Maths Parents' meeting

12.06.25

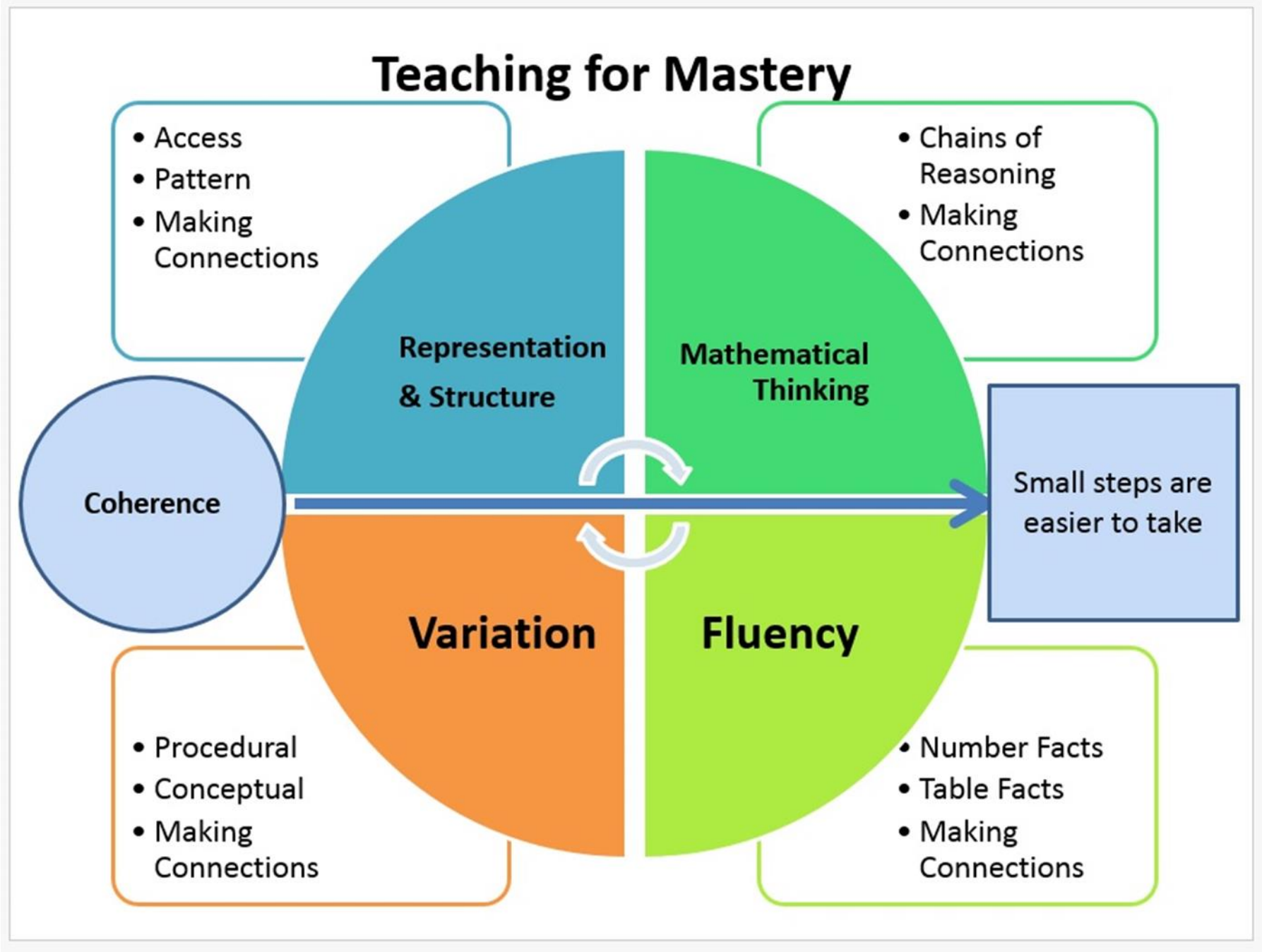
Objectives:

- Introduction to the five big ideas for mastery
- Manipulatives
- Stem sentences
- See it in action!

Winslow Maths Intent:

By using a mastery approach, which includes **concrete and pictorial representations**, we make Maths accessible to all children, challenging the most able and supporting those with SEND, so that all children develop fluency and have a deep understanding of number.
The children are given opportunities for **reasoning**, logical thinking and problem-solving through our maths provision.

Classrooms have a **Maths Working Wall**, on which can be found materials that will help pupils with that lesson's ideas and knowledge. 'What will help me today?' Most notably, flip chart sheets with **modelled examples**, and mathematical **vocabulary**, will be displayed here. Other resources might include sentence starters for reasoning and elements of Knowledge Organisers. **Practical resources** such as dienes blocks, cubes and counters are readily available for all the children to use in every lesson.


Teaching for Mastery
• Access
• Pattern
• Making Connections
• Chains of Reasoning
• Making Connections
Representation & Structure
Mathematical Thinking
Coherence
Small steps are easier to take
Variation
Fluency
• Procedural
• Conceptual
• Making Connections
• Number Facts
• Table Facts
• Making Connections

Manipulatives and representations

- A manipulative is an **object** that children or practitioners can interact with and move to represent mathematical ideas. Manipulatives could include everyday objects such as pine cones, buttons, and small toys as well as resources like interlocking cubes, Cuisenaire® rods, Dienes blocks, and building blocks.

- A ‘representation’ refers to a particular form in which mathematics is presented. Representations include informal **drawings**, mathematical **symbols**, and more formal **diagrams**, such as a number line or graph.

EEF. (2020) *Improving Mathematics in the Early Years and Key Stage 1 - guidance report.* Online: Education Endowment Foundation.

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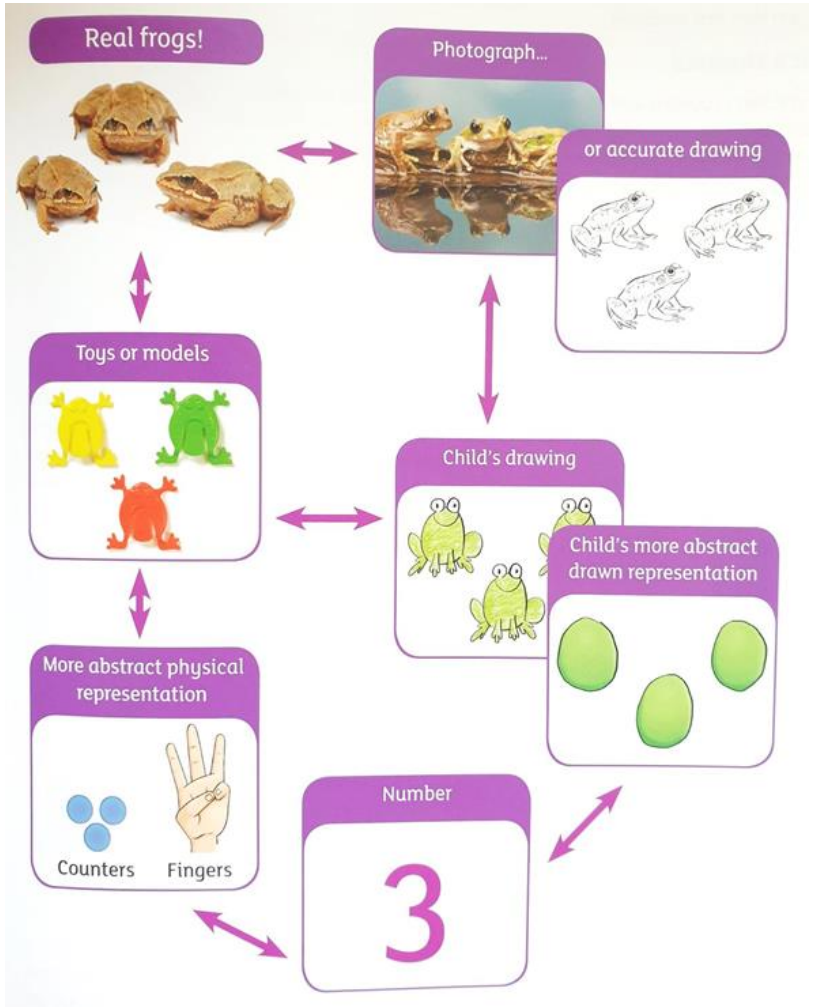
Representation and Structure:



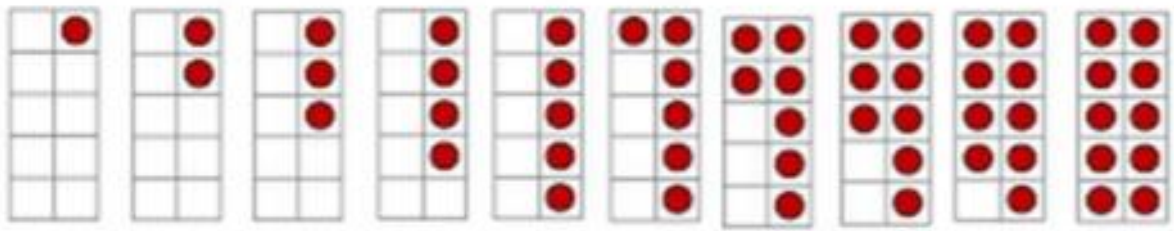
concrete

pictorial

abstract

For example:

Here are two representations for numbers within 10; the tens frame and Numicon:



https://enigmamathshub.co.uk/primary-representation-and-structure/

Using manipulatives.

Addition:

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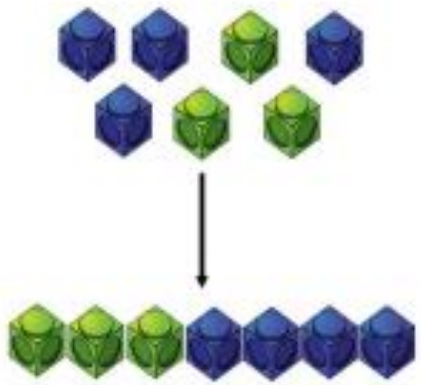
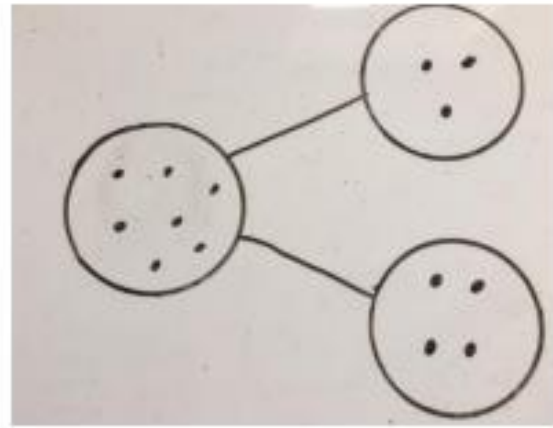
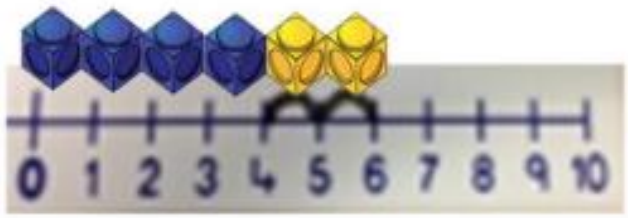
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars).

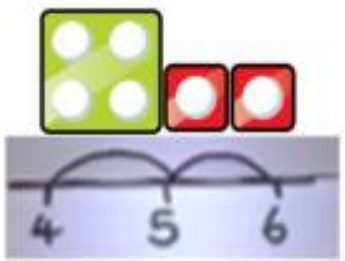


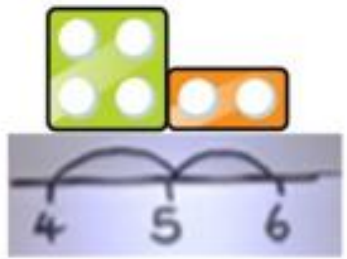
Children to represent the cubes using dots or crosses. They could put each part on a part whole model too.



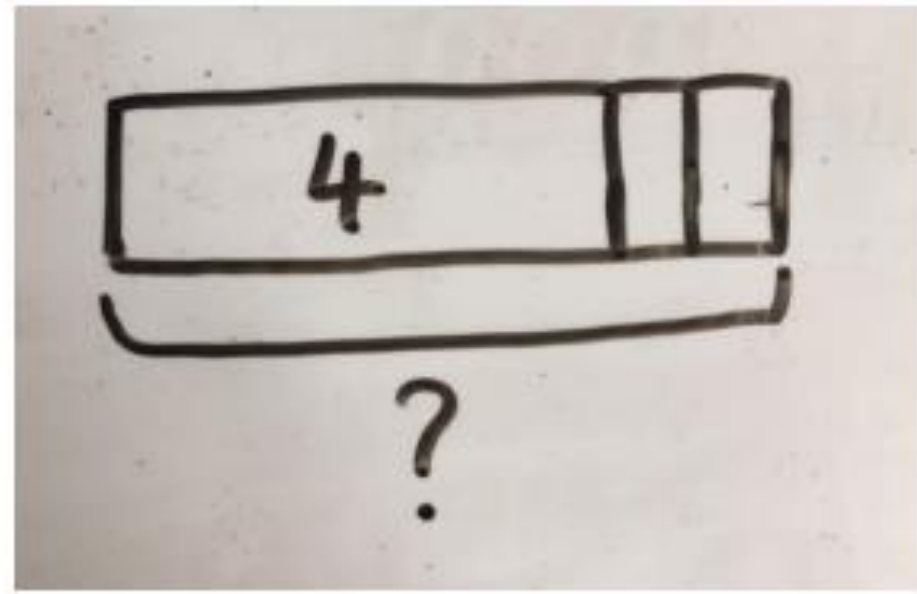
Counting on using number lines using cubes or Numicon.



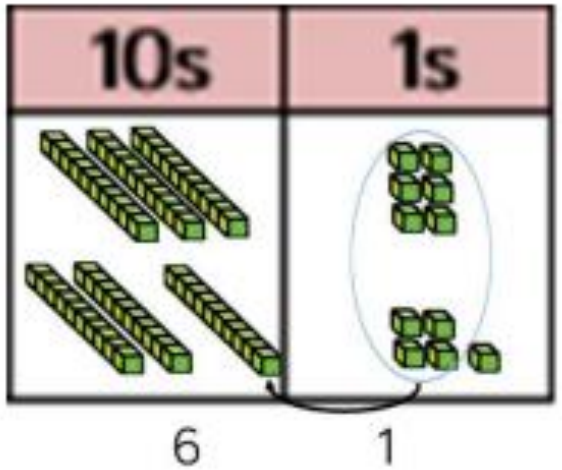




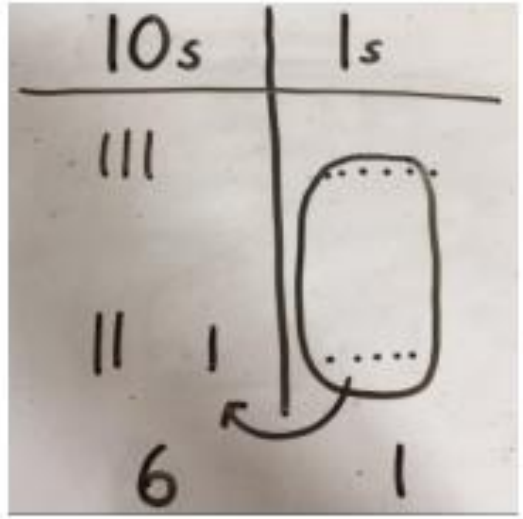
A bar model which encourages the children to count on, rather than count all.



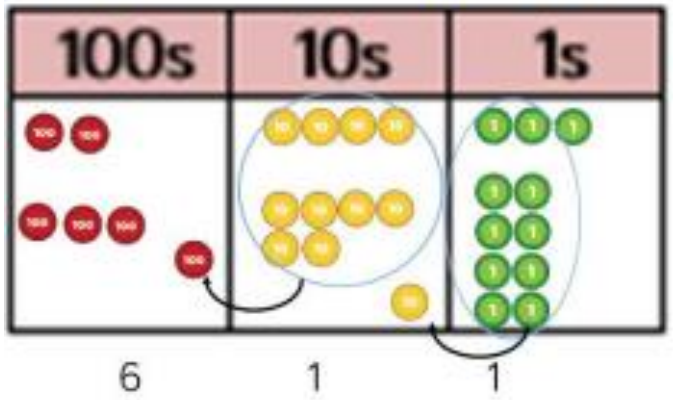
TO + TO using base 10. Continue to develop understanding of partitioning and place value.
36 + 25



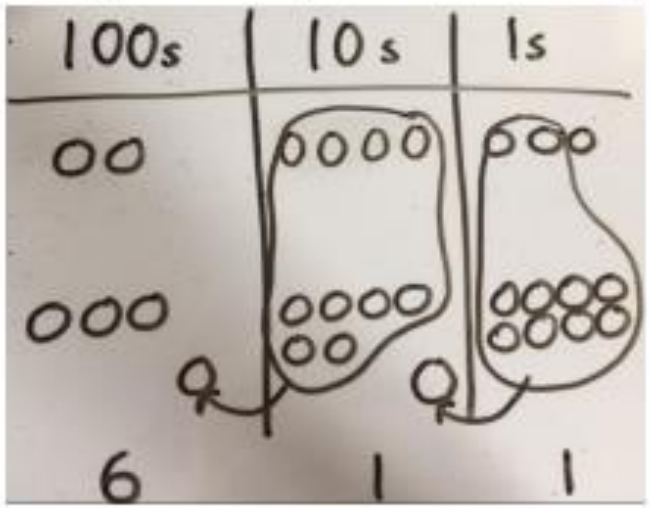
Chidlren to represent the base 10 in a place value chart.



Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.



Chidren to represent the counters in a place value chart, circling when they make an exchange.



Using manipulatives.

Subtraction:

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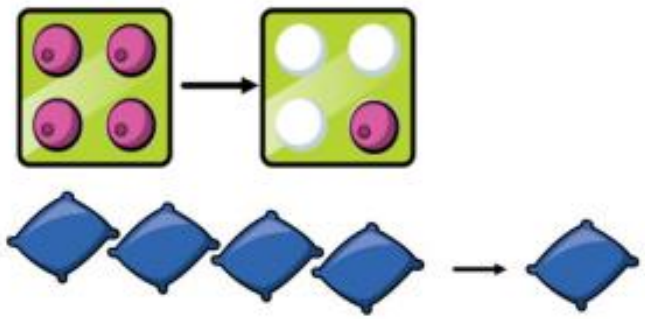
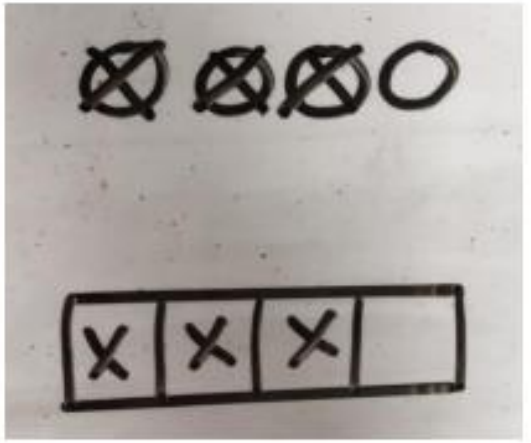
Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags could be used).

4 – 3 = 1

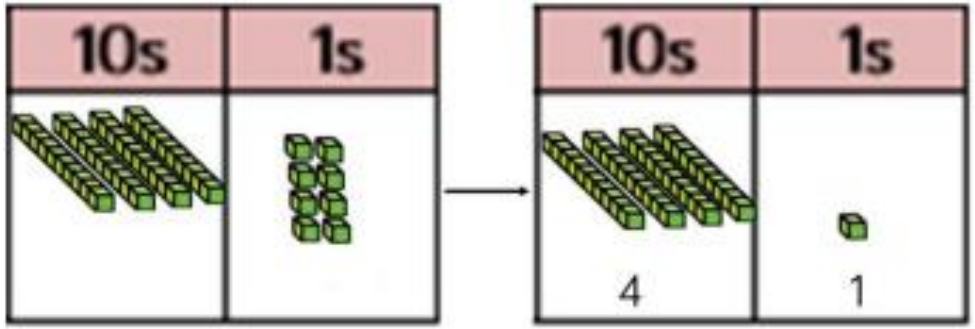


Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.

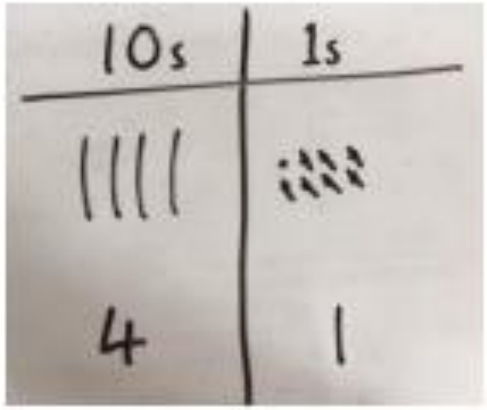


Column method using base 10.

48-7

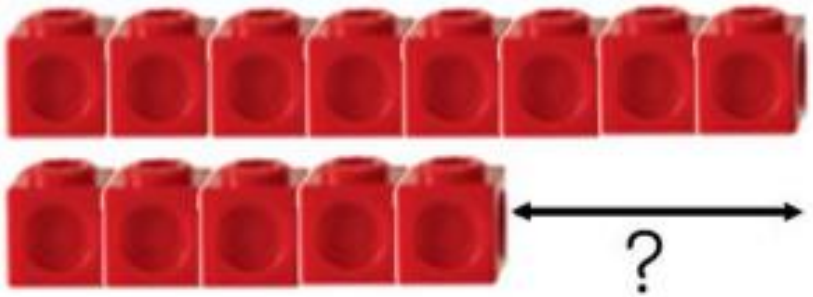


Children to represent the base 10 pictorially.

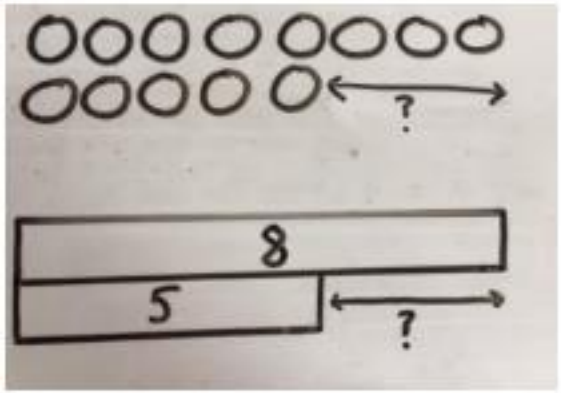


Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used).

Calculate the difference between 8 and 5.

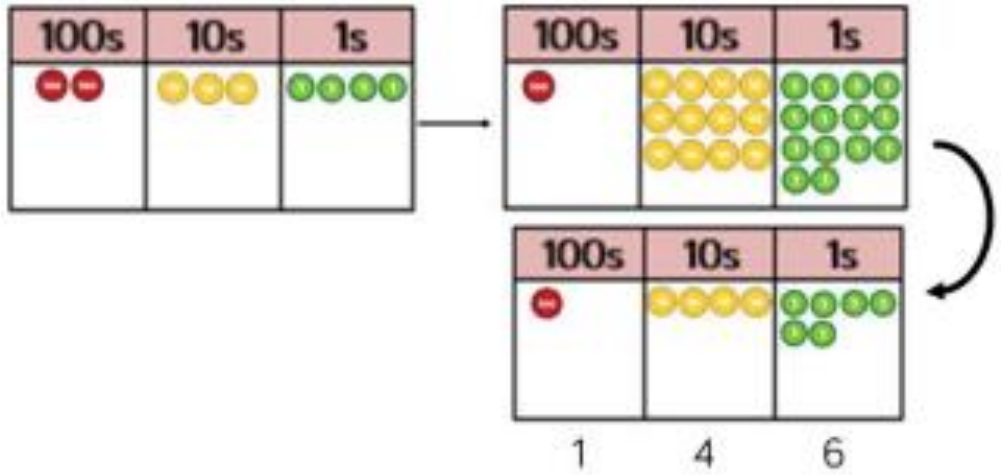


Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.

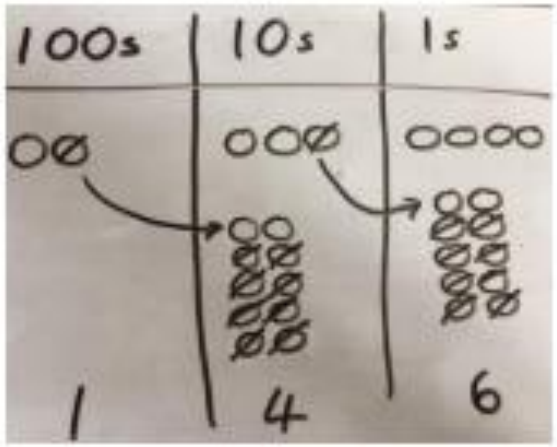


Column method using place value counters.

234 - 88



Represent the place value counters pictorially; remembering to show what has been exchanged.



Using manipulatives.

Multiplication:

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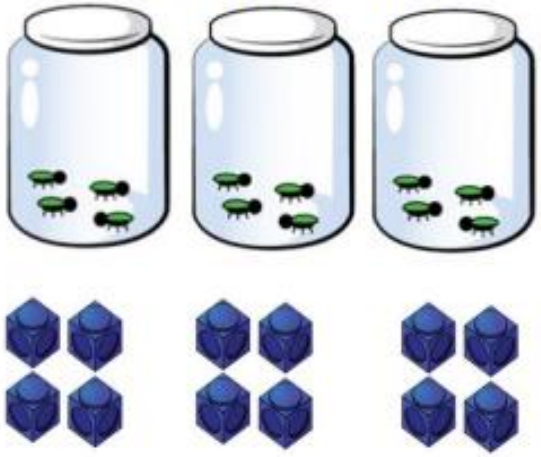
Repeated grouping/repeated addition

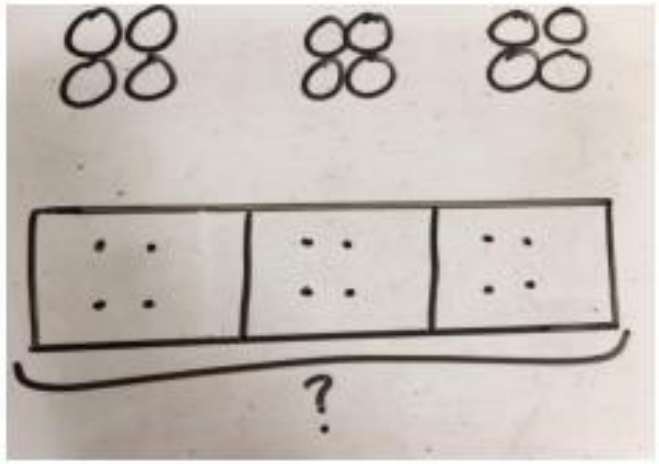
3×4

$4 + 4 + 4$

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

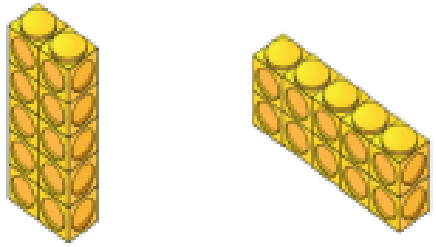


Children to represent the practical resources in a picture and use a bar model.



Use arrays to illustrate commutativity counters and other objects can also be used.

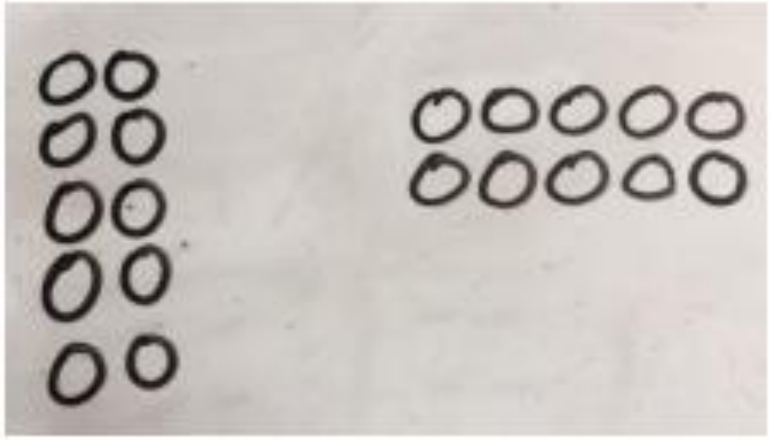
$2 \times 5 = 5 \times 2$



2 lots of 5

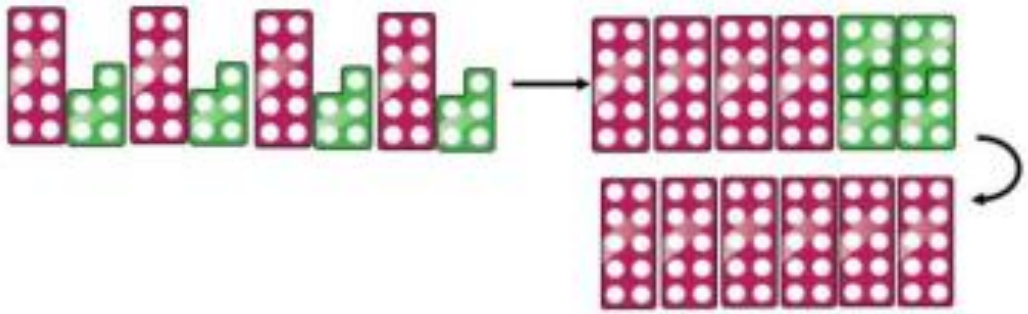
5 lots of 2

Children to represent the arrays pictorially.

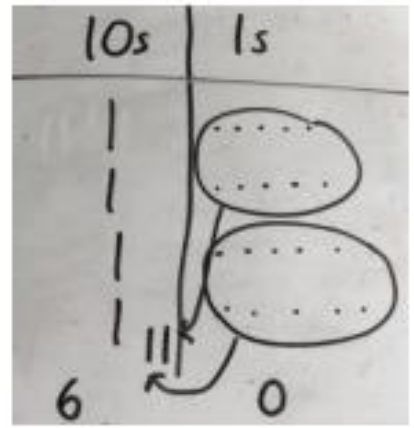


Partition to multiply using Numicon, base 10 or Cuisenaire rods.

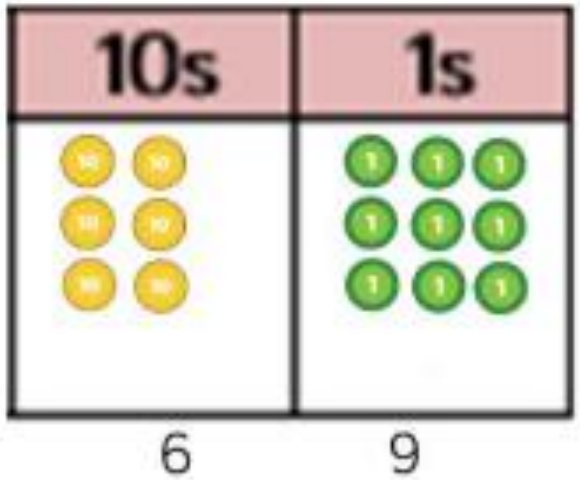
4×15



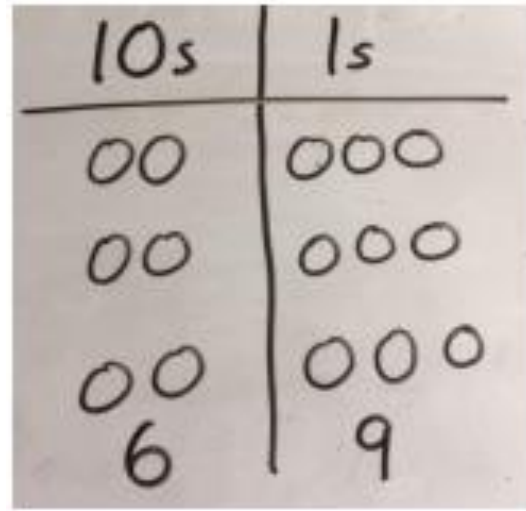
Children to represent the concrete manipulatives pictorially.



Formal column method with place value counters (base 10 can also be used.) 3×23



Children to represent the counters pictorially.



Using manipulatives.

Division:

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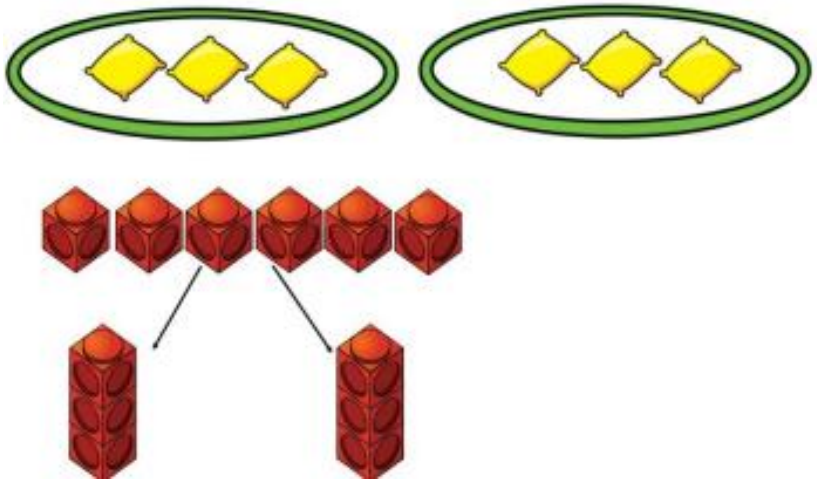
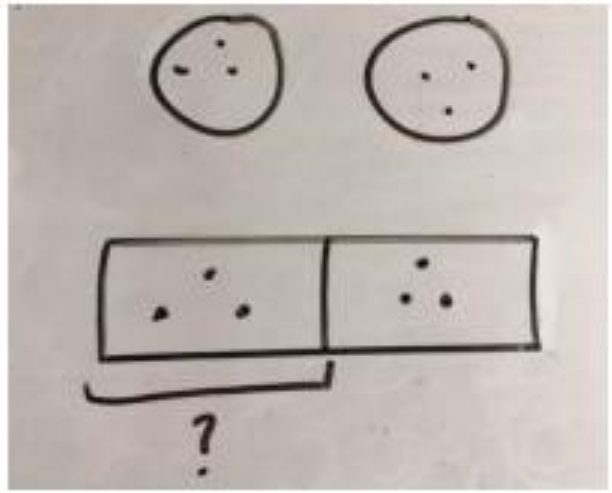
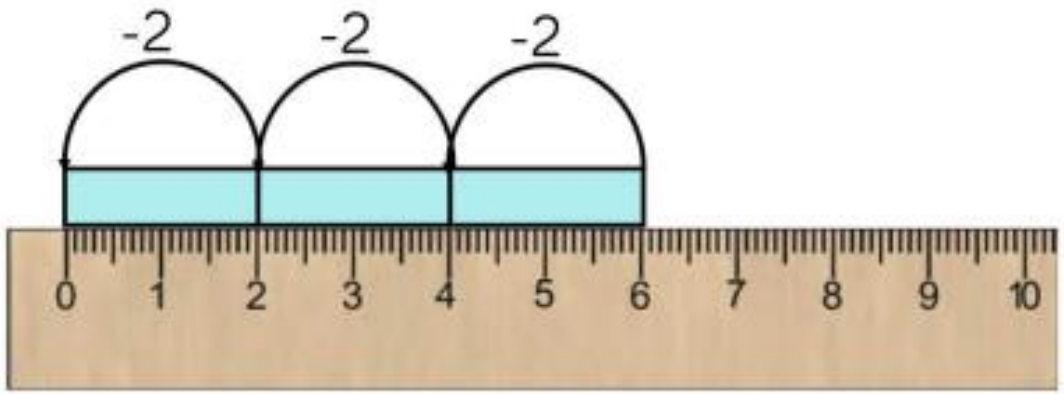
Sharing using a range of objects.
6 ÷ 2



Represent the sharing pictorially.

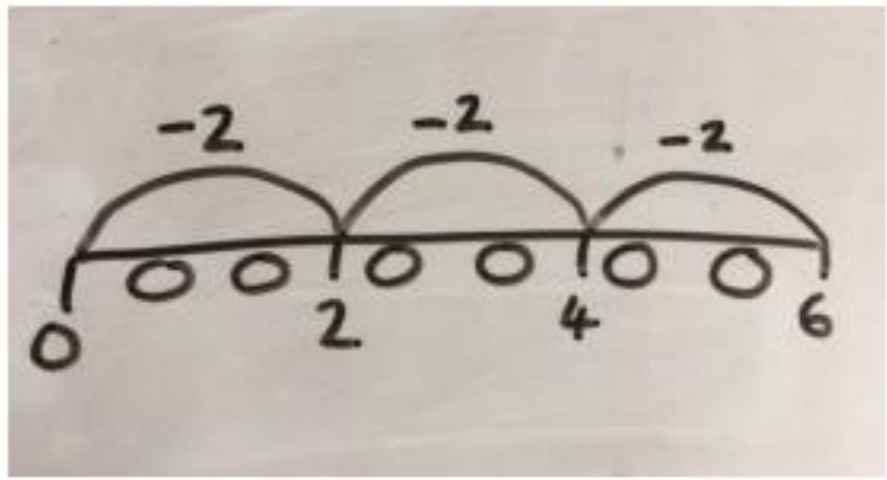


Repeated subtraction using Cuisenaire rods above a ruler.
6 ÷ 2



3 groups of 2

Children to represent repeated subtraction pictorially.

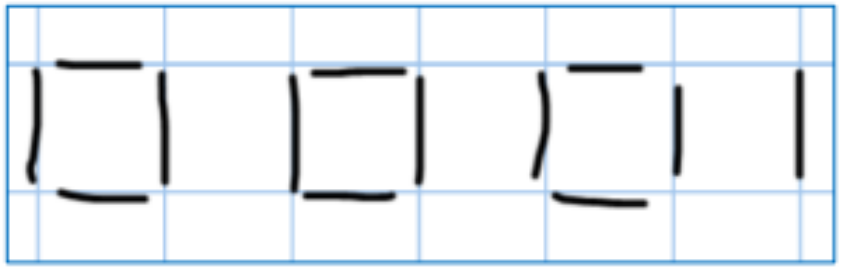


2d + 1d with remainders using lollipop sticks. Cuisenaire rods, above a ruler can also be used.
13 ÷ 4

Use of lollipop sticks to form wholes- squares are made because we are dividing by 4.

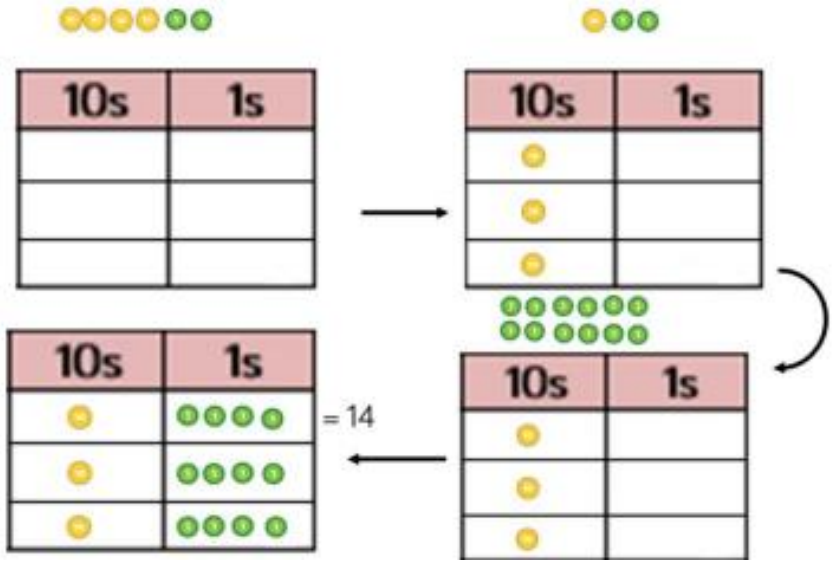
There are 3 whole squares, with 1 left over.

Children to represent the lollipop sticks pictorially.

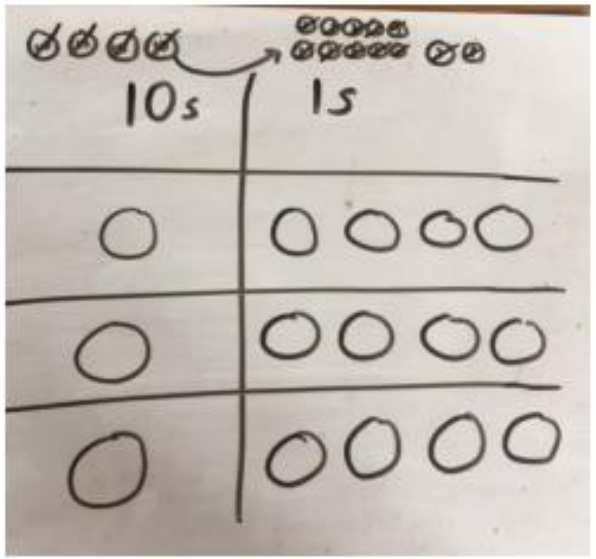


There are 3 whole squares, with 1 left over.

Sharing using place value counters.
42 ÷ 3 = 14



Children to represent the place value counters pictorially.



Stem sentence examples:

The role of repetition I say, you say, you say, you say, we all say

- ‘The number 58 Has 5 tens and 8 ones’ ‘this is equal to 58 ones’
- ‘’10 is the whole, 6 is the part and 4 is the part’
- ‘addition is commutative, swap the numbers around and the answer is the same’
- ‘Addition is the inverse of subtraction’
- ‘We can partition the whole into tens and ones’ (yr 2)
- ‘10 hundreds is equivalent to 1000’ (yr 4)
- ‘10 hundredths are equivalent to one tenth’ (yr 6)
- ‘A square has four equal sides’ (Reception)
- ‘An acute angle is less than 90 degrees’ (Year 5)

Stem sentences

- Can be used in all year groups
- Help to remember key mathematical concepts
- Develop mathematical language
- Build confidence
- Transferable when answering questions
- Suitable for the unit of work
- Concise sentences
- Key mathematical vocabulary
- Repetition- every day as a whole class/ individually
- Could add actions