 \\ + \quad 24 \\ \hline 184 \end{array}$$

## Y5

### Grid method

#### Up to 4 digits x one or two digit number

(Short multiplication - multiplication by a single digit)

(Long multiplication - 4 digits x 2 digits)

$$346 \times 9$$

Children will approximate first

$346 \times 9$  is approximately  $350 \times 10 = 3500$

$$\begin{array}{r} \times \quad 300 \quad 40 \quad 6 \\ 9 \quad \boxed{2700} \quad \boxed{360} \quad \boxed{54} \end{array}$$

$$\begin{array}{r} 2700 \\ + 360 \\ + \quad 54 \\ \hline 3114 \\ \phantom{00} 11 \end{array}$$

(Long multiplication - multiplication by more than a single digit)

$$72 \times 38$$

Children will approximate first

$72 \times 38$  is approximately  $70 \times 40 = 2800$

$$\begin{array}{r} \times \quad 70 \quad 2 \\ 30 \quad \boxed{2100} \quad \boxed{60} \\ 8 \quad \boxed{560} \quad \boxed{16} \end{array}$$

$$\begin{array}{r} 2100 \\ + 560 \\ + \quad 60 \\ + \quad 16 \\ \hline 2736 \\ \phantom{00} 1 \end{array}$$

Using similar methods, they will be able to multiply decimals with one decimal place by a single digit number, approximating first. They should know that the decimal points line up under each other.

e.g.  $4.9 \times 3$

Children will approximate first  
 $4.9 \times 3$  is approximately  $5 \times 3 = 15$

x	4	0.9
3	12	2.7

	12
+	2.7
	14.7

## Y6

**Multi-digit numbers up to 4 digits by a 2 digit whole number using formal written method of long multiplication**

(Short multiplication - multiplication by a single digit)

$4346 \times 8$

Children will approximate first  
 $4346 \times 8$  is approximately  $4346 \times 10 = 43460$

x	4000	300	40	6
8	32000	2400	320	48

	32000
+	
	2400
+	320
+	48
	34768

(Long multiplication - multiplication by more than a single digit)

$$372 \times 24$$

Children will approximate first

$$372 \times 24 \text{ is approximately } 400 \times 25 = 10000$$

x	300	70	2	
20	6000	1400	40	6000
4	1200	280	8	+ 1400
				+ 1200
				+ 280
				+ 40
				+ 8
				<hr style="width: 100%; border: 0.5px solid black;"/> 8928
				1

*Using similar methods, they will be able to multiply decimals with up to two decimal places by a single digit number and then two digit numbers, approximating first. They should know that the decimal points line up under each other.*

*For example:*

$$4.92 \times 3$$

Children will approximate first

$$4.92 \times 3 \text{ is approximately } 5 \times 3 = 15$$

x	4	0.9	0.02	
3	12	2.7	0.06	12
				+ 0.7
				+ 0.06
				<hr style="width: 100%; border: 0.5px solid black;"/> 12.76