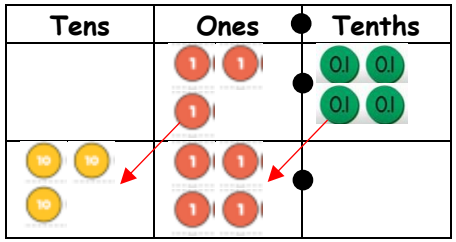
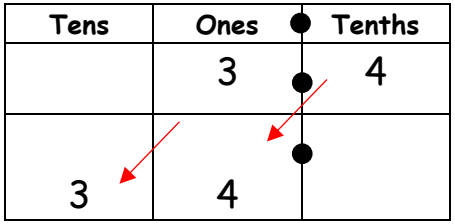
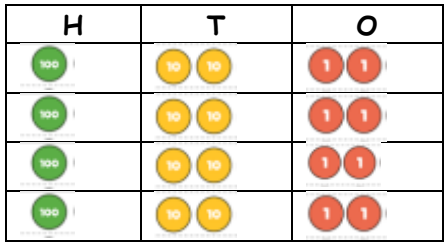
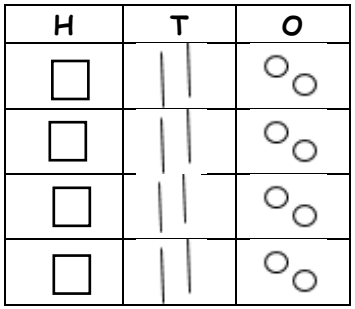
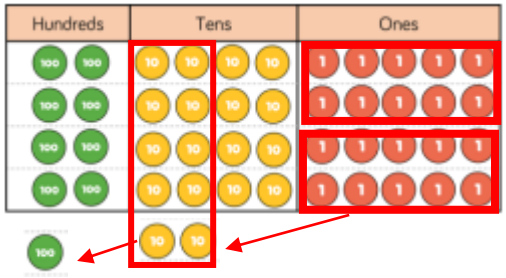
YEAR 4	Multiplication (up to 12 x 12)	
Vocabulary: repeated addition, product, lots of, groups of, times, as much, factor, multiple, prime; multiplicand x multiplier = product;		
Concrete	**Pictorial**	**Abstract**
X10, X100 and x1000: (see Year 3 for multiplying whole numbers by 10 and 100) **Place value counters:** 3.4 x 10  Also x 1000 Understand that x 1000 = 10 x 10 x 10	**X10, X100 and x1000:** 3.4 x 10  	**X10, X100 and x1000:** No written method – leads to a mental method.
2 digit and 3 digit numbers x 1 digit: **(no exchanging)** (for 2 digit x 1 digit see year 3) 122 x 4 = 488  	**2 digit and 3 digit numbers x 1 digit:** **(no exchanging)** (for 2 digit x 1 digit see year 3) 122 x 4 = 488  	Written – leading to a mental method. **2 digit and 3 digit numbers x 1 digit:** **(no exchanging)** (for 2 digit x 1 digit see year 3) 122 x 4 = 488 100 x 4 = **400** 20 x 4 = **80** 2 x 4 = **8** **400 + 80 + 8 = 488**

2 digit and 3 digit numbers x 1 digit: (exchanging) (for 2 digit x 1 digit see year 3)

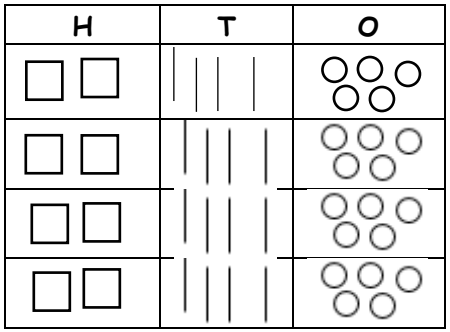
245 x 4 = 980



9 hundreds 8 tens 0 ones

2 digit and 3 digit numbers x 1 digit: (exchanging) (for 2 digit x 1 digit see year 3)

245 x 4 = 980



2 digit and 3 digit numbers x 1 digit: (exchanging) (for 2 digit x 1 digit see year 3)

245 x 4 =

Expanded leading to **Compacted**

H	T	O	
	2	4	5
X			4
		2	0 (5 x 4)
	1	6	**0** (40 x 4)
+	8	**0**	**0** (200 x 4)
	9	8	0

H	T	O
	2	4	5
x			4
	9	8	0
	1	2	

Alternative grid method (if needed)

127 x 6 = 762

x	100	20	7
6	600	120	42

600 + 120 + 42 = 762 (add the partial products)

Mental Methods

Number facts:

Count in multiples of 6, 7, 9, 25 and 1000

Instantly recall the multiplication tables up to 12 x 12.

Multiply mentally using place value, known and derived facts, including: multiplying by 0 and 1

X10, x 100 and x1000:

10 x 5 = 50

10 x 34 = 340

Doubling:

Derive doubles of multiples of 50 to 1000 and multiples of 1000

35 x 8 (double, double and double again)

Double 35 is 70, double 70 is 140, double 140 is 280.

Using known facts and place value:

Multiply by 10 and then halve to x 5:

Using factors

Recognise factor pairs.

15 x **6** = 15 x **3 x 2**

15 x 3= 45

45 x 2 = 90

Continue to understand the inverse relationship between multiplication and division

Write the related number sentences

100 x 3 = 300 1000 x 5 = 5000 **<u>Partitioning: (using distributive law)</u>** 53 x 6 50 x 6 = **300** 3 x 6 = **18** **300 + 18 = 318**	73 x 10 = 730 So 73 x 5 = Half of 730 = **365** 24 x 10 = 240 So 24 x 9 = **216** (by subtracting 24 from 240) 800 x 6 8 x 6 = 48 So 800 x 6 = **4800**	6 x 7 = 42 7 x 6 = 42 42 ÷ 7 = 6 42 ÷ 6 = 7 Use this knowledge to solve missing number problems involving multiplication. 3 x ___ = 15 25 + 10 = 5 x ___ 15 < ___ x 2 ___ x ___ > 20