Templars Primary School Knowledge Organiser

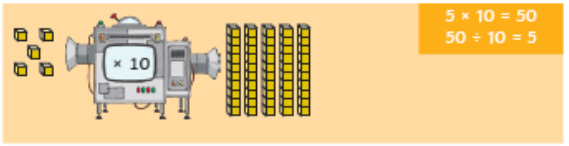
Year 4 Multiplication and Division

Key Vocabulary

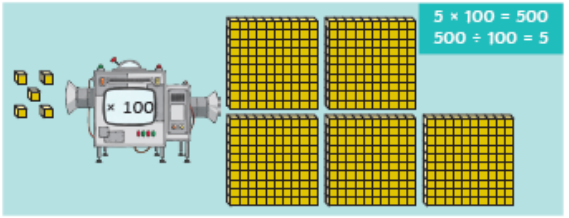
- multiply
- groups of
- lots of
- times
- divide
- share
- remainder
- factor
- multiple
- product

Multiply and Divide by 1, 10 and 100

When we multiply a number by 1, the number stays the same.



When we multiply a number by 10, each digit gets 10 times bigger and moves up to the next place value column



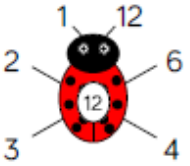
When we multiply a number by 100, each digit gets 100 times bigger and moves up two place value columns.

Factor pairs

The factors of 20 are 1, 2, 4, 5, 10 and 20.

The factor pairs are:

1 and 20	2 and 10	4 and 5



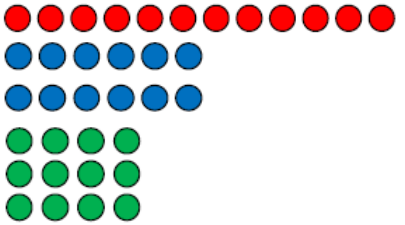
Factor bug for 12

1 x 12

2 x 6

3 x 4

Factor pairs using counters

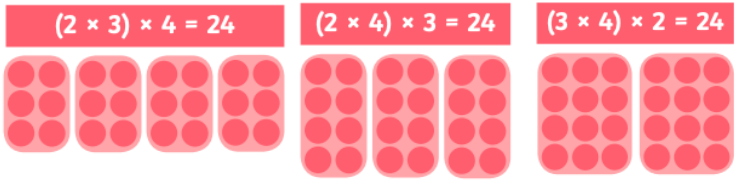


Multiplication and Division Facts

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

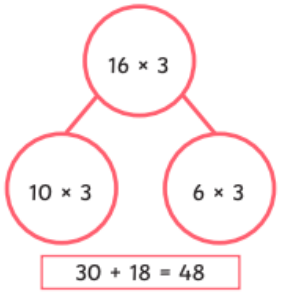
Multiplying 3 numbers

When **multiplying 3 numbers,** it doesn't matter how numbers are grouped when multiplying. 3 x 2 x 4 = 24

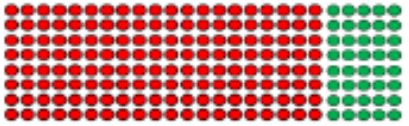


Efficient multiplication

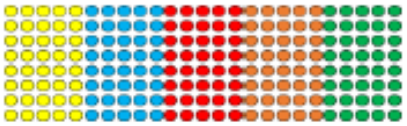
We can develop our mental multiplication skills by exploring different ways to multiply. We can **partition** two-digit numbers into tens and ones or into **factor pairs** in order to multiply one and two digit numbers. These methods can be used to make multiplication more flexible and efficient.



25 x 8
20 x 8 + 5 x 8 = 160 + 40 = 200



25 x 8
5 x 5 x 8 = 5 x 40 = 200



Written method for multiplication

Th	H	T	O	
	5	4	3	
×			4	
		1	2	(4 × 3)
	1	6	0	(4 × 40)
2	0	0	0	(4 × 500)
2	1	7	2	

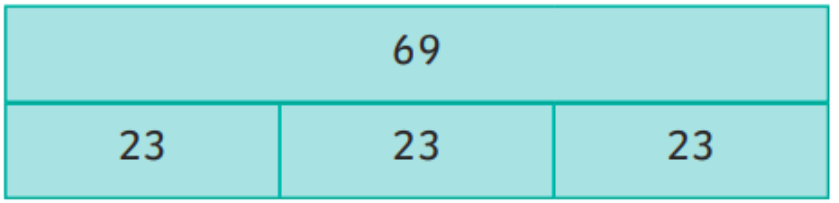
Th	H	T	O
	5	4	3
×			4
2	1	7	2
	1	1	

Remember to move any regrouped numbers into the next column. After the next multiplication, add the regrouped number to the answer.

Written method for division

69 ÷ 3 = 23

$$3\overline{)69} \quad 23$$



Correspondence problems / Integer scaling problems

An ice-cream van has 4 flavours of ice-cream and 2 choices of toppings.

Ice-cream flavour	Toppings
Vanilla Chocolate Strawberry Banana	Sauce Flake

How many different combinations of ice-cream and toppings can be made?

Combinations
VS VF
CS CF
SS SF
BS BF

4 x 2 = 8
There are 8 combinations

75g

75g × 2 = 150g