

# PROGRESSION THROUGH CALCULATIONS FOR MULTIPLICATION

## MENTAL CALCULATIONS

(ongoing)

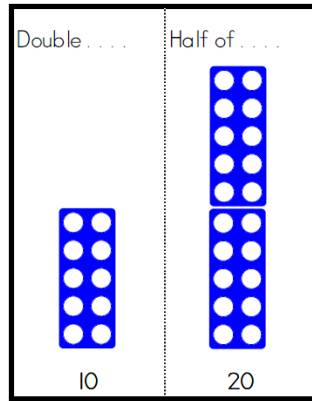
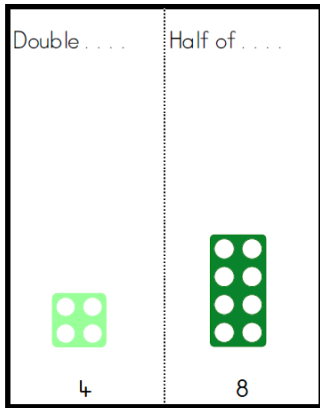
These are a **selection** of mental calculation strategies:

See NNS Framework Section 5, pages 52-57 and Section 6, pages 58-65

### Doubling and halving

Applying the knowledge of doubles and halves to known facts.

e.g.  $8 \times 4$  is double  $4 \times 4$



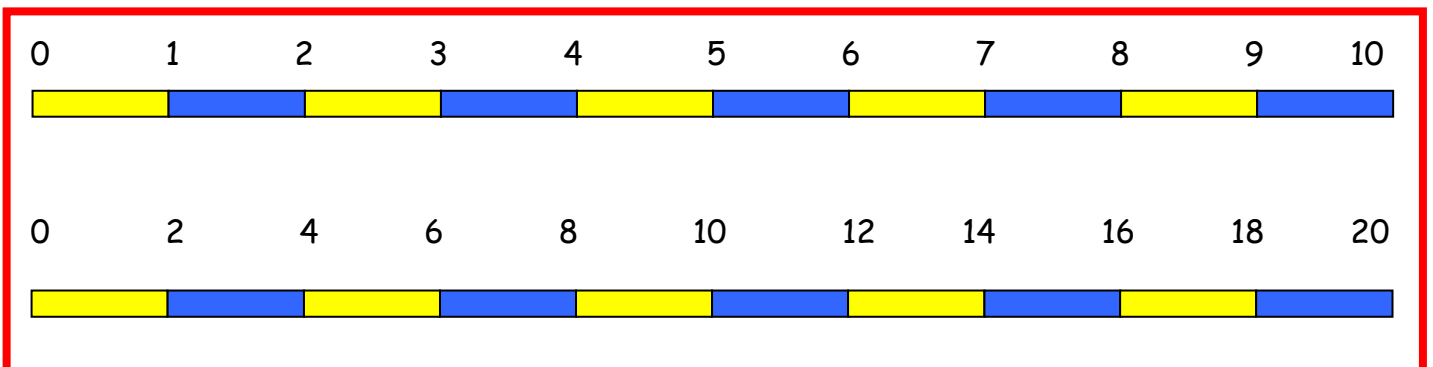
### Using multiplication facts

*Tables should be taught everyday from Year 2 onwards, either as part of the mental oral starter or other times as appropriate within the day.*

### Year 2

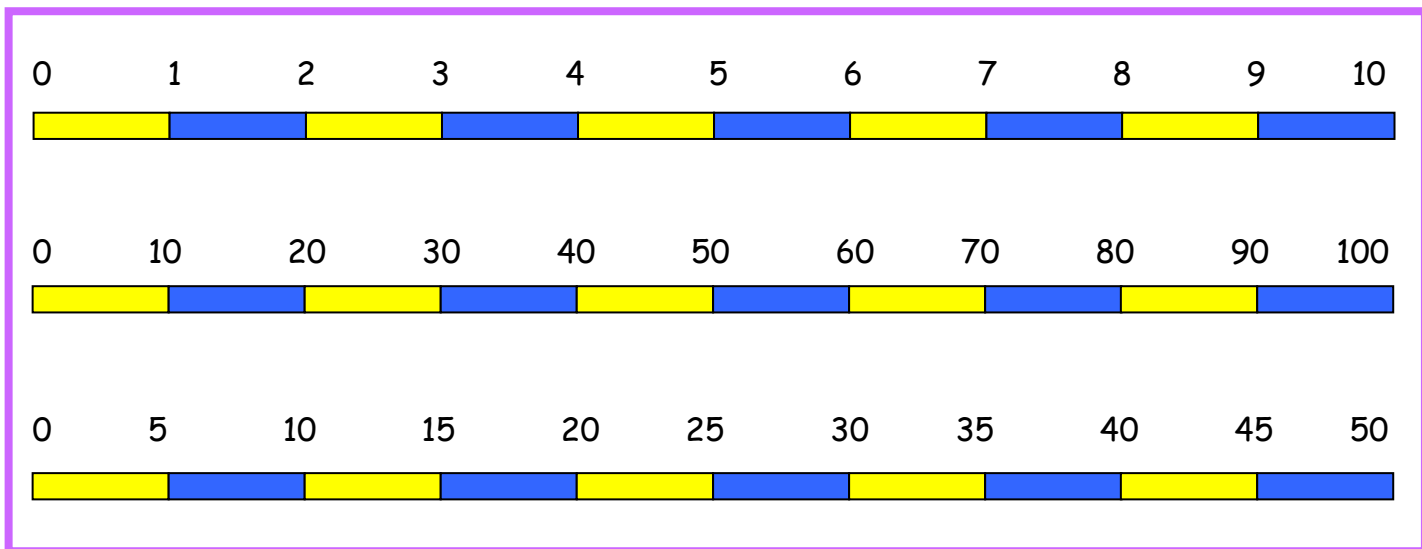
1 times table  
2 times table

1 times table  
10 times table  
5 times table



0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	2	=	0
1	x	2	=	2
2	x	2	=	4
3	x	2	=	6
4	x	2	=	8
5	x	2	=	10
6	x	2	=	12
7	x	2	=	14
8	x	2	=	16
9	x	2	=	18
10	x	2	=	20



0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	10	=	0
1	x	10	=	10
2	x	10	=	20
3	x	10	=	30
4	x	10	=	40
5	x	10	=	50
6	x	10	=	60
7	x	10	=	70
8	x	10	=	80
9	x	10	=	90
10	x	10	=	100

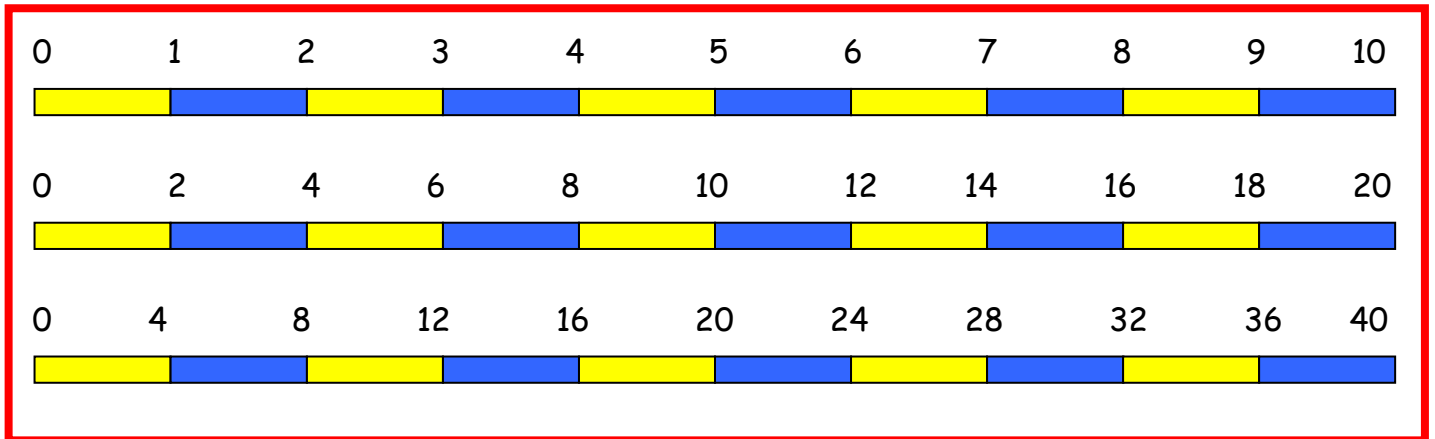
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1	x	5	=	5
2	x	5	=	10
3	x	5	=	15
4	x	5	=	20
5	x	5	=	25
6	x	5	=	30
7	x	5	=	35
8	x	5	=	40
9	x	5	=	45
10	x	5	=	50

## Year 3

1 times table  
2 times table  
4 times table

1 times table  
10 times table  
5 times table

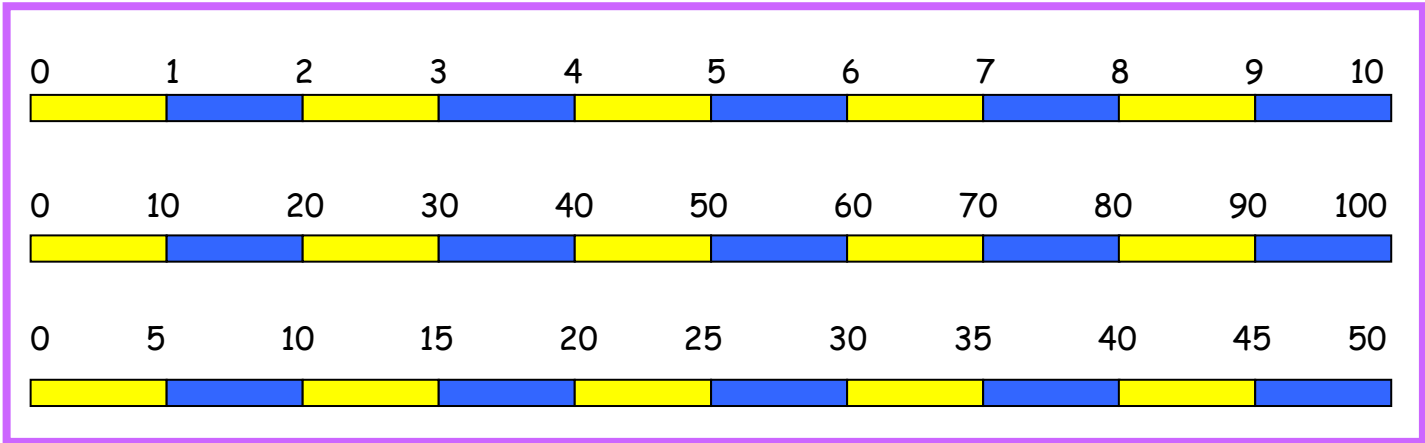
1 times table  
3 times table



+		0	x	1	=	0
		1	x	1	=	1
		2	x	1	=	2
		3	x	1	=	3
		4	x	1	=	4
		5	x	1	=	5
		6	x	1	=	6
		7	x	1	=	7
		8	x	1	=	8
		9	x	1	=	9
		10	x	1	=	10

		0	x	2	=	0
		1	x	2	=	2
		2	x	2	=	4
		3	x	2	=	6
		4	x	2	=	8
		5	x	2	=	10
		6	x	2	=	12
		7	x	2	=	14
		8	x	2	=	16
		9	x	2	=	18
		10	x	2	=	20

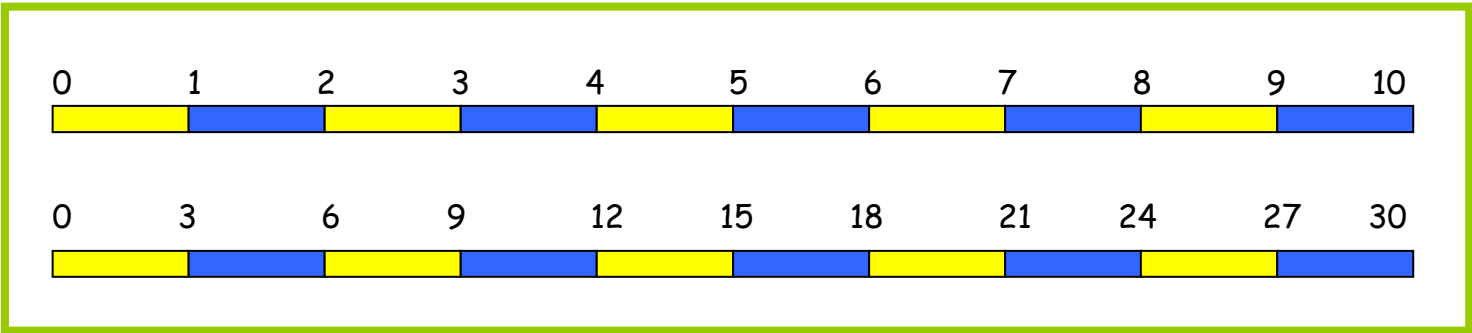
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		2	x	4	=	8
		3	x	4	=	12
		4	x	4	=	16
		5	x	4	=	20
		6	x	4	=	24
		7	x	4	=	28
		8	x	4	=	32
		9	x	4	=	36
		10	x	4	=	40



	0	x	1	=	0
	1	x	1	=	1
	2	x	1	=	2
	3	x	1	=	3
	4	x	1	=	4
	5	x	1	=	5
	6	x	1	=	6
	7	x	1	=	7
	8	x	1	=	8
	9	x	1	=	9
	10	x	1	=	10

	0	x	10	=	0
	1	x	10	=	10
	2	x	10	=	20
	3	x	10	=	30
	4	x	10	=	40
	5	x	10	=	50
	6	x	10	=	60
	7	x	10	=	70
	8	x	10	=	80
	9	x	10	=	90
	10	x	10	=	100

	0	x	5	=	0
	1	x	5	=	5
	2	x	5	=	10
	3	x	5	=	15
	4	x	5	=	20
	5	x	5	=	25
	6	x	5	=	30
	7	x	5	=	35
	8	x	5	=	40
	9	x	5	=	45
	10	x	5	=	50



	0	x	1	=	0
	1	x	1	=	1
	2	x	1	=	2
	3	x	1	=	3
	4	x	1	=	4
	5	x	1	=	5
	6	x	1	=	6
	7	x	1	=	7
	8	x	1	=	8
	9	x	1	=	9
	10	x	1	=	10

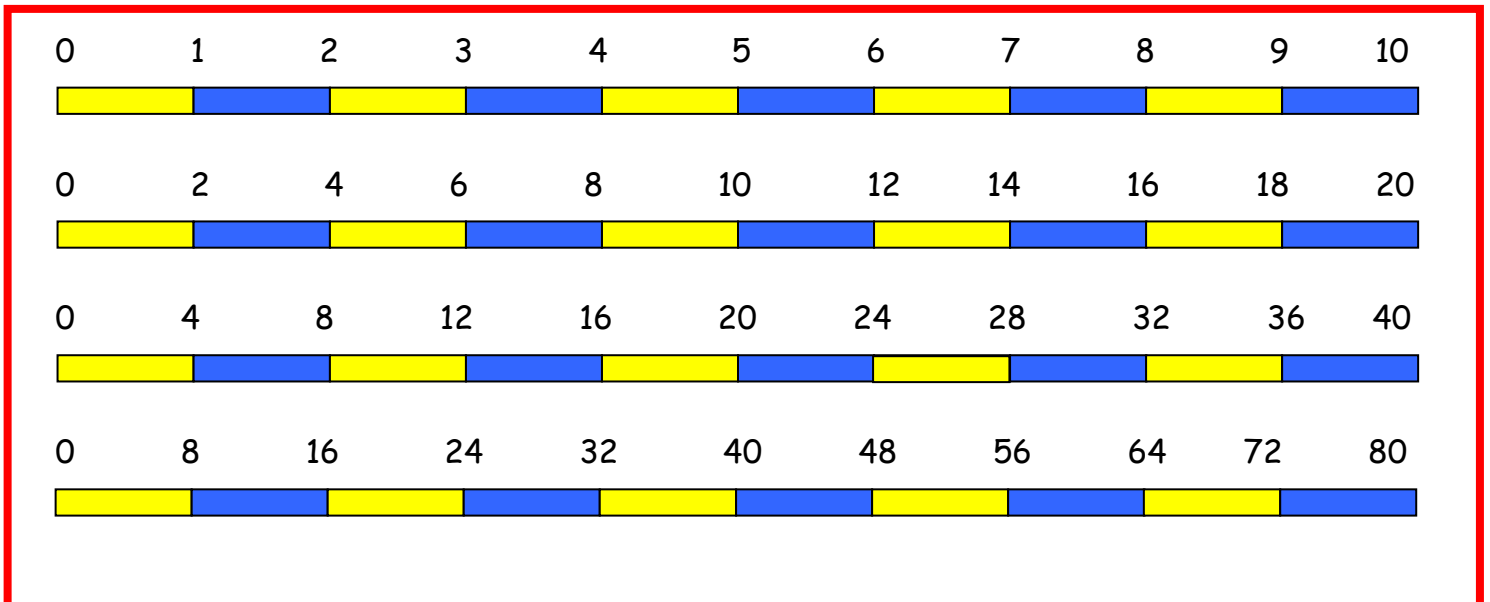
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	5	x	3	=	15
	6	x	3	=	18
	7	x	3	=	21
	8	x	3	=	24
	9	x	3	=	27
	10	x	3	=	30

## Year 4

1 times table  
2 times table  
4 times table  
8 times table

1 times table  
10 times table  
5 times table

1 times table  
3 times table  
6 times table  
9 times table

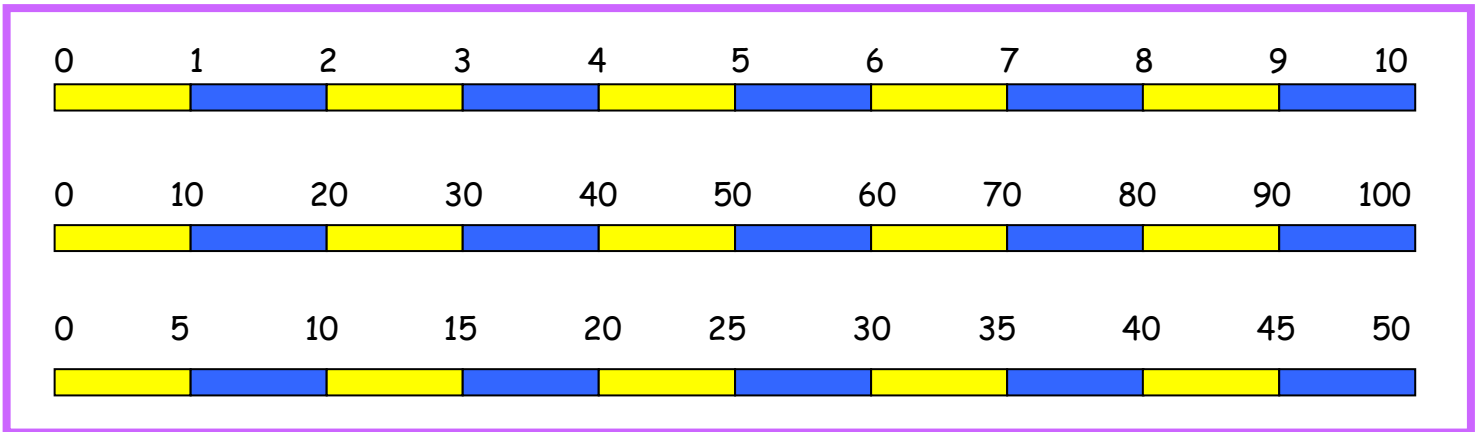


0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	2	=	0
1	x	2	=	2
2	x	2	=	4
3	x	2	=	6
4	x	2	=	8
5	x	2	=	10
6	x	2	=	12
7	x	2	=	14
8	x	2	=	16
9	x	2	=	18
10	x	2	=	20

0	x	4	=	0
1	x	4	=	4
2	x	4	=	8
3	x	4	=	12
4	x	4	=	16
5	x	4	=	20
6	x	4	=	24
7	x	4	=	28
8	x	4	=	32
9	x	4	=	36
10	x	4	=	40

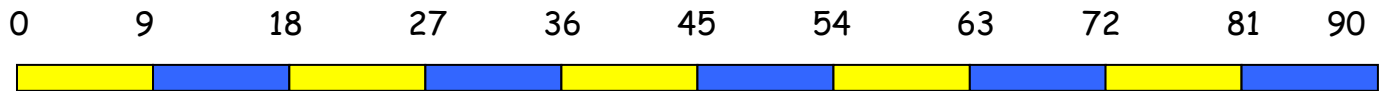
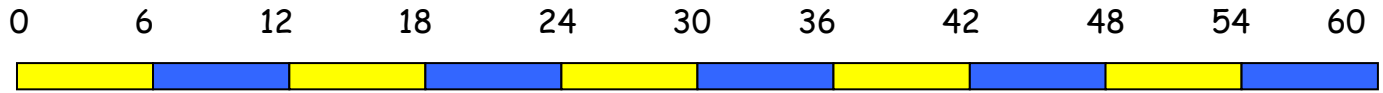
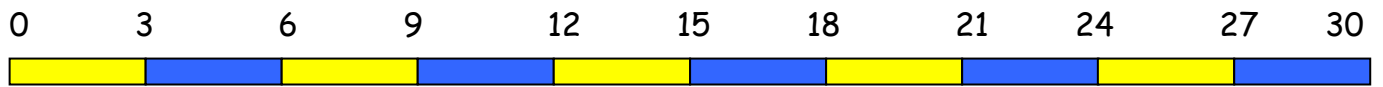
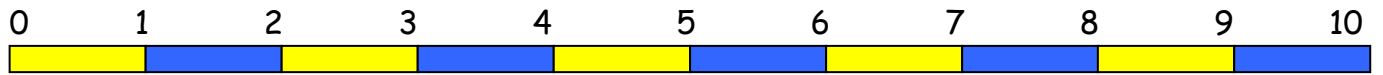
0	x	8	=	0
1	x	8	=	8
2	x	8	=	16
3	x	8	=	24
4	x	8	=	32
5	x	8	=	40
6	x	8	=	48
7	x	8	=	56
8	x	8	=	64
9	x	8	=	72
10	x	8	=	80



0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	10	=	0
1	x	10	=	10
2	x	10	=	20
3	x	10	=	30
4	x	10	=	40
5	x	10	=	50
6	x	10	=	60
7	x	10	=	70
8	x	10	=	80
9	x	10	=	90
10	x	10	=	100

0	x	5	=	0
1	x	5	=	5
2	x	5	=	10
3	x	5	=	15
4	x	5	=	20
5	x	5	=	25
6	x	5	=	30
7	x	5	=	35
8	x	5	=	40
9	x	5	=	45
10	x	5	=	50



	0	x	1	=	0
	1	x	1	=	1
	2	x	1	=	2
	3	x	1	=	3
	4	x	1	=	4
	5	x	1	=	5
	6	x	1	=	6
	7	x	1	=	7
	8	x	1	=	8
	9	x	1	=	9
	10	x	1	=	10

	0	x	3	=	0
	1	x	3	=	3
	2	x	3	=	6
	3	x	3	=	9
	4	x	3	=	12
	5	x	3	=	15
	6	x	3	=	18
	7	x	3	=	21
	8	x	3	=	24
	9	x	3	=	27
	10	x	3	=	30

	0	x	6	=	0
	1	x	6	=	6
	2	x	6	=	12
	3	x	6	=	18
	4	x	6	=	24
	5	x	6	=	30
	6	x	6	=	36
	7	x	6	=	42
	8	x	6	=	48
	9	x	6	=	54
	10	x	6	=	60

	0	x	9	=	0
	1	x	9	=	9
	2	x	9	=	18
	3	x	9	=	27
	4	x	9	=	36
	5	x	9	=	45
	6	x	9	=	54
	7	x	9	=	63
	8	x	9	=	72
	9	x	9	=	81
	10	x	9	=	90

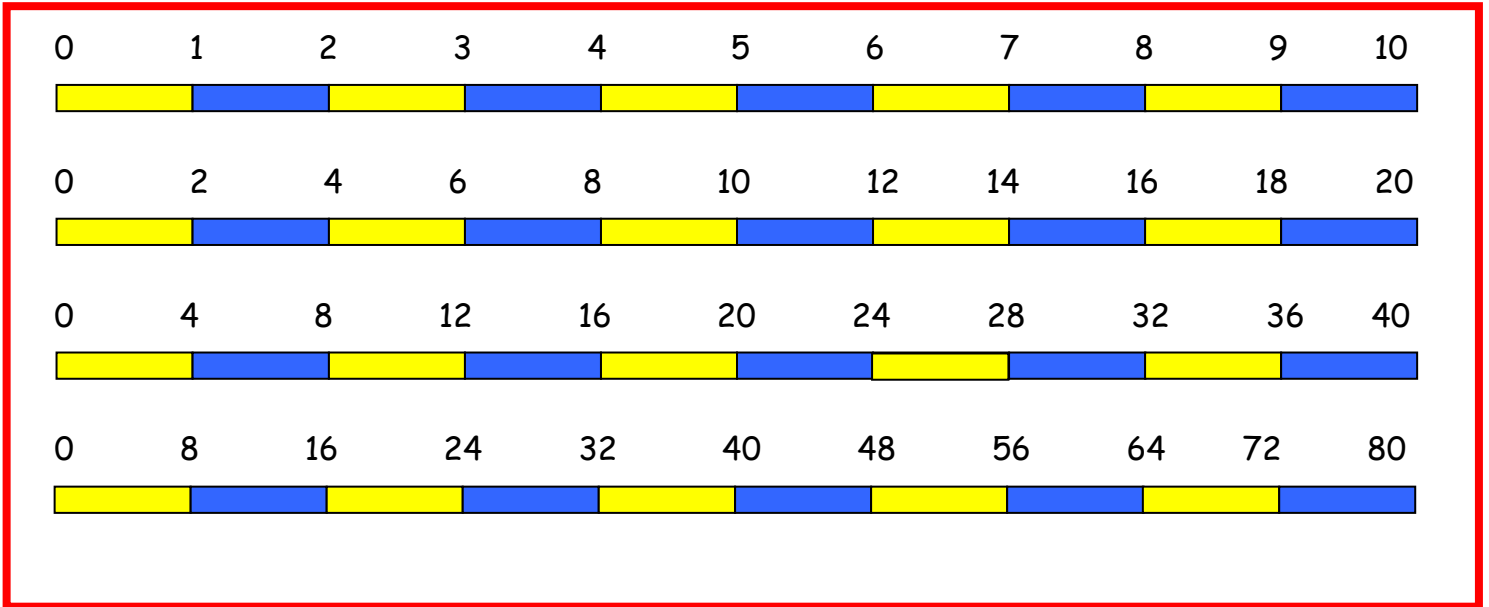
**Years 5 and 6** Derive and recall quickly all multiplication facts up to 10 x 10.

1 times table  
2 times table  
4 times table  
8 times table

1 times table  
10 times table  
5 times table

1 times table  
3 times table  
6 times table  
9 times table

1 times table  
7 times table



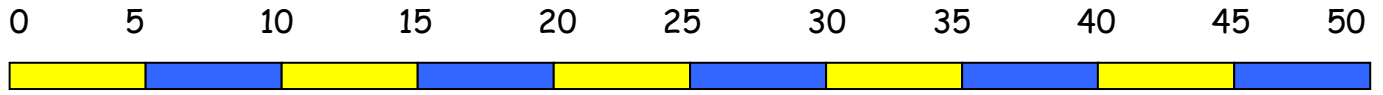
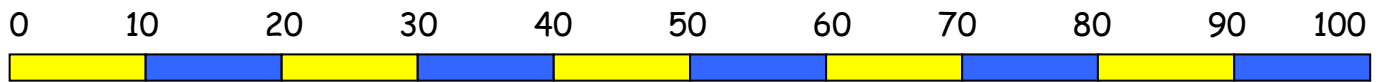
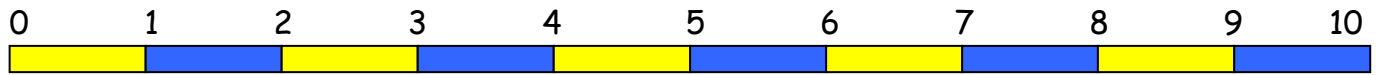
0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	2	=	0
1	x	2	=	2
2	x	2	=	4
3	x	2	=	6
4	x	2	=	8
5	x	2	=	10
6	x	2	=	12
7	x	2	=	14
8	x	2	=	16
9	x	2	=	18
10	x	2	=	20

0	x	4	=	0
1	x	4	=	4
2	x	4	=	8
3	x	4	=	12
4	x	4	=	16
5	x	4	=	20
6	x	4	=	24
7	x	4	=	28
8	x	4	=	32
9	x	4	=	36
10	x	4	=	40

0	x	8	=	0
1	x	8	=	8
2	x	8	=	16
3	x	8	=	24
4	x	8	=	32
5	x	8	=	40
6	x	8	=	48
7	x	8	=	56
8	x	8	=	64
9	x	8	=	72
10	x	8	=	80

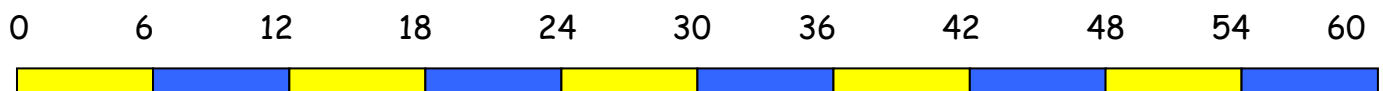
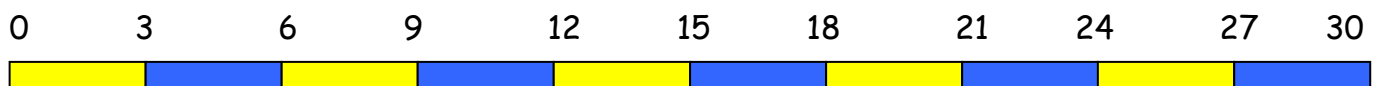
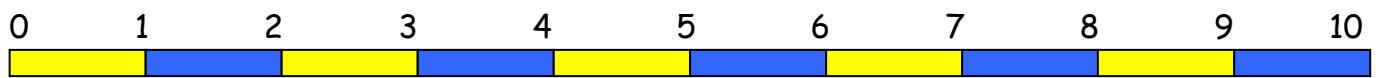




⊕										
	0	x	1	=					0	
	1	x	1	=					1	
	2	x	1	=					2	
	3	x	1	=					3	
	4	x	1	=					4	
	5	x	1	=					5	
	6	x	1	=					6	
	7	x	1	=					7	
	8	x	1	=					8	
	9	x	1	=					9	
	10	x	1	=					10	
										□

	0	x	10	=					0	
	1	x	10	=					10	
	2	x	10	=					20	
	3	x	10	=					30	
	4	x	10	=					40	
	5	x	10	=					50	
	6	x	10	=					60	
	7	x	10	=					70	
	8	x	10	=					80	
	9	x	10	=					90	
	10	x	10	=					100	

⊕										
	0	x	5	=					0	
	1	x	5	=					5	
	2	x	5	=					10	
	3	x	5	=					15	
	4	x	5	=					20	
	5	x	5	=					25	
	6	x	5	=					30	
	7	x	5	=					35	
	8	x	5	=					40	
	9	x	5	=					45	
	10	x	5	=					50	
										□

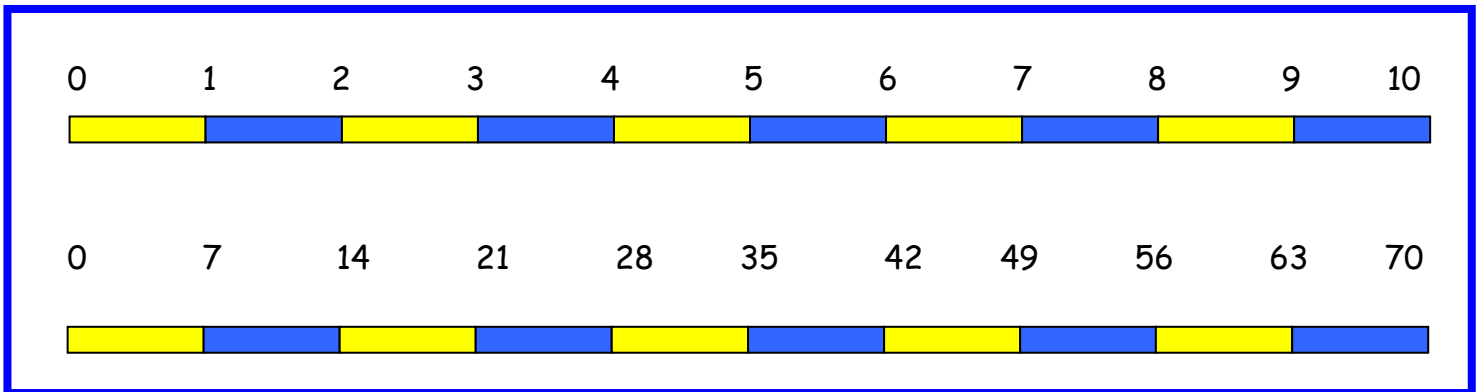


0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	3	=	0
1	x	3	=	3
2	x	3	=	6
3	x	3	=	9
4	x	3	=	12
5	x	3	=	15
6	x	3	=	18
7	x	3	=	21
8	x	3	=	24
9	x	3	=	27
10	x	3	=	30

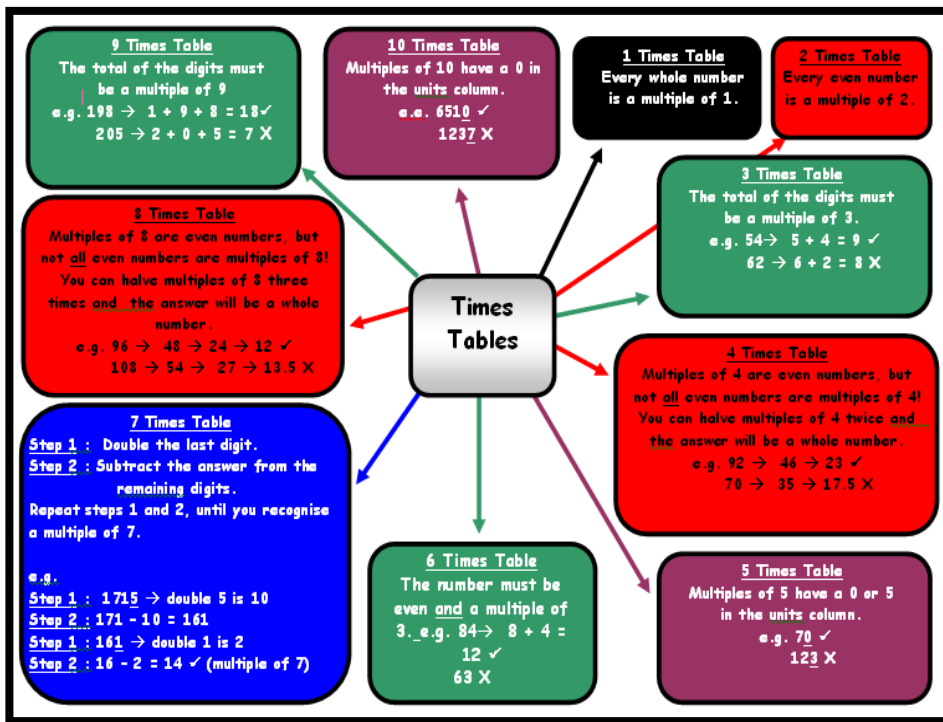
0	x	6	=	0
1	x	6	=	6
2	x	6	=	12
3	x	6	=	18
4	x	6	=	24
5	x	6	=	30
6	x	6	=	36
7	x	6	=	42
8	x	6	=	48
9	x	6	=	54
10	x	6	=	60

0	x	9	=	0
1	x	9	=	9
2	x	9	=	18
3	x	9	=	27
4	x	9	=	36
5	x	9	=	45
6	x	9	=	54
7	x	9	=	63
8	x	9	=	72
9	x	9	=	81
10	x	9	=	90



0	x	1	=	0
1	x	1	=	1
2	x	1	=	2
3	x	1	=	3
4	x	1	=	4
5	x	1	=	5
6	x	1	=	6
7	x	1	=	7
8	x	1	=	8
9	x	1	=	9
10	x	1	=	10

0	x	7	=	0
1	x	7	=	7
2	x	7	=	14
3	x	7	=	21
4	x	7	=	28
5	x	7	=	35
6	x	7	=	42
7	x	7	=	49
8	x	7	=	56
9	x	7	=	63
10	x	7	=	70



Pupils should be able to utilise their tables' knowledge to derive other facts.  
E.g. If I know  $3 \times 7 = 21$ , what else do I know?

$$30 \times 7 = 3 \times 7 \times 10 = 210$$

$$300 \times 7 = 3 \times 7 \times 10 \times 10 = 3 \times 7 \times 100 = 2100$$

$$3000 \times 7 = 3 \times 7 \times 10 \times 10 \times 10 = 3 \times 7 \times 10 \times 100 = 3 \times 7 \times 1000 = 21\,000$$

$$0.3 \times 7 = (3 \times 7) \div 10 = 2.1$$

**Use closely related facts already known**

$$\begin{aligned} 13 \times 11 &= (13 \times 10) + (13 \times 1) \\ &= 130 + 13 \\ &= 143 \end{aligned}$$

## Multiplying by 10 or 100

Knowing that the effect of multiplying by 10 is a shift in the digits one place to the left.

Knowing that the effect of multiplying by 100 is a shift in the digits two places to the left.

### Multiplying by 10

When multiplying a whole number by 10, the digits move one column to the left, and a 0 is placed in the units column.

### Multiplying by 100

When multiplying a whole number by 100, the digits move two columns to the left, and a 0 is placed in the tens and units column.

Moving Digits 0.8.exe

## Partitioning

$$\begin{aligned} 38 \times 7 &= (30 \times 7) + (8 \times 7) \\ &= 210 + 56 \\ &= 266 \end{aligned}$$

38 × 7

## Use of factors

$$\begin{aligned} 21 \times 18 &= 21 \times 9 \times 2 \\ 21 \times 9 &= 189 \\ 189 \times 2 &= 378 \end{aligned}$$

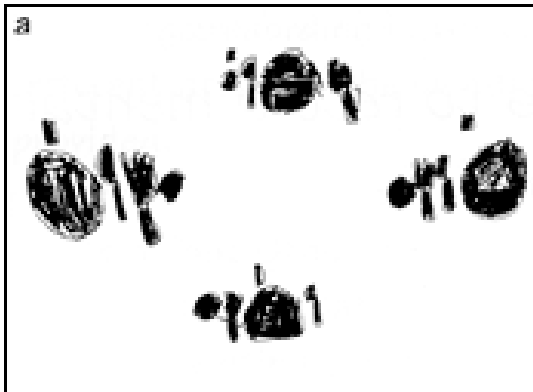
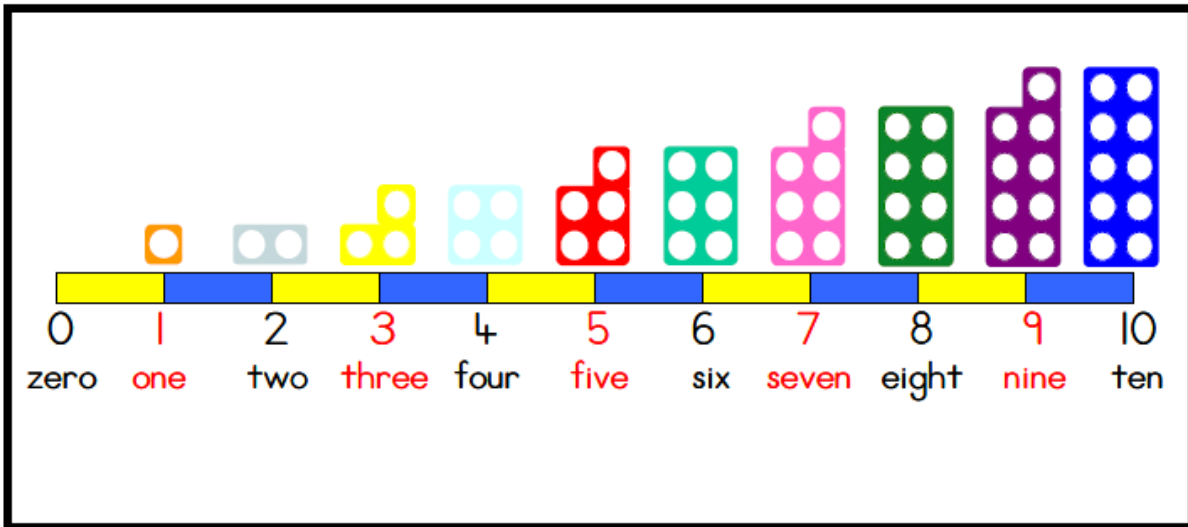
$$\begin{aligned} 11 \times 50 &= 11 \times 5 \times 10 \\ 11 \times 5 &= 55 \\ 55 \times 10 &= 550 \end{aligned}$$

*MANY MENTAL CALCULATION STRATEGIES WILL CONTINUE TO BE USED. THEY ARE NOT REPLACED BY WRITTEN METHODS.*

THE FOLLOWING ARE STANDARDS THAT WE EXPECT THE MAJORITY OF PUPILS TO ACHIEVE.

## Reception and Year 1

Pupils will experience equal groups of objects and will count in 1s, 2s and 10s and begin to count in 5s. They will work on practical problem solving activities involving equal sets or groups.



## Year 2

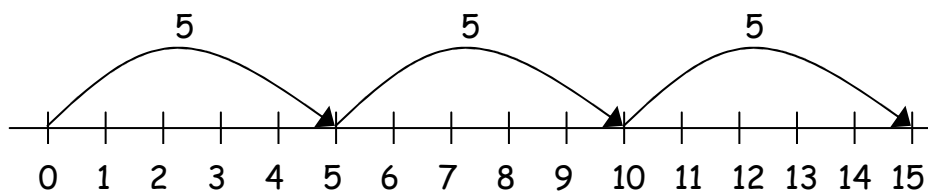
Pupils will develop their understanding of multiplication and use jottings to support calculation:

### ✓ Repeated addition

3 times 5 is  $5 + 5 + 5 = 15$  or 3 lots of 5 or  $5 \times 3$

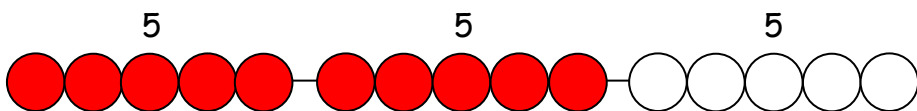
Repeated addition can be shown easily on a number line:

$$5 \times 3 = 5 + 5 + 5$$



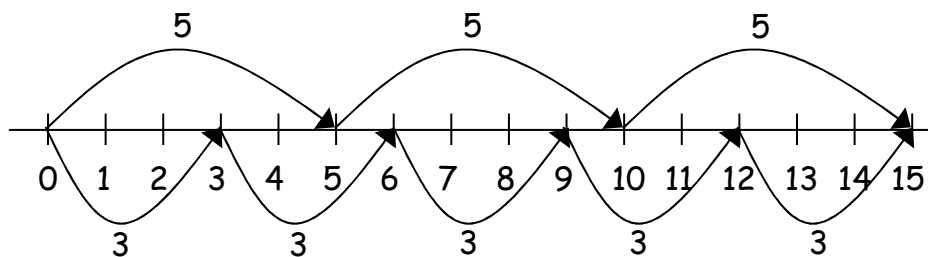
and on a bead bar:

$$5 \times 3 = 5 + 5 + 5$$



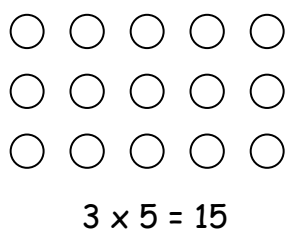
✓ **Commutative**

Pupils should know that  $3 \times 5$  has the same answer as  $5 \times 3$ . This can also be shown on the number line.



✓ **Arrays**

Pupils should be able to model a multiplication calculation using an array. This knowledge will support with the development of the grid method.



$$5 \times 3 = 15$$

$$3 \times 5 = 15$$

Multiplication Facts 0.8.exe

Primary National Strategy

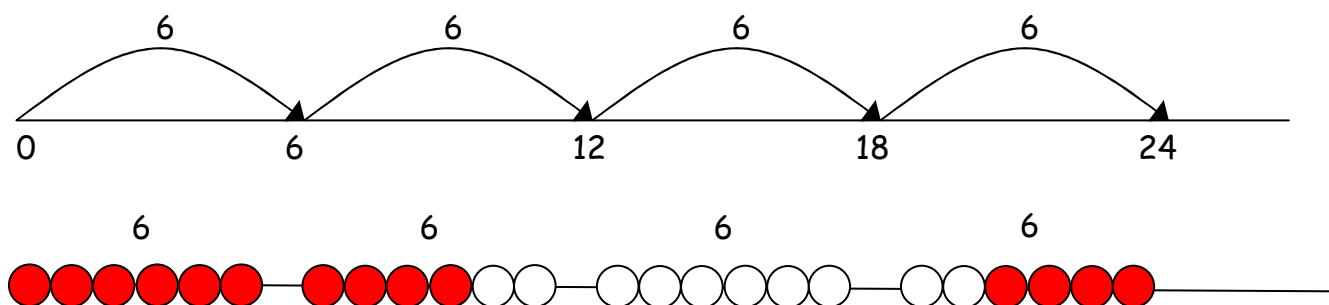
## Year 3

Pupils will continue to use:

### ✓ Repeated addition

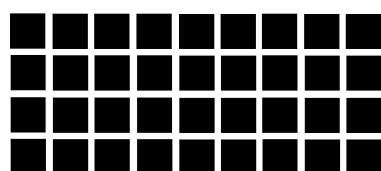
4 times 6 is  $6 + 6 + 6 + 6 = 24$  or 4 lots of 6 or  $6 \times 4$

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



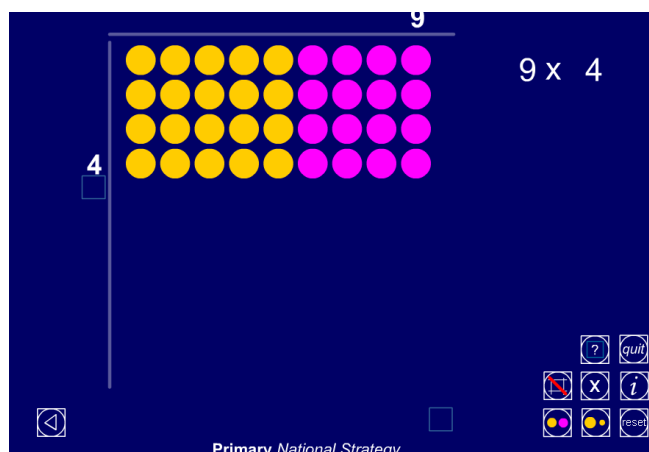
### ✓ Arrays

Children should be able to model a multiplication calculation using an array. This knowledge will support with the development of the grid method.



$$9 \times 4 = 36$$

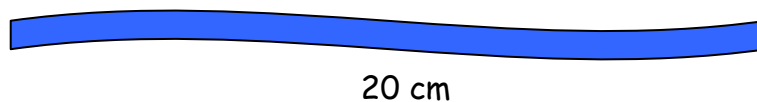
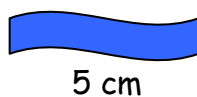
$$9 \times 4 = 36$$



Pupils will also develop an understanding of

### ✓ Scaling

e.g. Find a ribbon that is 4 times as long as the blue ribbon



✓ Using symbols to stand for unknown numbers to complete equations using inverse operations

$\square \times 5 = 20$        $3 \times \triangle = 18$        $\square \times \circ = 32$

✓ Partitioning

$$38 \times 5 = (30 \times 5) + (8 \times 5)$$

$$= 150 + 40$$

$$= 190$$

NNS Section 5 page 47

## Year 4

Pupils will continue to use arrays where appropriate leading into the grid method of multiplication.

$$(6 \times 10) + (6 \times 4)$$

$$60 + 24$$

$$84$$

Multiplication Facts 0.8.exe



## Grid method

### TU x U

(Short multiplication - multiplication by a single digit)

$$23 \times 8$$

Children will approximate first

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

x	20	3	
8	160	24	
			160
			+ 24
			<u>184</u>

$23 \times 8$

x	20	3
8	160	24

	1	6	0
+		2	4
	1	8	4

2 x 10

8 x 2 x 10

8 x 3

$23 \times 8 = 184$ 
 $8 \times 23 = 184$

$184 \div 23 = 8$ 
 $184 \div 8 = 23$

$23 \times 8$

3a	20 times 8 is 160, add the 'carried' 20 is 180	1	2 times 8 is 24
3b	60 from the 260	x	8
4	100 from the 180	1	8
		2	4
2b	'carried' 20 from the 24		2
			4
			2a

# Year 5

## Grid method

### HTU x U

(Short multiplication - multiplication by a single digit)

$$346 \times 9$$

Children will approximate first

$$346 \times 9 \text{ is approximately } 350 \times 10 = 3500$$

x	300	40	6
9	2700	360	54

$$\begin{array}{r}
 2700 \\
 + 360 \\
 + \underline{54} \\
 \hline
 3114
 \end{array}$$

1 1

4

$346 \times 9$

$3 \times 100$   
or  
 $3 \times 10 \times 10$

$4 \times 10$

x	300	40	6
9	2700	360	54

$9 \times 3 \times 100$   
or  
 $9 \times 3 \times 10 \times 10$

$9 \times 4 \times 10$

$9 \times 6$

x	3	4	6
9	27	36	54
	0	0	0
	3	1	1
	3	1	4

$346 \times 9 = 3114$

$9 \times 346 = 3114$

$3114 \div 346 = 9$

$3114 \div 9 = 346$

5

$346 \times 9$

x	3	4	6
9	27	36	54

$40 \text{ times } 9 \text{ is } 360$   
plus the 'carried' 50 is 410

$6 \text{ times } 9 \text{ is } 54$

$300 \text{ times } 9 \text{ is } 2700$ , plus the 'carried' 400 is 3100

$4 \text{ from the } 54$

$3000 \text{ from the } 3100$

'carried' 50 from the 54

'carried' 400 from the 410

### TU x TU

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

$$56 \times 27$$

Children will approximate first

$56 \times 27$  is approximately  $60 \times 30 = 1800$

x	20	7	
50	1000	350	
6	120	42	

1000	
+ 350	
+ 120	
+ 42	
1512	

6

$56 \times 27$

x	20	7	
50	1000	350	
6	120	42	

$5 \times 10 \times 2 \times 10$   
or  
 $5 \times 2 \times 10 \times 10$

$5 \times 10 \times 7$   
or  
 $5 \times 7 \times 10$

$6 \times 2 \times 10$

$6 \times 7$

56	
x 27	
42	
350	
120	
1000	
1512	

$56 \times 27 = 1512$	$27 \times 56 = 1512$
$1512 \div 56 = 27$	$1512 \div 27 = 56$

1

7

$56 \times 27 = (56 \times 20) + (56 \times 7)$

A  $56 \times 20 = (56 \times 10) + (56 \times 10)$   
 $= 560 + 560 = 1120$

B  $56 \times 7 = (50 \times 7) + (6 \times 7)$   
 $= (5 \times 10 \times 7) + (6 \times 7)$   
 $= (5 \times 7 \times 10) + (6 \times 7)$   
 $= 350 + 42 = 392$

$\rightarrow 56 \times 27 = 1120 + 392 = 1512$

8

$56 \times 27$

x	56	
50	350	40
6	392	
1	120	
1	512	

3a  $50 \times 7 = 350$ , plus the 'carried' 40 is 390

4a  $6 \times 20$  is 120

5a  $50 \times 20$  is 1000, plus the 'carried' 100 is 1100

3b  $300$  from the 390

5b  $1000$  from the 1100

1  $6 \times 7 = 42$

2a  $2$  from the 42

2b 'carried' 40 from the 42

4b 'carried' 100 from the 120

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.  $4.9 \times 3$

Pupils will approximate first

$4.9 \times 3$  is approximately  $5 \times 3 = 15$

$$\begin{array}{r}
 \times \quad 4 \quad 0.9 \\
 3 \quad \boxed{12} \quad \boxed{2.7} \\
 \hline
 \phantom{3} \quad \phantom{12} \quad 12 \\
 + \quad \phantom{12} \quad 2.7 \\
 \hline
 14.7
 \end{array}$$

11

$4.9 \times 3$

9 ÷ 10

		4	.	9
	x			3
		2	.	7
		12	.	0
		14	.	7

(3 × 9) ÷ 10

x	4	0.9
3	12	2.7

3 × 4

$4.9 \times 3 = 14.7$      $3 \times 4.9 = 14.7$   
 $14.7 \div 4.9 = 3$      $14.7 \div 3 = 4.9$

12

$4.9 \times 3$

3a 4 times 3 is 12, plus the 'carried' 2 is 14

1 0.9 times 3 is 2.7

3b 4 from the 14

3c 10 from the 14

		4	.	9	
	x			3	
		1	4	.	7
			2		

2b 'carried' 2 from the 2.7

2a 0.7 from the 2.7

### ThHTU × U

(Short multiplication - multiplication by a single digit)

$$4346 \times 8$$

Children will approximate first

$$4346 \times 8 \text{ is approximately } 4346 \times 10 = 43460$$

x	4000	300	40	6
8	32000	2400	320	48

$$\begin{array}{r} 32000 \\ + 2400 \\ + 320 \\ + \underline{48} \\ \hline 34768 \end{array}$$

### HTU × TU

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

$$235 \times 24$$

Children will approximate first

$$235 \times 24 \text{ is approximately } 240 \times 20 = 4800$$

x	200	30	5
20	4000	600	100
4	800	120	20

$$\begin{array}{r} 4000 \\ + 600 \\ + 100 \\ + 800 \\ + 120 \\ + \underline{20} \\ \hline 5640 \\ \hline 1 \end{array}$$

9

$235 \times 24$

$2 \times 10$

$2 \times 100$   
or  
 $2 \times 10 \times 10$

$3 \times 10$

×	200	30	5
20	4000	600	100
4	800	120	20

$2 \times 10 \times 2 \times 10 \times 10$   
or  
 $2 \times 2 \times 10 \times 10 \times 10$

$4 \times 2 \times 100$   
or  
 $4 \times 2 \times 10 \times 10$

$2 \times 10 \times 3 \times 10$   
or  
 $2 \times 3 \times 10 \times 10$

$4 \times 5$

$2 \times 10 \times 5$   
or  
 $2 \times 5 \times 10$

+	2	3	5
×	2	4	
		2	0
	1	2	0
	8	0	0
	1	0	0
	6	0	0
	4	0	0
	5	6	4
	0	0	0

$235 \times 24 = 5640$ 
 $24 \times 235 = 5640$

$5640 \div 235 = 24$ 
 $5640 \div 24 = 235$

10

$235 \times 24$

×	2	3	5
	2	4	
	9	4	0
	1	2	
	4	7	0
	1	2	
	5	6	4
	0	0	0

4 200 times 4 is 800, plus the 'carried' 100 is 900

3a 30 times 4 is 120, plus the 'carried' 20 is 140

1 5 times 5 is 25

2a 0 from the 20

5a 5 times 20 is 100

6 30 times 20 is 600, plus the 'carried' 100 is 700

2b 20 'carried' from the 20

7 200 times 20 is 4000

3b 100 carried from the 140

5b 100 carried from the 100

*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:

$5.82 \times 3$

Children will approximate first

$5.82 \times 3$  is approximately  $6 \times 3 = 18$

x	5	0.8	0.02
3	15	2.4	0.06

$$\begin{array}{r} 15 \\ + 2.4 \\ + 0.06 \\ \hline 17.46 \end{array}$$

5.82 × 3

13

8 ÷ 10

2 ÷ 100  
or  
2 ÷ 10 ÷ 10

x	5	0.8	0.02
3	15	2.4	0.06

3 × 5

(3 × 8) ÷ 10

(3 × 2) ÷ 100  
or  
(3 × 2) ÷ 10 ÷ 10

	5	.	8	2	
x				3	
	0	.	0	6	
	2	.	4	0	
	1	5	.	0	0
	1	7	.	4	6

5.82 × 3 = 17.46

3 × 5.82 = 17.46

17.46 ÷ 5.82 = 3

17.46 ÷ 3 = 5.82

By the end of year 6, children will have a range of calculation methods, mental and written. Selection will depend upon the numbers involved.

Pupils should not be made to go onto the next stage if:

- 1) they are not ready.
- 2) they are not confident.

Pupils should be encouraged to approximate their answers before calculating.

Pupils should be encouraged to consider if a mental calculation would be appropriate before using written methods.

**A COMPLETE SET OF WRITTEN METHODS POSTERS FOR THE FOUR RULES ARE  
AVAILABLE FROM THE LEA**