Progression in Calculation Workshop

Year R, 1 and 2

Aims

- To increase understanding of how we teach maths at school.

- To improve confidence in applying the methods we use at school.

Good practice in Maths

- Children need to learn maths in a real life context.

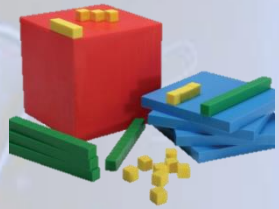
5 x 3 = 15
There are 5 fields with 3 sheep in each.
How many sheep are there in total?

- Children need to be able to explain how they have calculated something using a method that suits them.

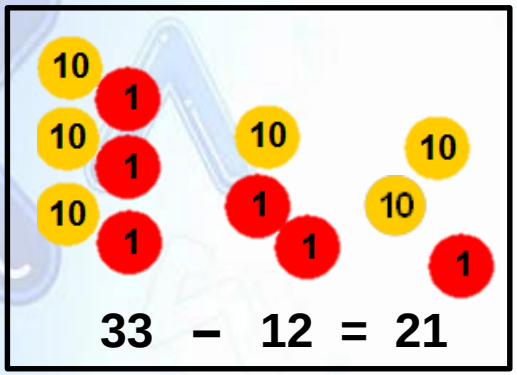
- Written calculations, are taught only when the children are ready.

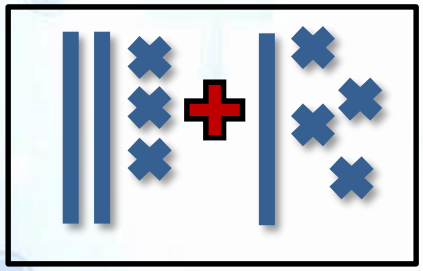
Structures of Learning

Concrete



Pictorial





Abstract

24 – 8 = 16

15 + 7 = 22

Four Operations

Addition

+

Multiplication

x

Subtraction

-

Division

÷

Addition

+

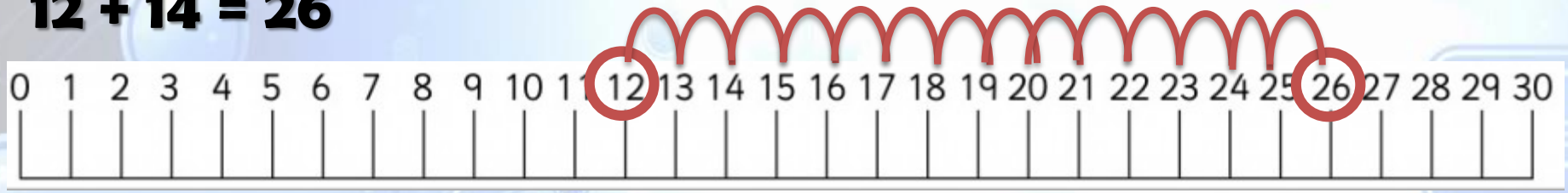
Addition strategies we teach:

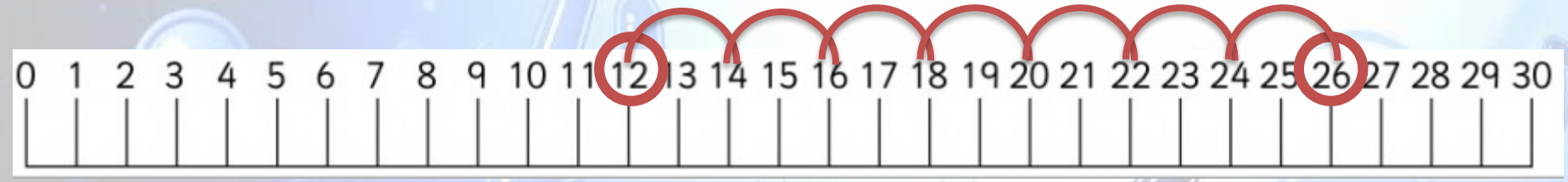
Counting objects

5 + 3 = 8

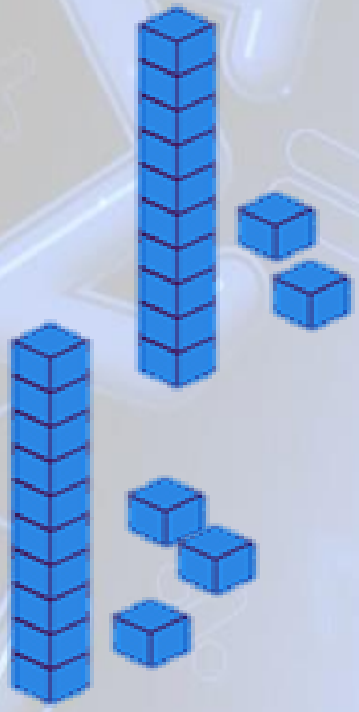
Number line

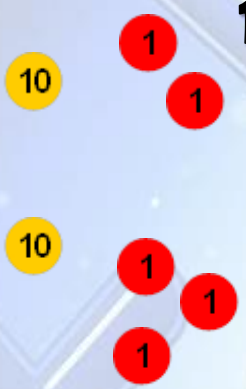
12 + 14 = 26





Partitioning
Using parts of a number
12 + 13 = 25





12 = 10 + 2

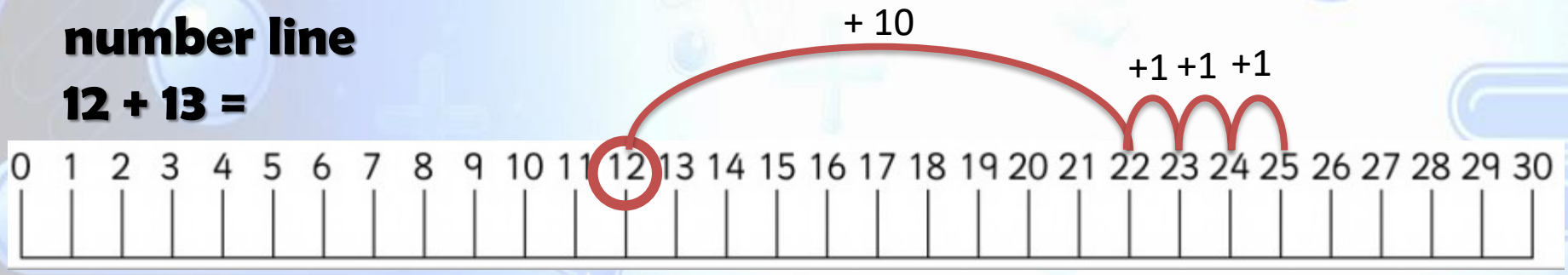
13 = 10 + 3

10 + 10 = 20

2 + 3 = 5

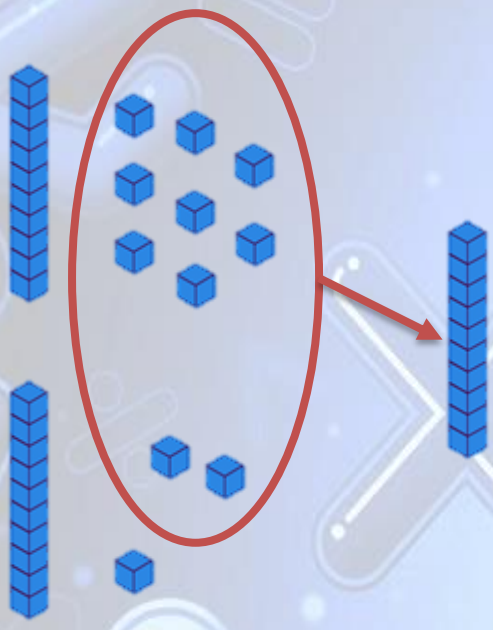
20 + 5 = 25

Partitioning with a number line
12 + 13 =



Partitioning
Using parts of a number

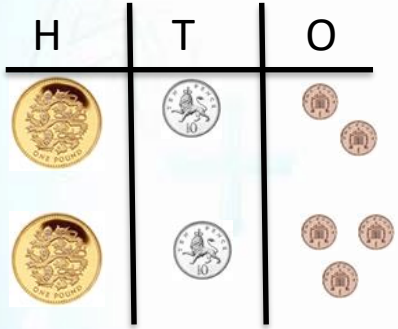
18 + 13 = 31



18 = 10 + 8

13 = 10 + 3

112 + 113 = 225



10 + 10 = 20

8 + 3 = 11

20 + 11 = 31

Subtraction

-

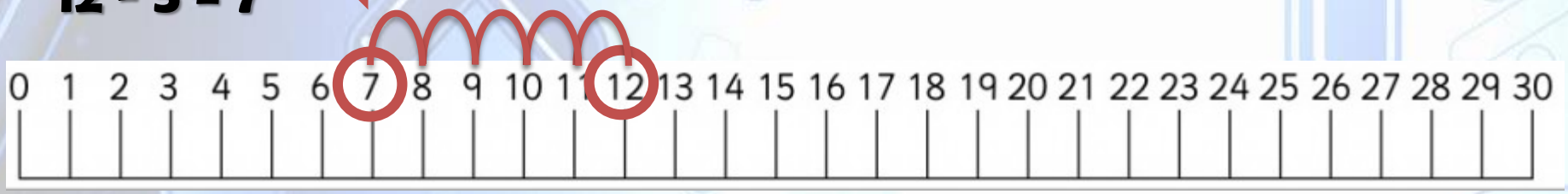
Subtraction strategies we teach:

Taking objects

8 - 3 = 5

Number line – Counting back

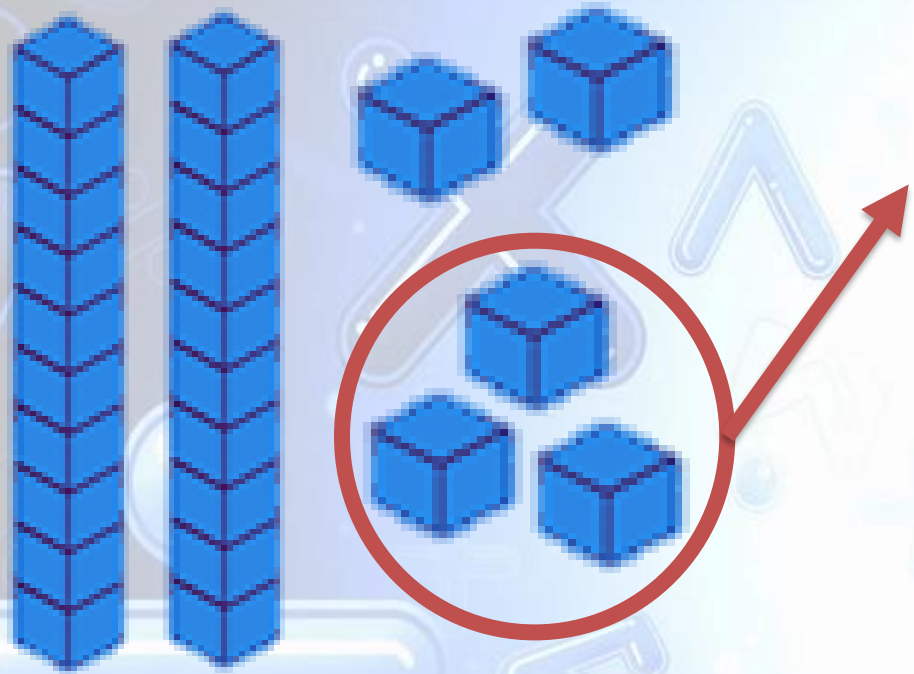
12 - 5 = 7



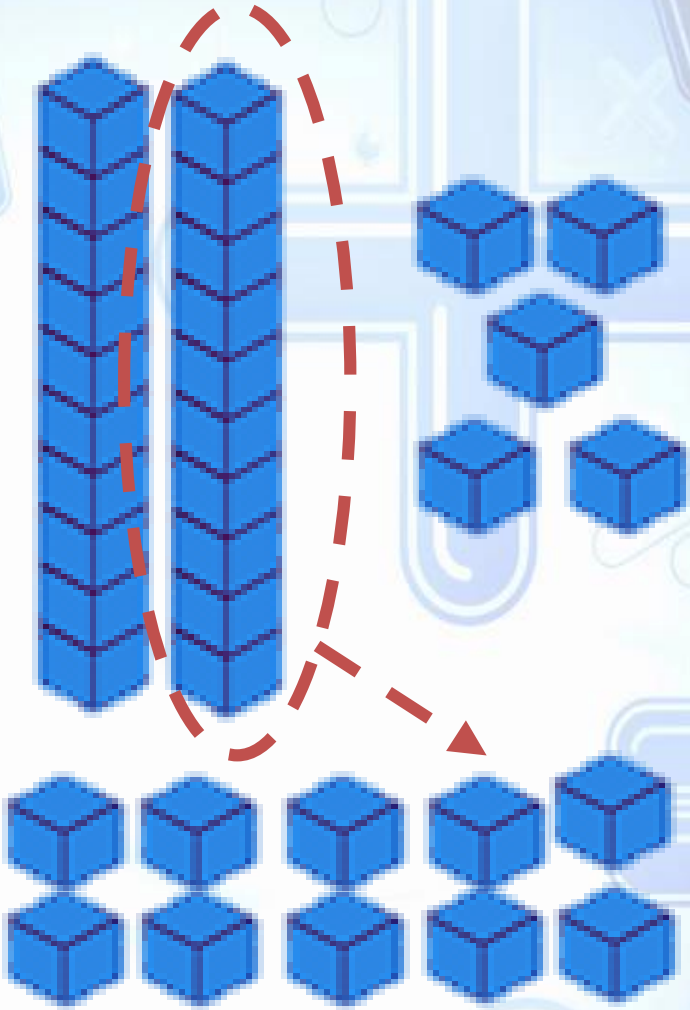
Number line – Counting on

12 - 5 = 7

25 − 3 = 22



25 − 8 = 17



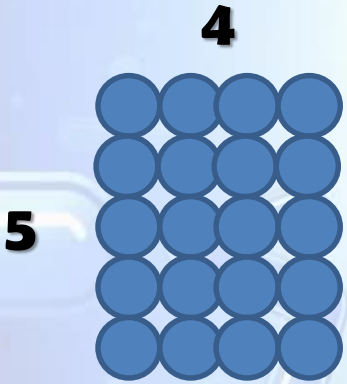
Multiplication

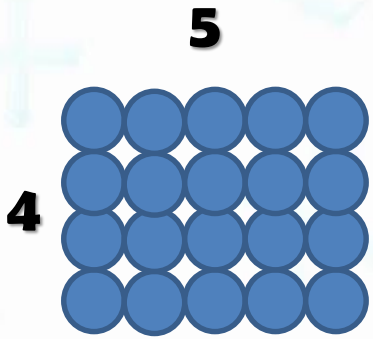
x

Multiplication strategies we teach:

4 groups of 5

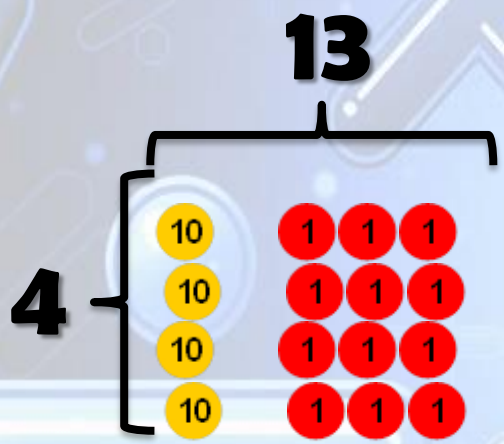
Array





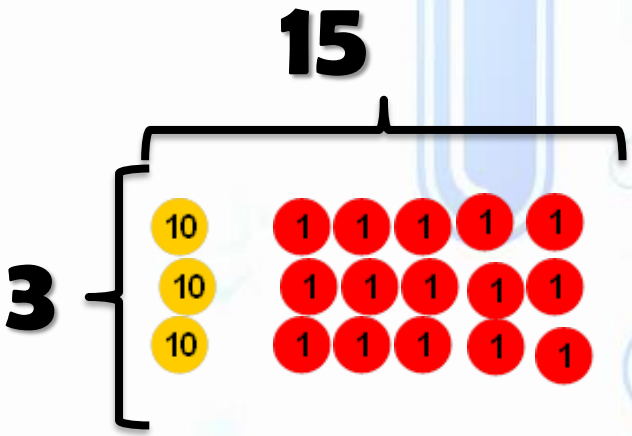
Array to Grid Method

13 x 4 = 52



40 + 12 = 52

15 x 3 = 45



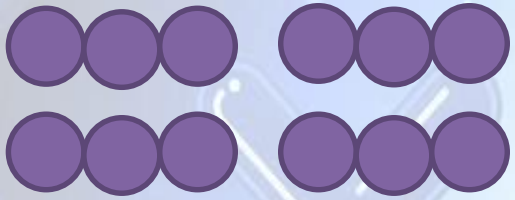
30 + 15 = 45

Division

÷

Dividing strategies we teach:

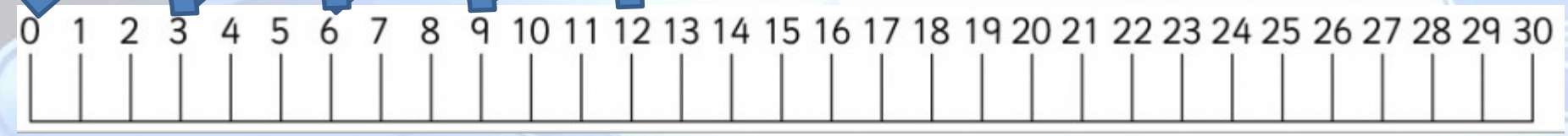
12 split into equal groups of 3



12 ÷ 3 = 4

3 3 3 3

12 ÷ 3 = 4



Other things that will help:

- Read and write numbers as words (thirty six)
- Equals sign does not have to go at the end: 24 = 12 + 12
- Use the word ‘calculation’.