Calculation Meeting

Year 1

+ − x ÷

How do we solve problems?

Addition

- add
- more
- plus
- make
- sum
- total
- altogether



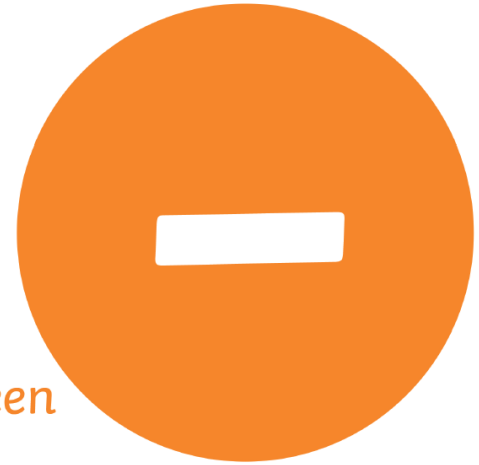
Multiplication

- lots of
- times
- multiply
- groups of
- product
- multiplied by
- multiple of
- repeated addition
- array



Subtraction

- subtract
- minus
- leave
- less
- take away
- difference between



Division

- divide
- divided by
- divided into
- share
- share equally
- equal groups of



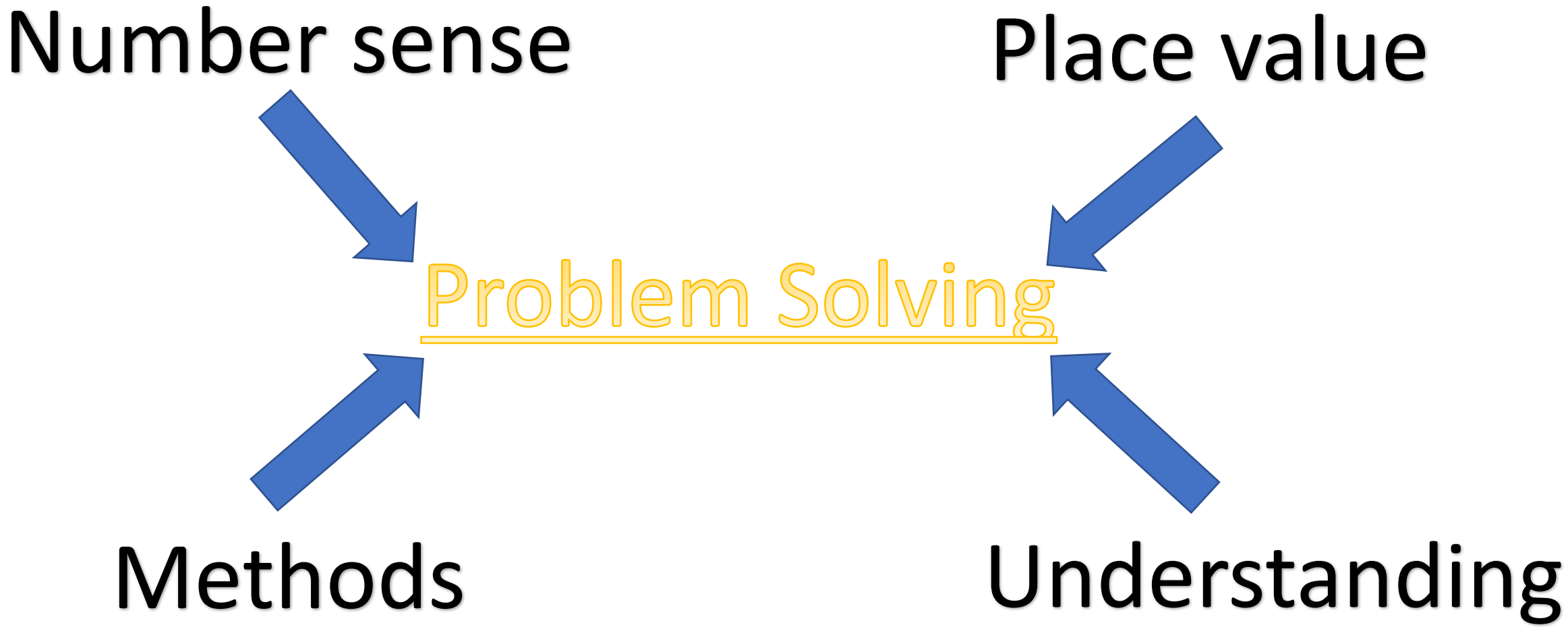
Year 1 maths curriculum

The national curriculum is broken down into the following areas of maths:

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measurement
- Shape
- Position and direction

The road to problem solving

Each year we want to build on the children's ability to solve mathematical problems and reason mathematically. In order to do this, these 4 areas are hugely important.



Number Sense

Number sense is a child's ability to understand numbers and play with them flexibly: knowing what a number means, how big it is, and how it relates to other numbers.

In a classroom you might see it when children:

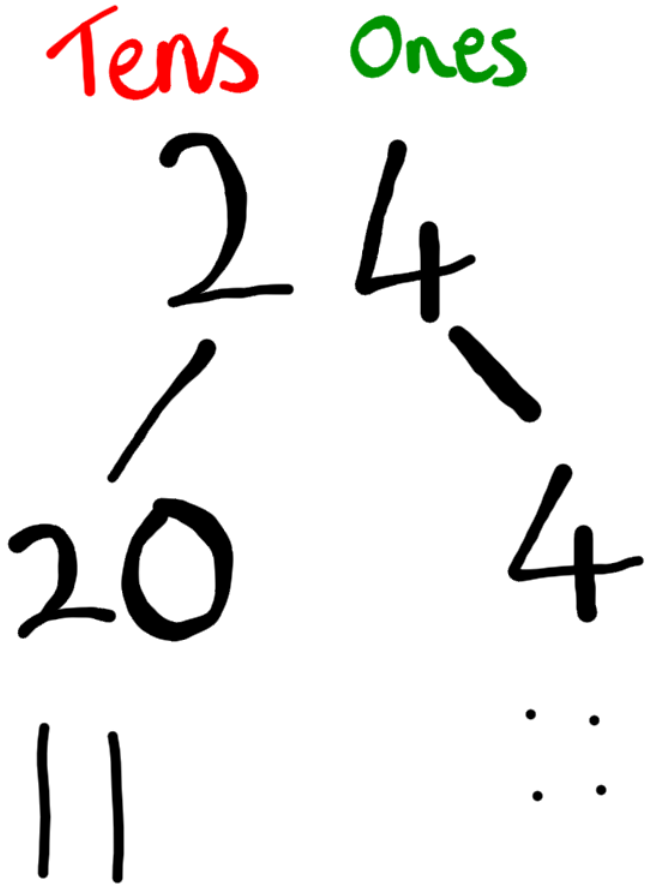
- Recognise amounts without counting (subitising)
- Know how numbers relate, for example that 7 is one more than 6, two less than 9, and close to 10.
- Break numbers apart in different ways, such as seeing 8 as 5 and 3, 4 and 4, or double 4.
- Estimate and check, for example knowing that 19 + 21 should be about 40.
- Choose sensible strategies, such as working out 9 + 6 by thinking "10 + 6, then take 1 away

Think of it like this: A child learning phonics may be able to read a long word (because they know the sounds), but not know what it means. A child can count to 100, but still not know that 60 + 40 is the same as 70 + 30.

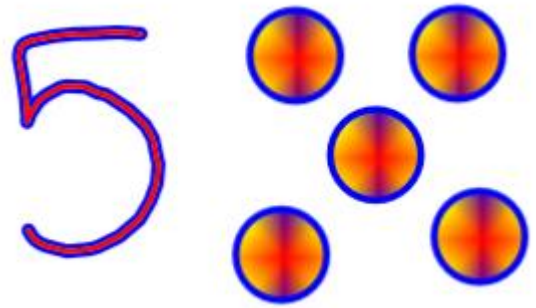
Place Value

Understanding that each number represents an amount. Especially important when using double and triple digit numbers.

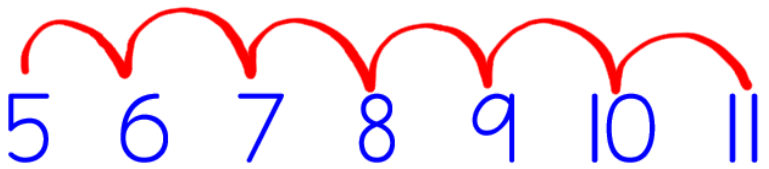
- Understanding how many ones, tens or hundreds are in a number.
- Good place value knowledge will allow children to break down equations and problems into manageable chunks.
- Important skill to understand column method

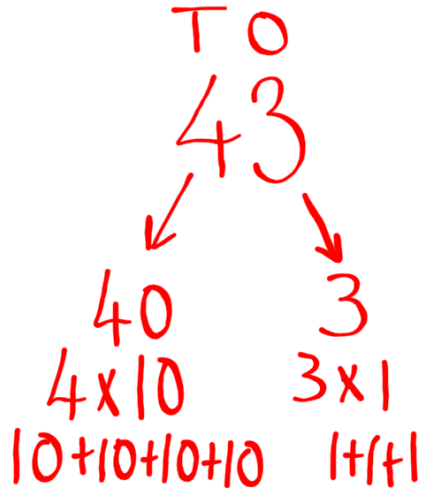


Barriers to learning
What might be getting in the way?

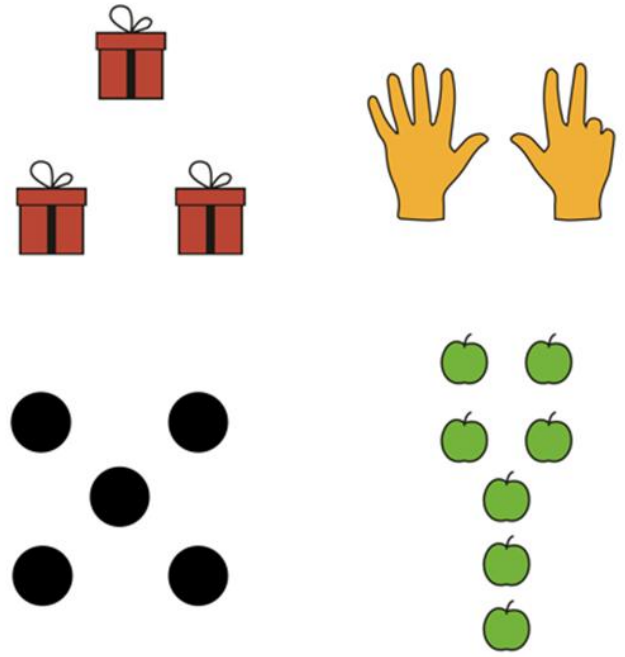


- Understanding what a number is representing
- Counting on/back from a given number
- Knowing 1 more and 1 less
- Knowing 10 more 10 less
- Understanding place value – 100s, 10s and 1s





Some things to practise



- Counting to and from given numbers
- Simple number facts
- Asking how do you know?
- Subitising – knowing without counting

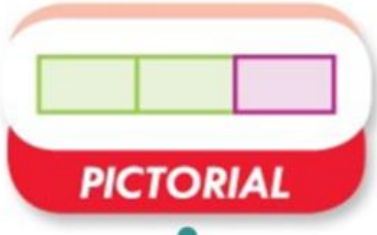
Concrete, pictorial and abstract

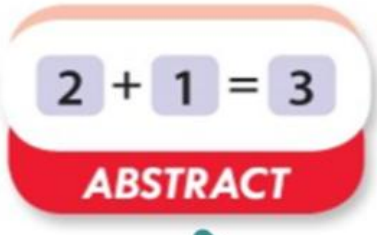












Objects/things to handle

-Cubes

-Pencils

-10s and 1s

A visual representation

-Drawings

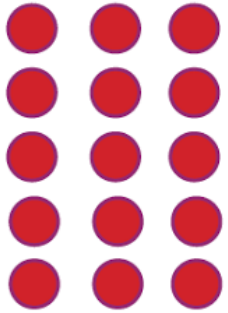
-Bar models

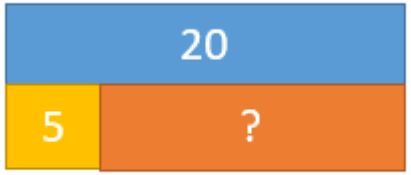
-Arrays

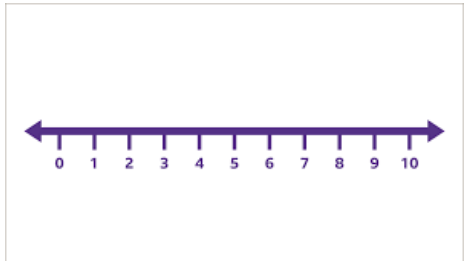
Numbers and symbols

-Equations

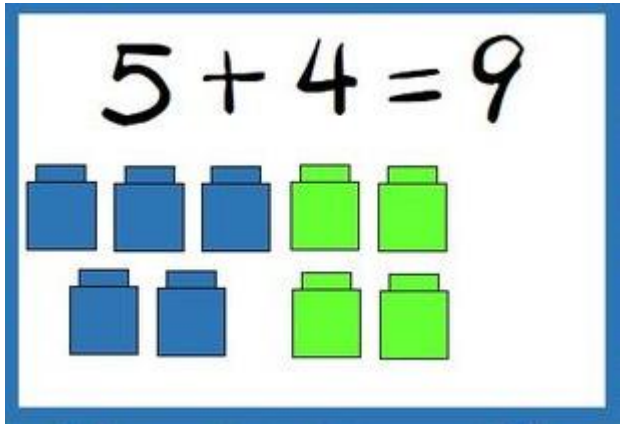
-Operations e.g. + -

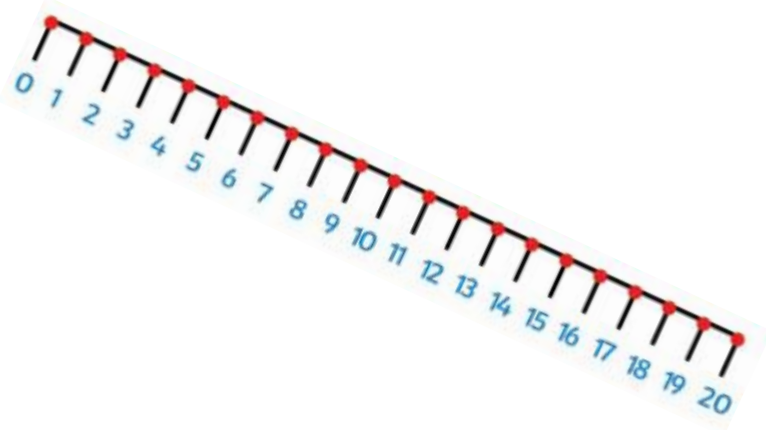






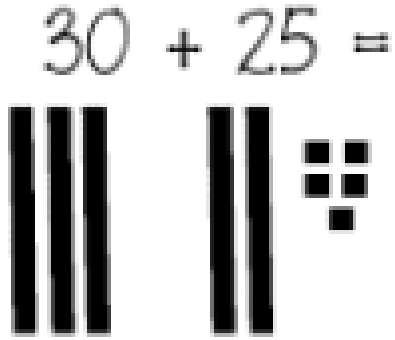
Addition

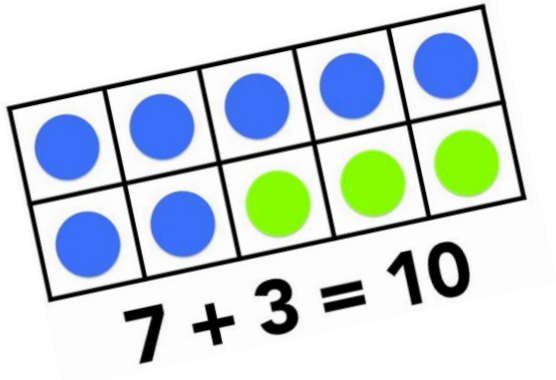


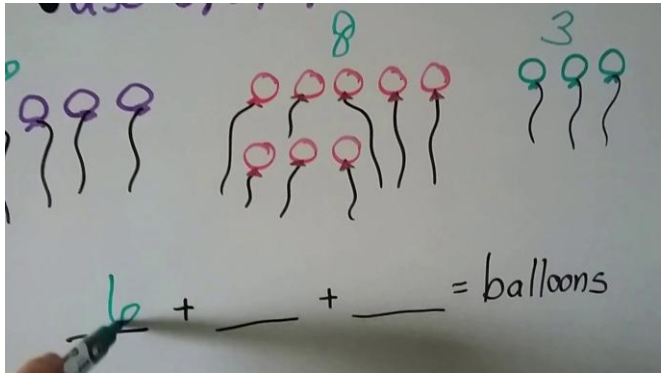


Methods we teach:

- Concretes – Cubes, numicon, bead strings, rekenreks, 10s and 1s
- First, then, now
- Number lines
- Drawings
- Lines and dots
- 10 frames
- Partitioning – Breaking down
- Counting on



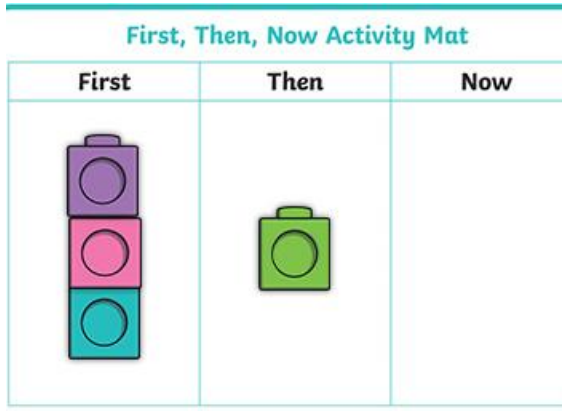


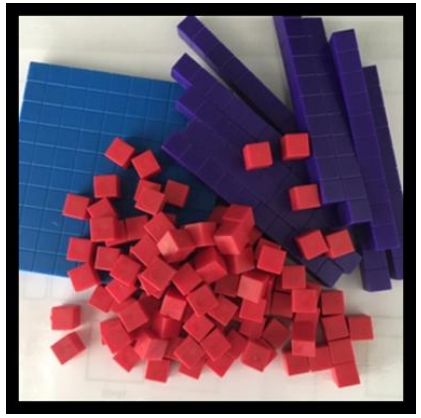


Methods of addition using concrete objects/manipulatives

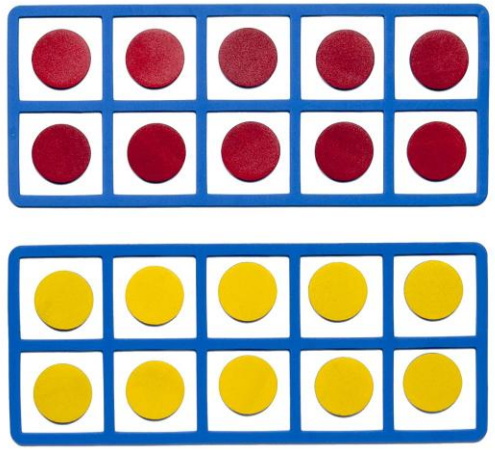
- Cubes, tens and ones, 10 frames, numicon, bead strings, rekenreks, 10s and 1s
- All of these give clear visual representations of numbers

1. Make the greater amount (doesn't have to happen)
2. Add on the second amount
3. Count to find the total







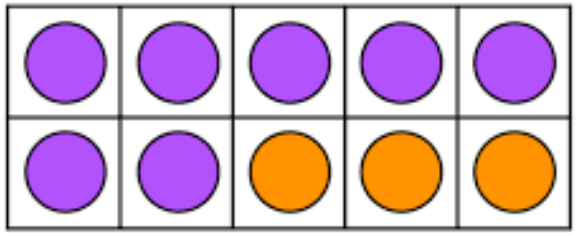


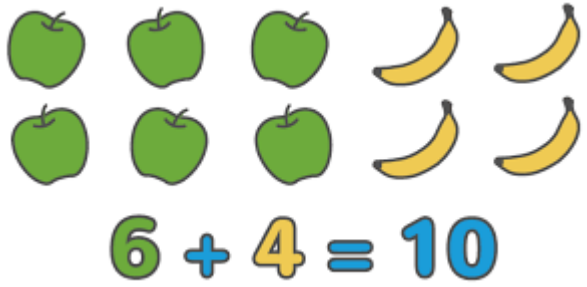


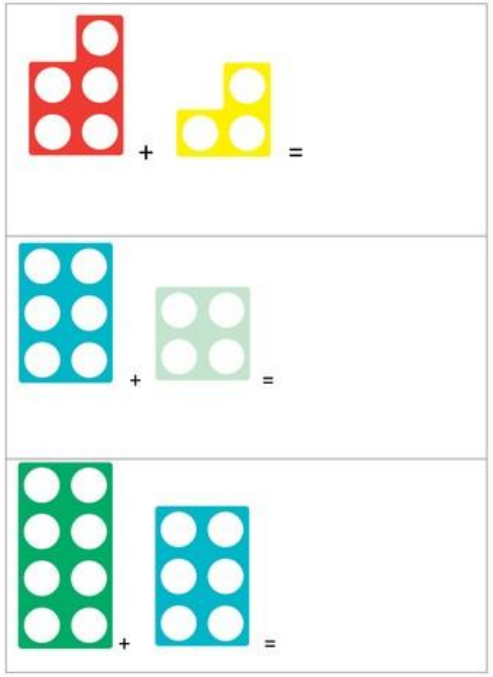
Methods of addition using pictures and drawings

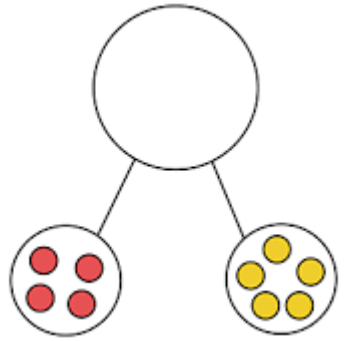
- Pictures of manipulatives or drawings
- Whole, part, part and bar models show how two amounts can create a total

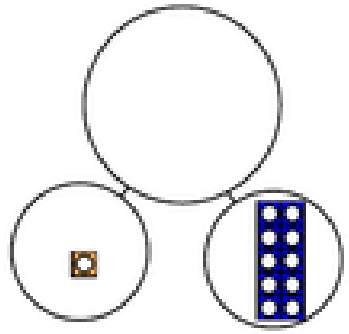






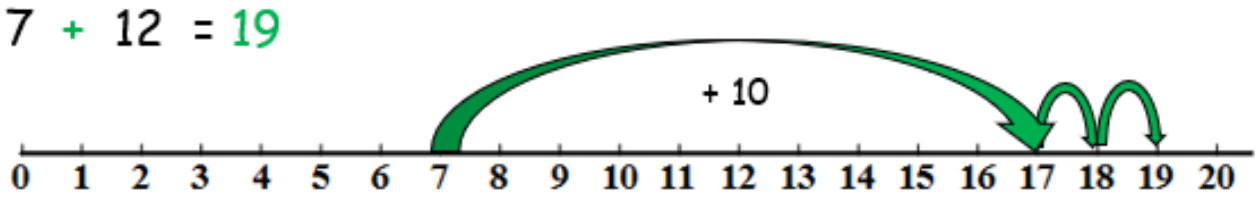


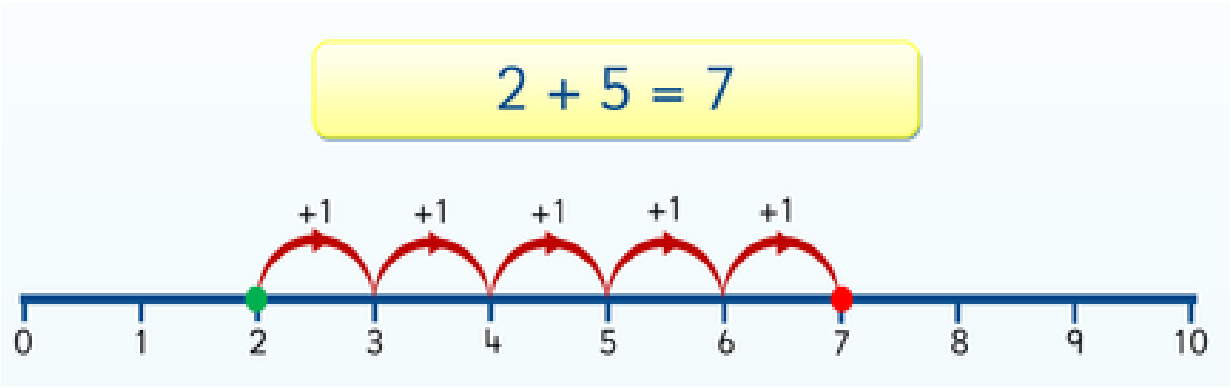




Addition – Number lines

- Start with the greater number (this doesn't need to happen)
- Work out how many jumps you need to do
- Answer is the number you land on
- Extend to jumps of 10 then 1

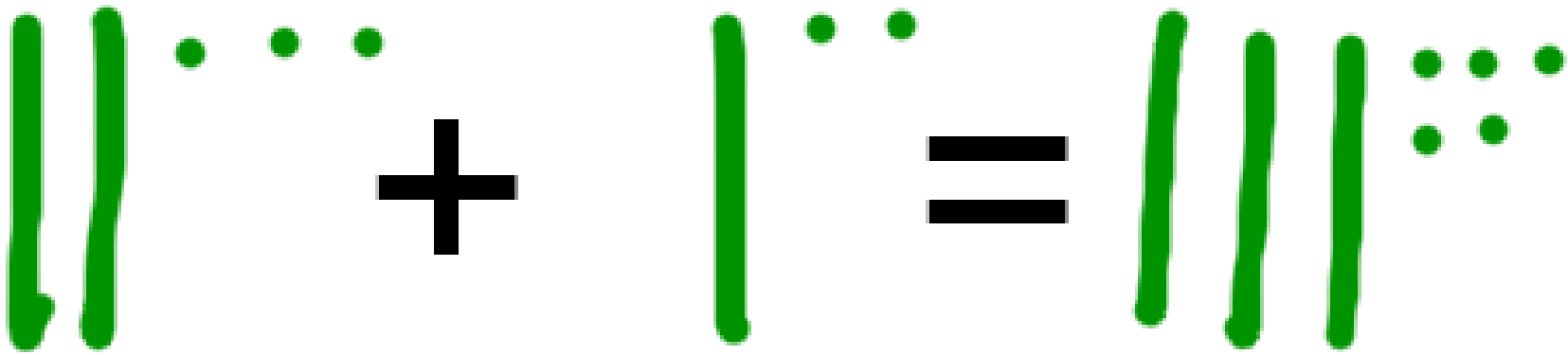




Addition using place value and lines and dots

- Break the number down into 10s and 1s and draw them as lines and dots
- Make the equation easier.
- Common misconception is to count the 10s as a 1 or vice versa.

23+12=



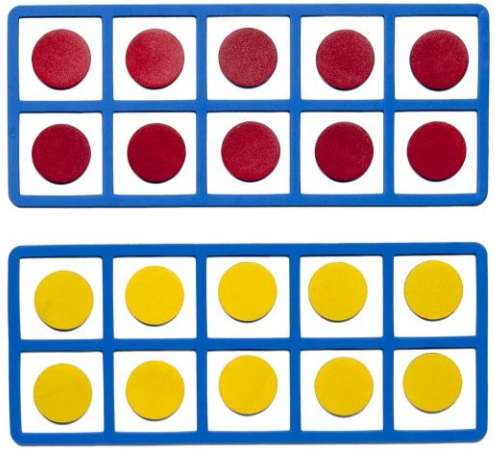
Subtraction

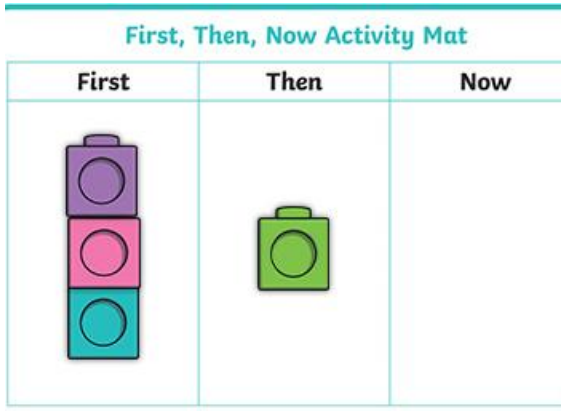
- Similar to addition but backwards.
- Children are taught that subtraction will decrease the value of our amount.
- We have to start with the greatest number or amount
- Key language –subtract, minus, take away, less than, fewer

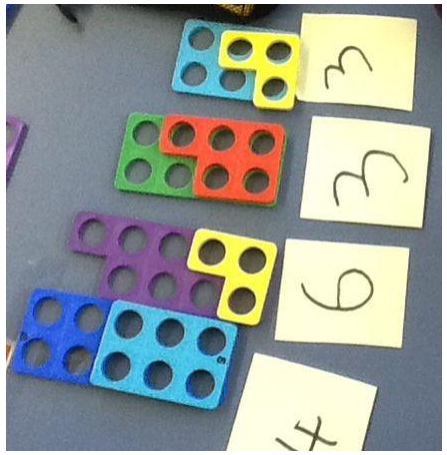
Methods of subtraction using concrete objects/manipulatives

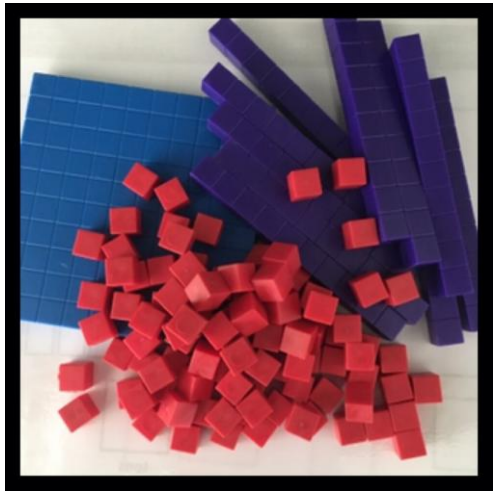
- Cubes, tens and ones, 10 frames, numicon, bead strings, rekenreks

1. Make the greater amount
2. Physically take away the other amount
3. Count to find the total





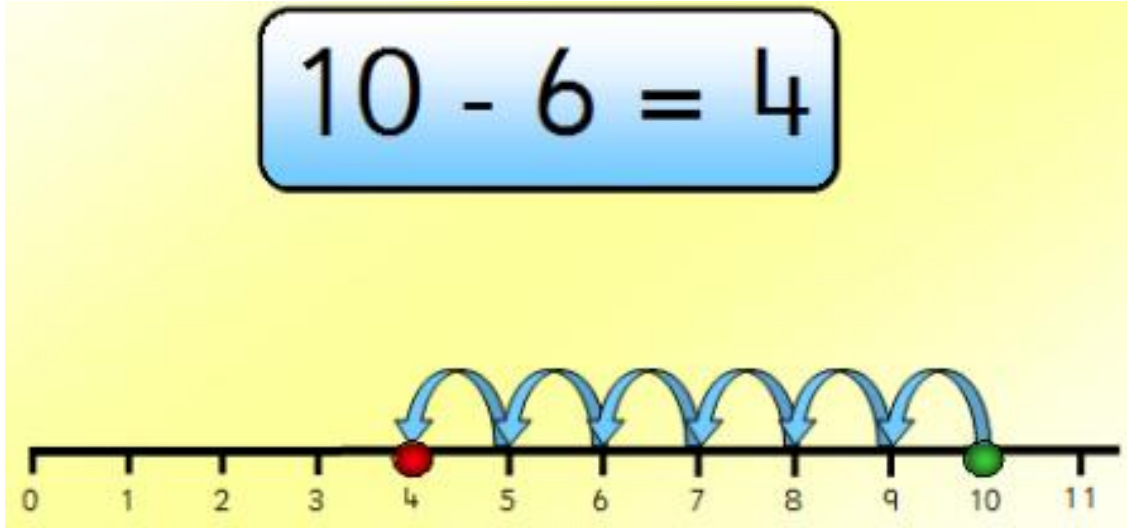


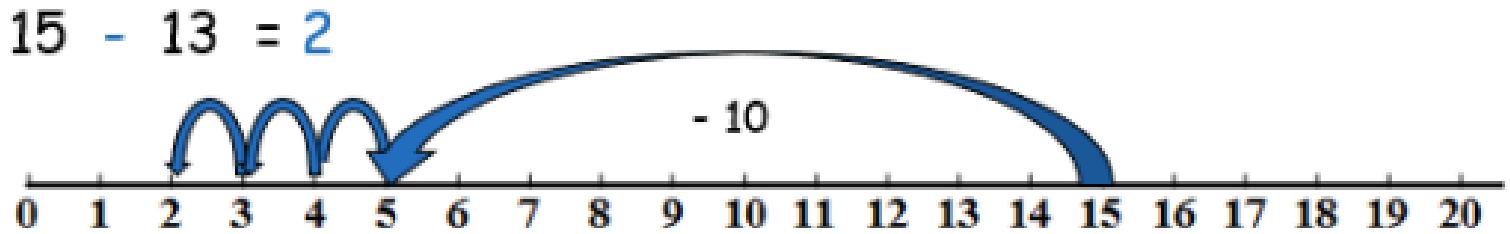




Subtraction with number lines

- Start from greatest number
- Work out how many jumps backwards you will be doing
- Do your jumps
- The answer is the number you land on.

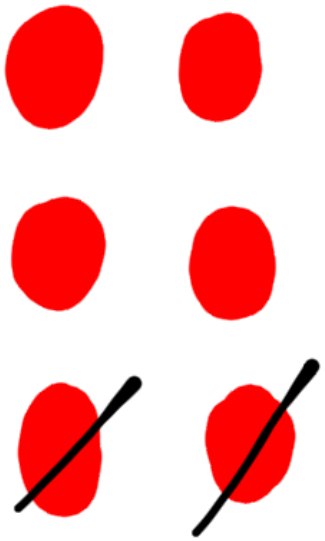


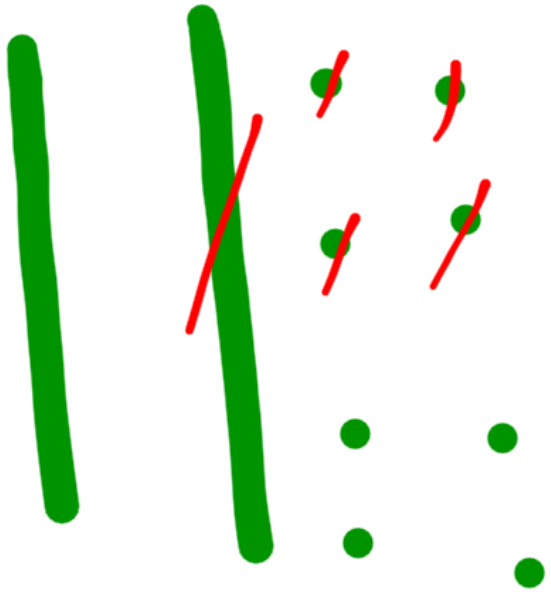


Subtraction using drawings and lines and dots

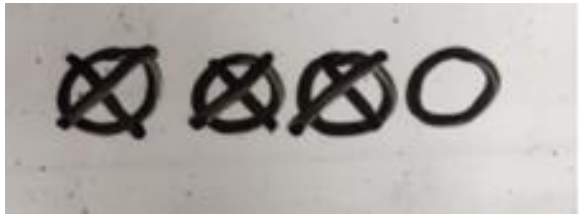
- Draw the total
- Cross out how many are being taken away
- Count what is left

6 - 2 = 4





28 - 14 = 14



4 – 3 = 1

Subtraction using place value

- Use place value to break down the equation and make it easier.
- Take away ones first then 10s – Or the other way around depending on which they find best.
- Draw 10s and 1s and cross them out.

26-12=

26-2=24

24-10=14

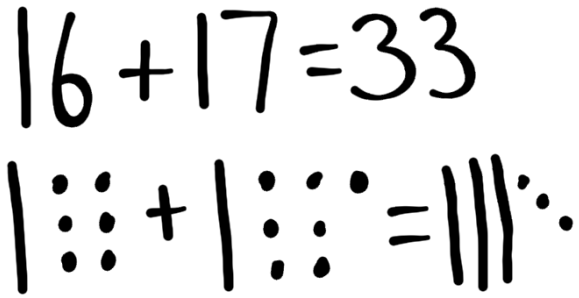


Addition and Subtraction with exchanging/converting (Year 2)

Please note addition and subtraction equations like the following will only be taught when pupils are ready. They are the most challenging equations to solve.

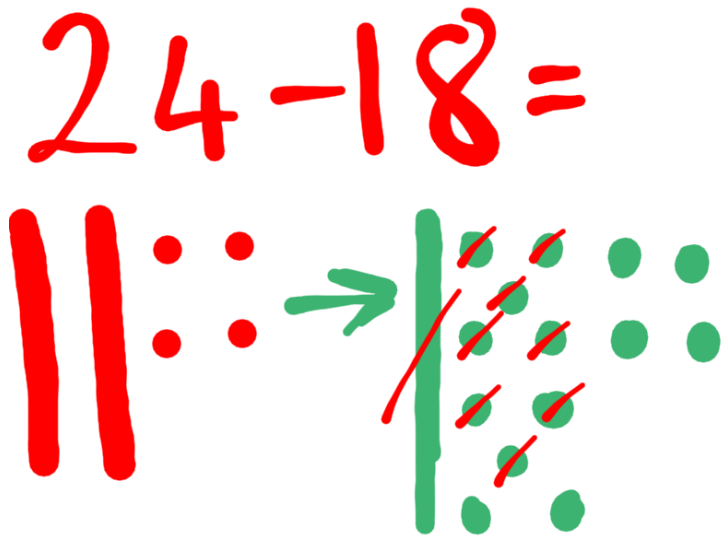
16+17= Lines and dots

24+9= Break it down



14-5= Objects/number line/Counting back

24-18=

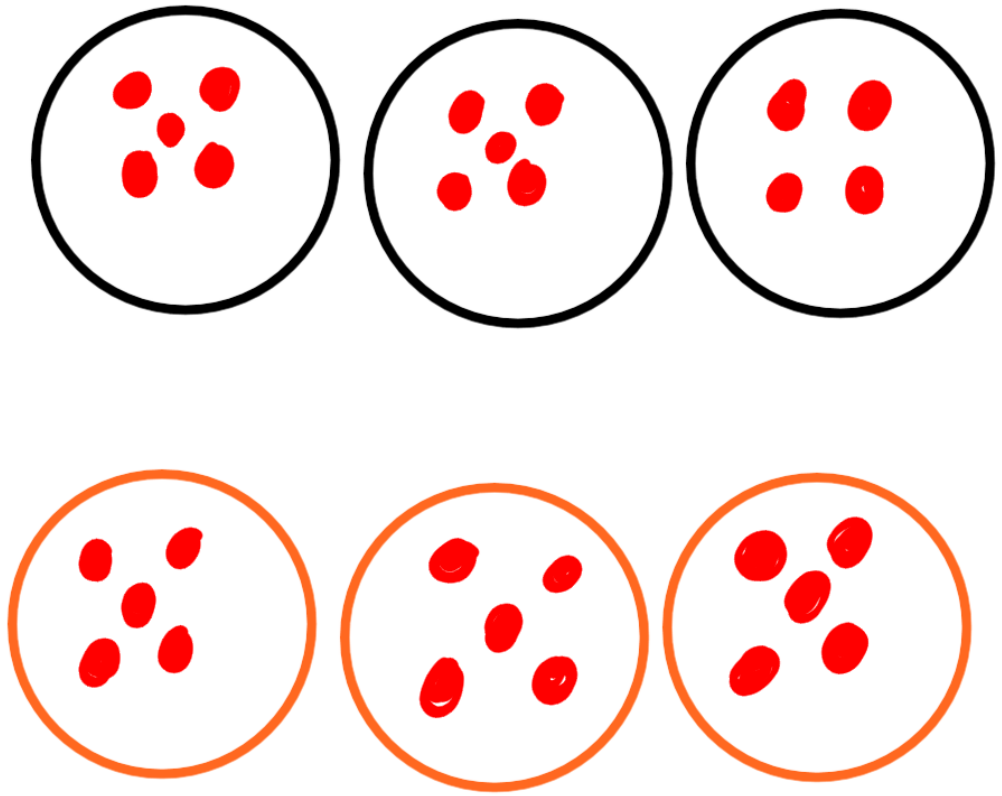


- Adding/subtracting the 1s first
- Drawings lines and dots and converting a 10 into 10 1s

We do not teach column method in Year 1 unless the teacher is 100% sure it wont confuse the child.

Multiplication and Division

- Creating equal groups
- Identifying equal and non-equal groups

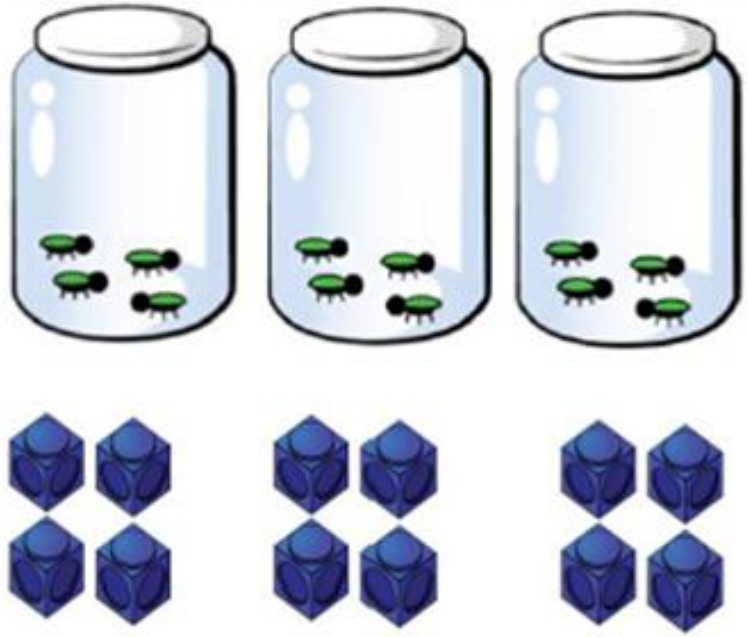


3 x 5

Multiplication

- Groups of or lots of the same number using objects or pictures
- Can be represented as an array, repeated addition or by drawing groups using dots and circles

There are 3 equal groups, with 4 in each group.



Repeated addition 4+4+4+4+4+4=24

You can use an array to multiply.
To find 6 × 4, make an array of 6 rows of 4.



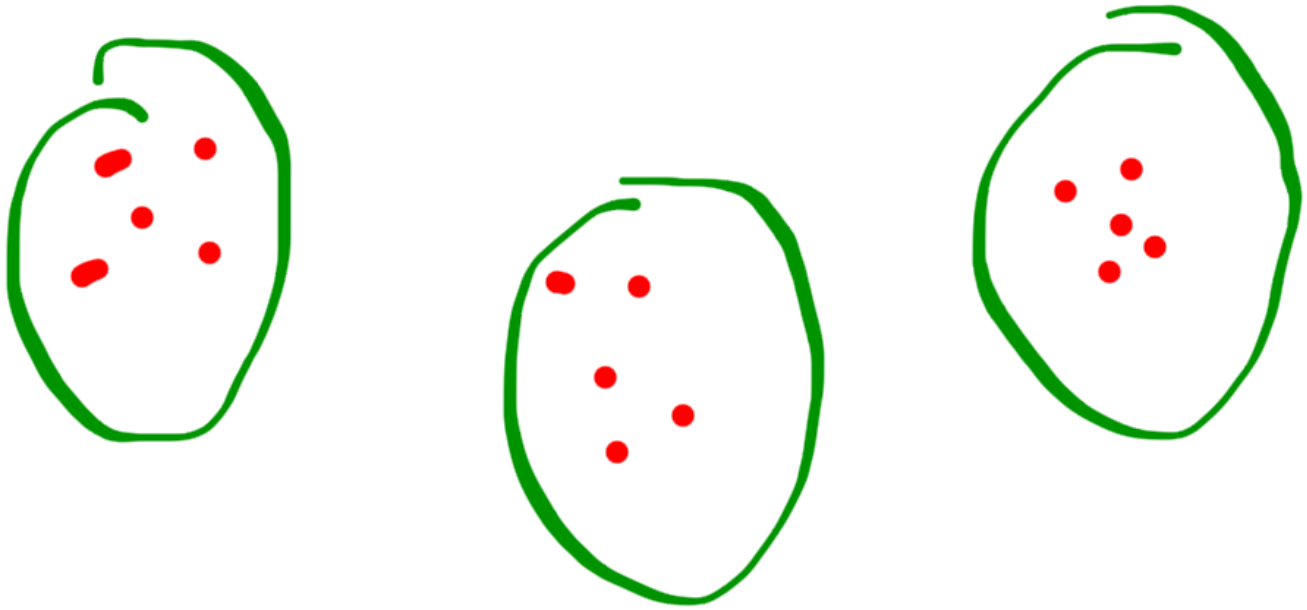
6 × 4 = 24

↑ rows

↑ counters in each row

↑ total number of counters

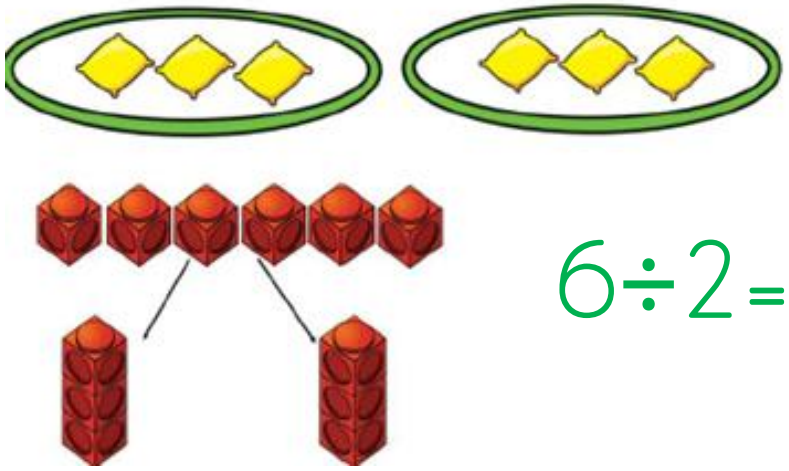
3 x 5 =



Division

- Breaking an amount into equal groups
- Sharing objects
- Circles and dots

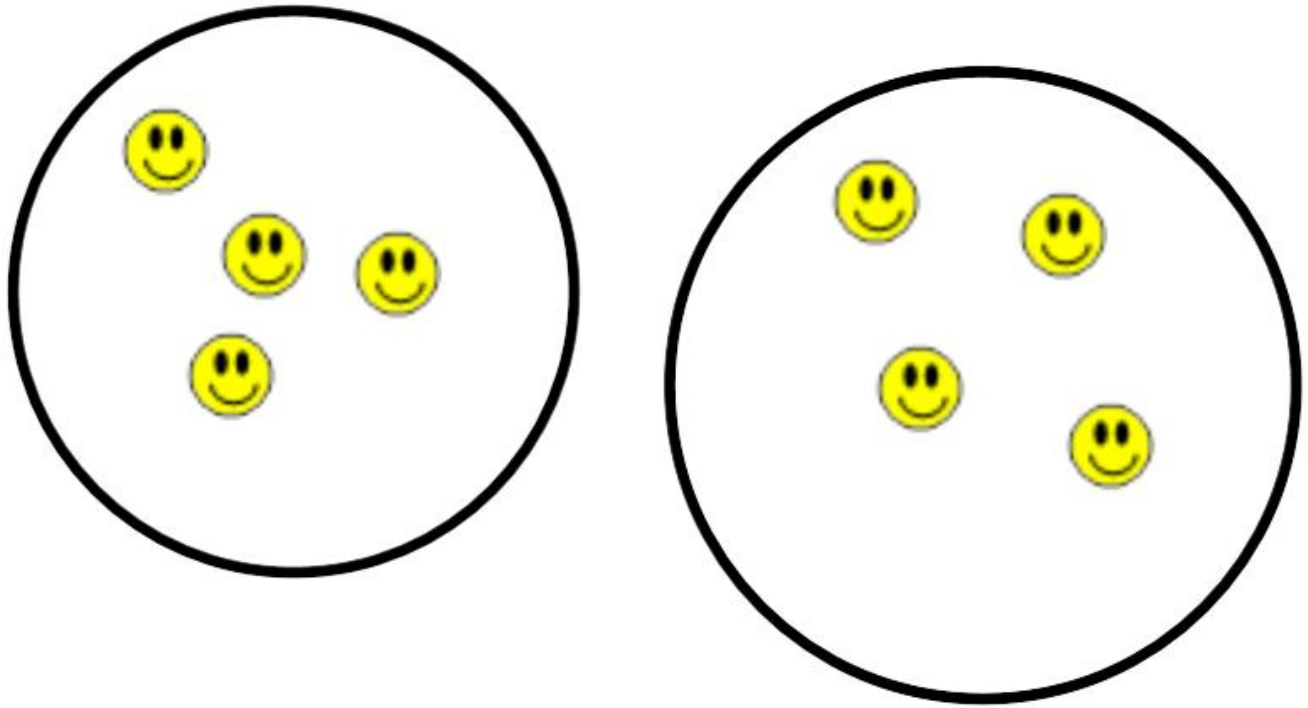
- We share the greater amount between the smaller



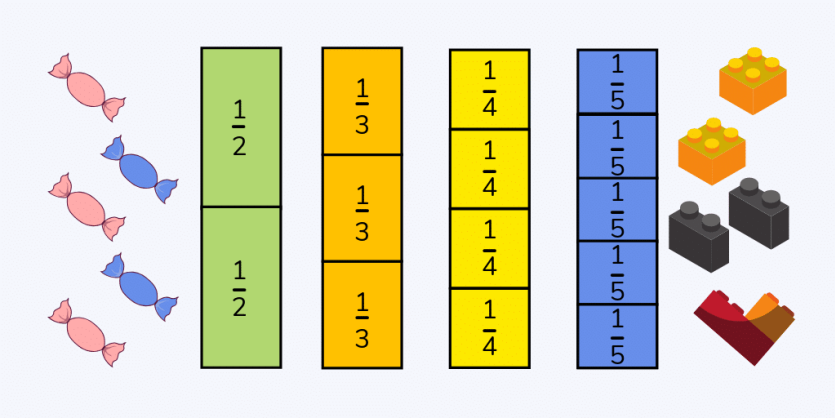
$6 \div 2 = 3$

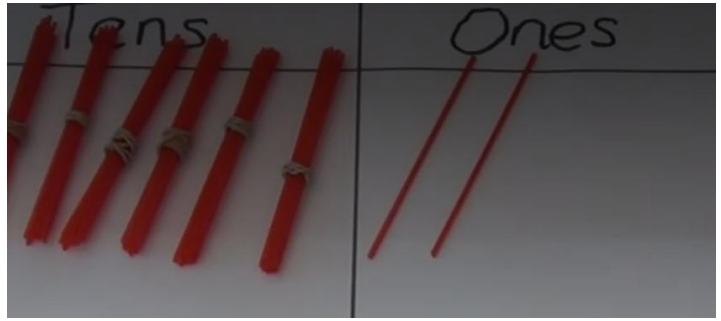
Circles and dots

$8 \div 2 =$



Maths using concrete objects/manipulatives (at home)





Shopping- add as you shop and put things back to subtract

Baking/cooking- counting out measurements



White Rose – Stories for Maths

- This term, we are introducing White Rose's 'Stories for Maths' into our lessons.
- These beautifully written picture books link directly to our maths curriculum and help children explore key mathematical concepts through engaging characters and real-life situations.
- By weaving maths into storytelling, children deepen their understanding of number, shape, and pattern in a meaningful and memorable way.
- It also supports their speaking, listening, and reasoning skills, helping them to explain their thinking confidently while enjoying the magic of a good story!

https://whiteroseeducation.com/parent-pupil-resources/maths/free-downloads



Useful resources to access at home:

- KIRFS (Key Instant Recall Facts)- sent home half-termly
- Mathletics
- Purple Mash

DIGITAL RESOURCES (Manipulatives):

https://polypad.amplify.com/ - Polypad is free to use and requires no sign-up!

https://thirdspacelearning.com/blog/concrete-resources-cpa-explained/ - This website has some great examples of doing concrete maths at home!

