Addition

Continue bridging (10, extend to 100) and partitioning from year 2 extending to larger numbers

Partitioning

240 + 110
= 200 + 100 + 40 + 10
= 300 + 50
= 350

Unitising

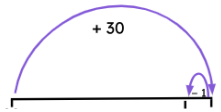
240 + 110
= 24 tens + 11 tens
= 35 tens
= 350

Redistribution (move 1 addend to another)

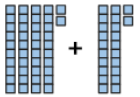
320 + 196 =
−4 ↓ ↓ +4
316 + 200 = 516

Compensation (**change one number to make the calculation easier**, then **adjust back** to keep the total correct.)

22 + 29 = 51
+1 ↓ ↑ −1
22 + 30 = 52



Column addition (3-digit numbers)



One **addend** is written below the other.

The equals sign shows it is an **equation**.

The **sum** appears within the equals sign.

```
  4 2
+ 2 2
-----
  6 4
```

223 + 342 = 565

	100s	10s	1s
	2	2	3
+	3	4	2
	5	6	5

Subtraction

Partitioning

680 − 410 = ?
400 10

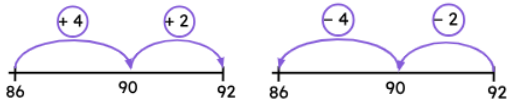
Unitising

680 − 540 = 140
68 tens − 54 tens = 14 tens
50 4

Bridging

340 − 190 = 150
100 90
340 − 100 − 90 = ?
340 − 100 − 40 − 50 = 150

Difference (counting on or counting back) 92-86= 6

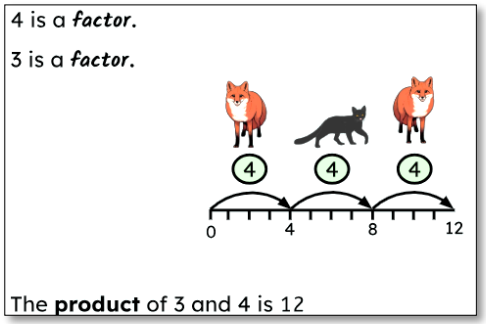


Column subtraction (3-digit numbers)

	100s	10s	1s
	~~4~~ 3	~~0~~ 9	14
−	2	5	7
	1	4	7

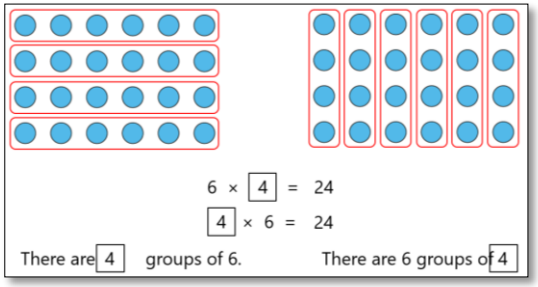
Multiplication

Skip counting



Arrays

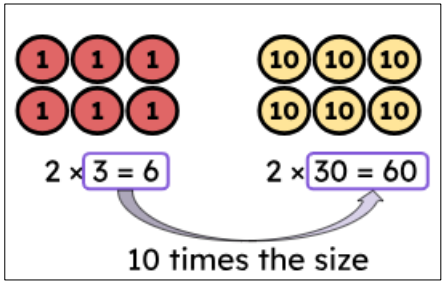
The **commutative** law states that you can write the values of a calculation in a different order without changing the solution; the result is still the same. It applies to addition and multiplication.



Spotting patterns

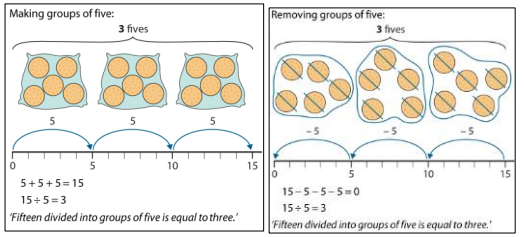
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Scaling known multiplication facts

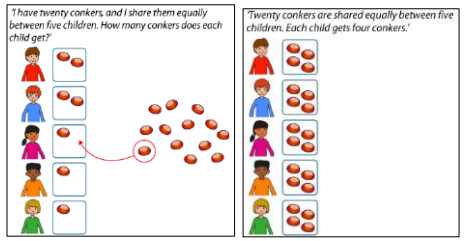


Division

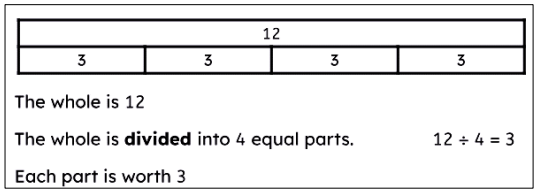
Grouping (quotative) divided into groups of X:

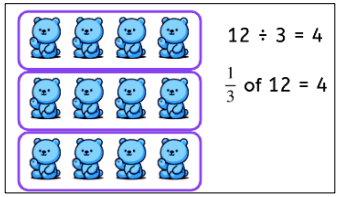


Sharing (partitive) divided between X groups:



Using known multiplication facts:





If I know ...

4 × 2 = 8

2 × 4 = 8

Then I know ...

8 ÷ 2 = 4

8 ÷ 4 = 2

