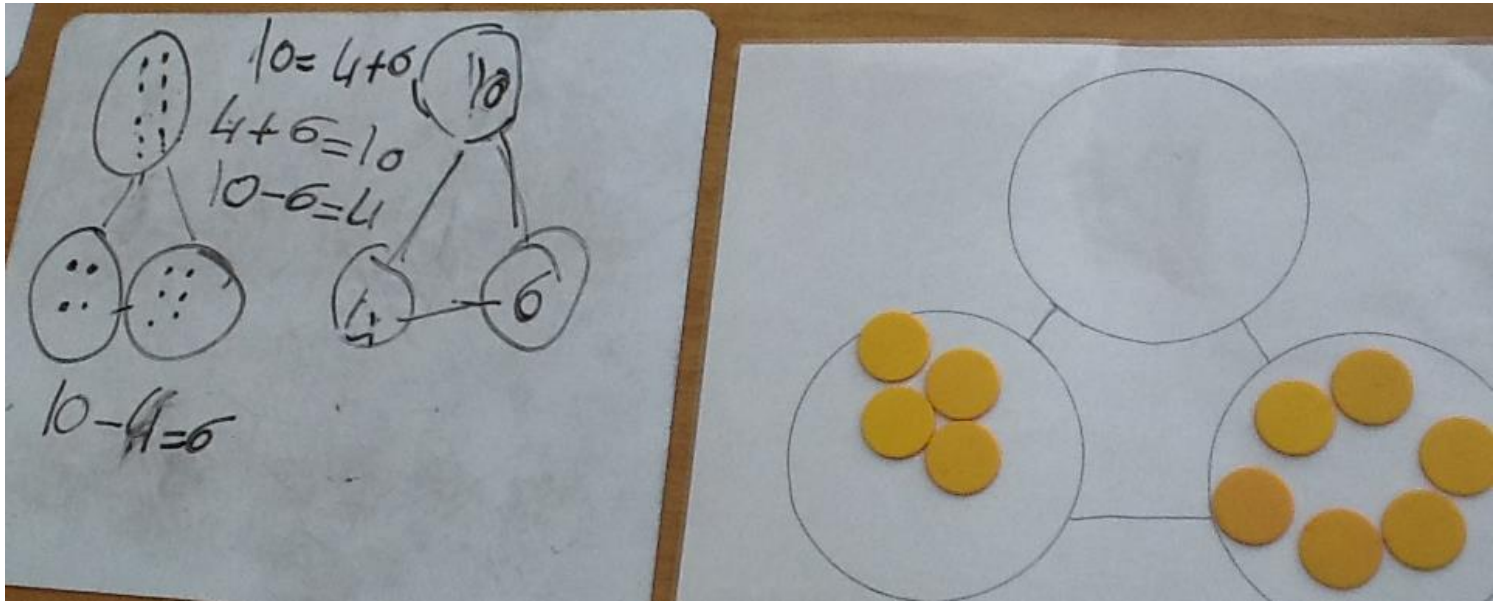
Progression from equipment to diagrams



By
Louise Langford and Tara Smith
Barry Primary School, Northampton.

Explore the equipment and talk about it!

Familiarisation Activities

- Matching rods to pictures
- Making patterns and talking about them
- Put the rods in order of length

Behind the back games WRPBr

- Find me two rods equivalent to...
- Find me a rod the same as / longer than / shorter than
- If the ... rod represents....

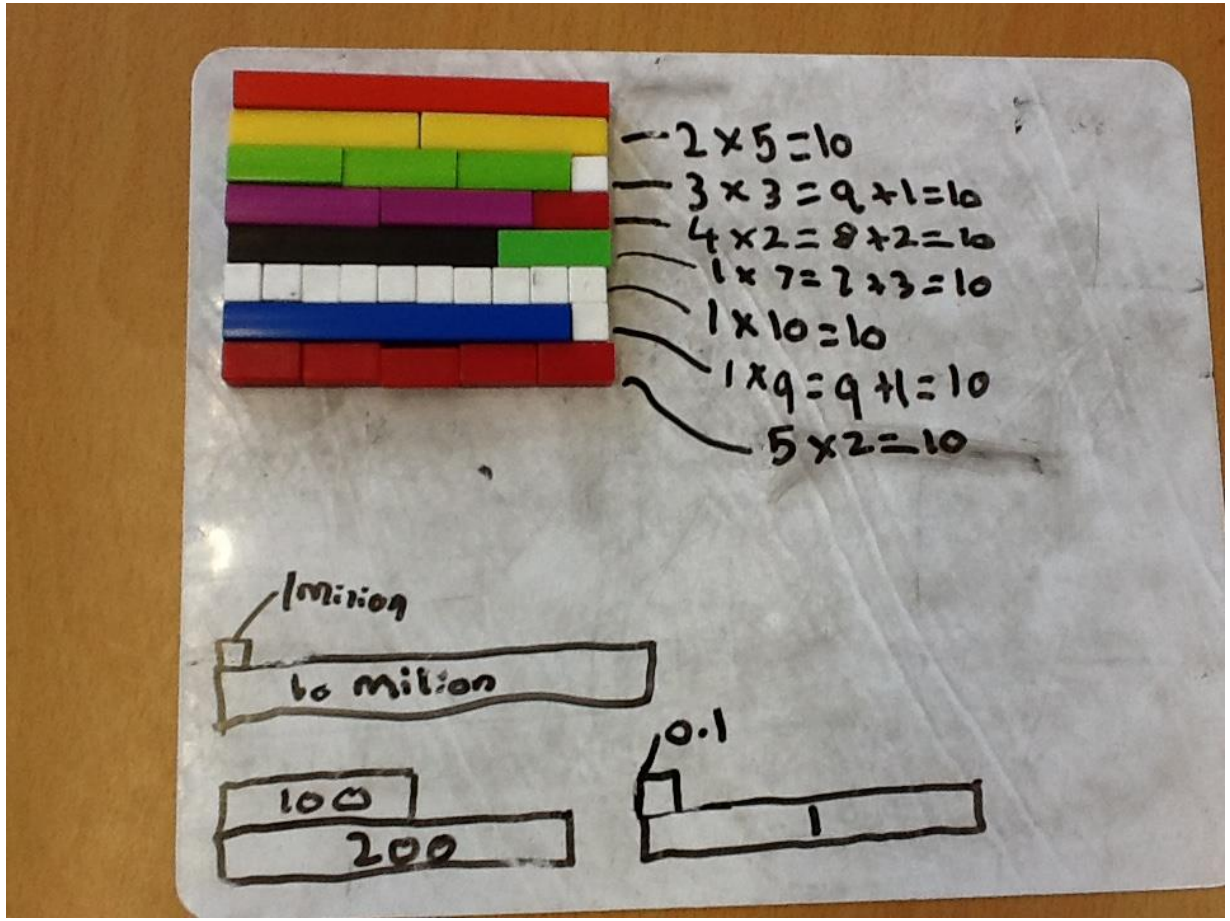
Why use?

OXFORDSHIRE COUNTY COUNCIL

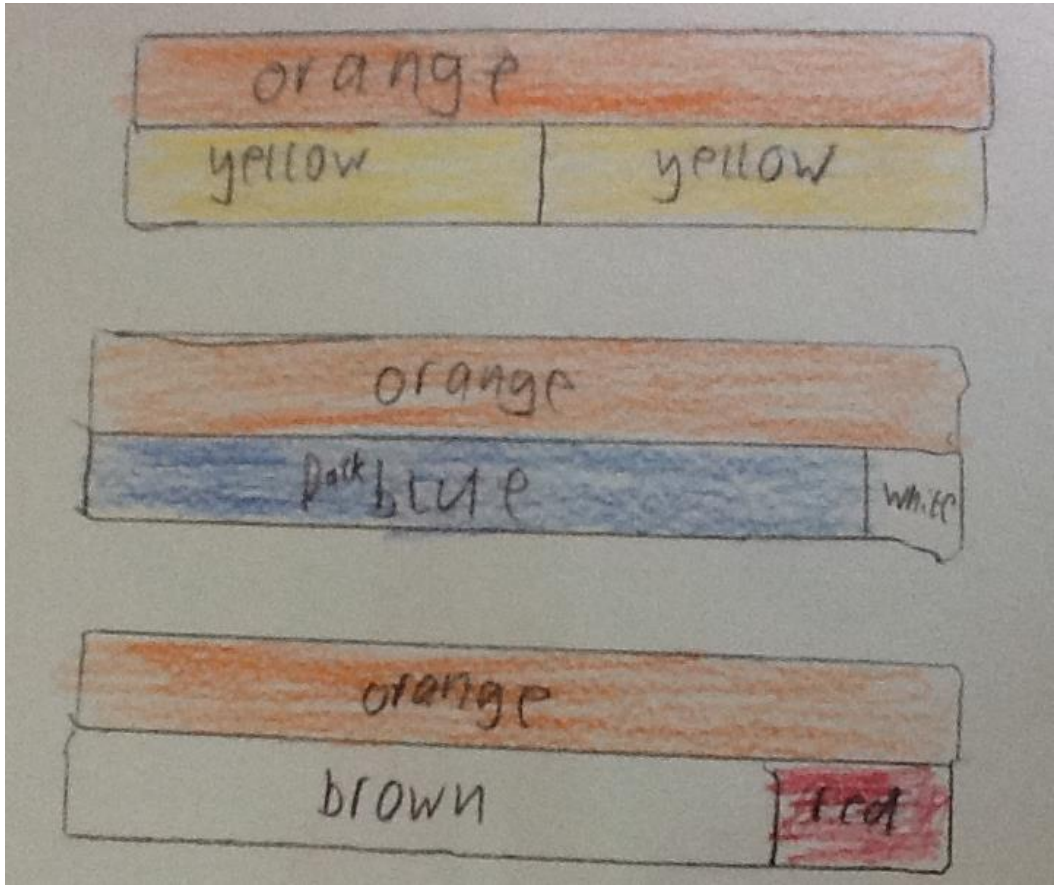
Call one anything.

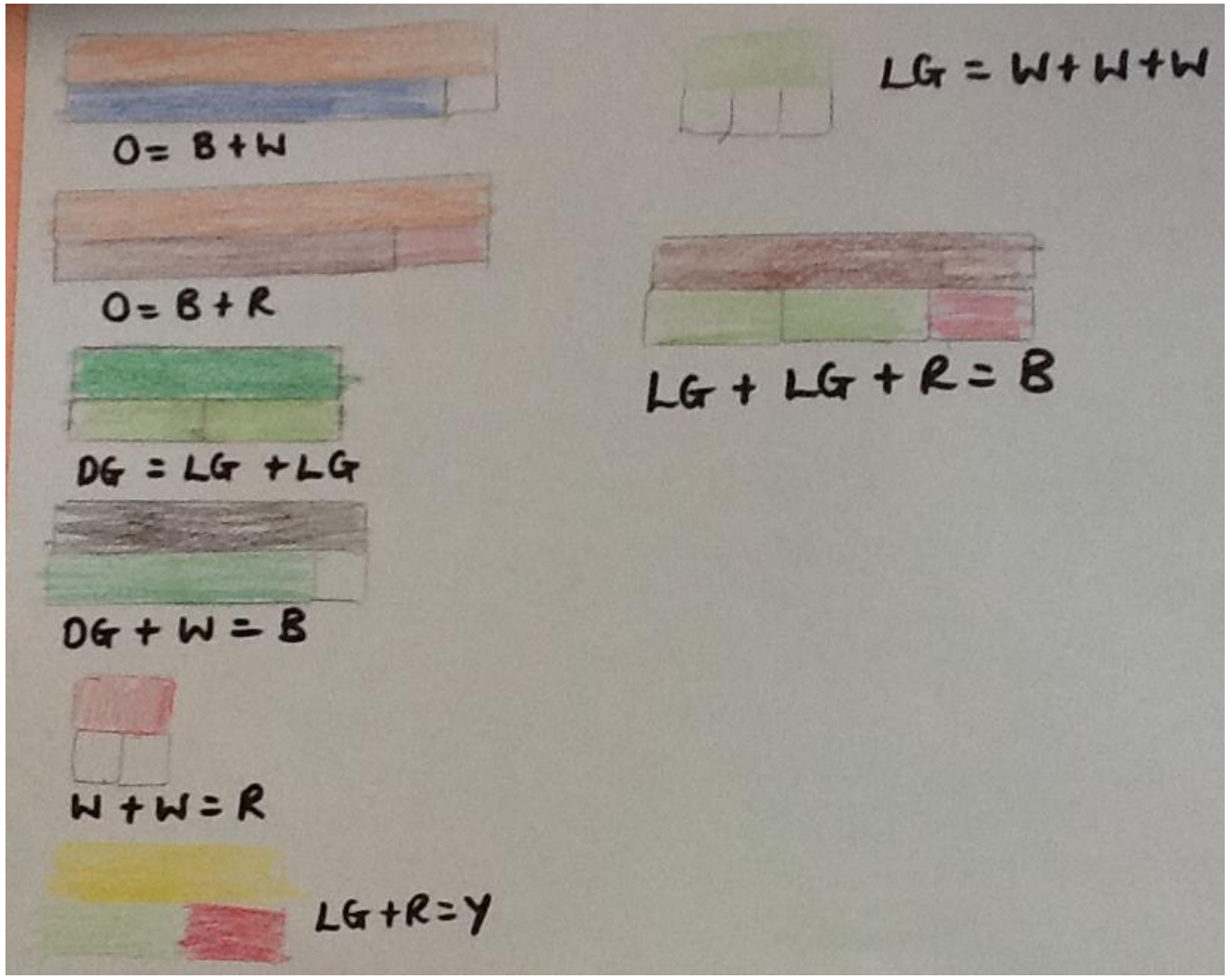
Watch the video. Get children to explore with the rods.

https://www.youtube.com/watch?v=sbsPK3LXVLc



Explore relationships between rods.





Proportion

Take a strip and a paperclip:

If the strip represents 10, show me 5.
If the strip represents 100, show me 50.
If the strip represents 100, show me 75.
If the strip represents 100, show me 25.
If the strip represents 1, show me 0.25.
If the strip represents 2, show me 2.5.

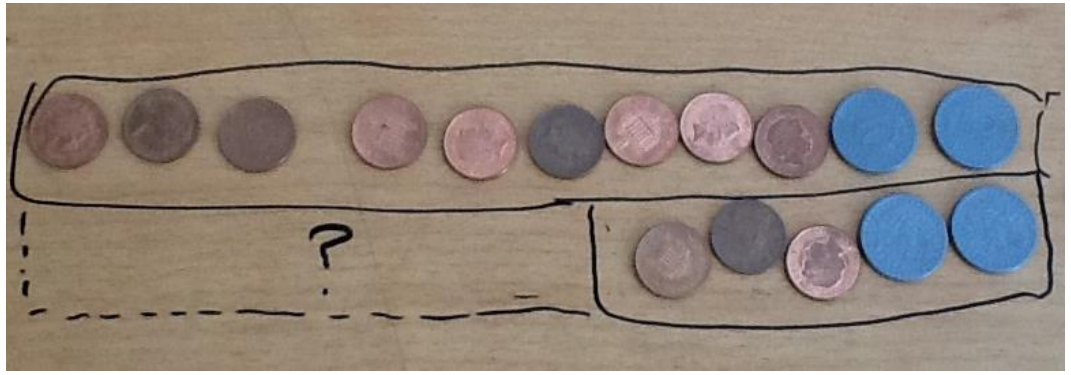
If the strip represents 86, show me 30.

Which develop fluency/which develop conceptual understanding?

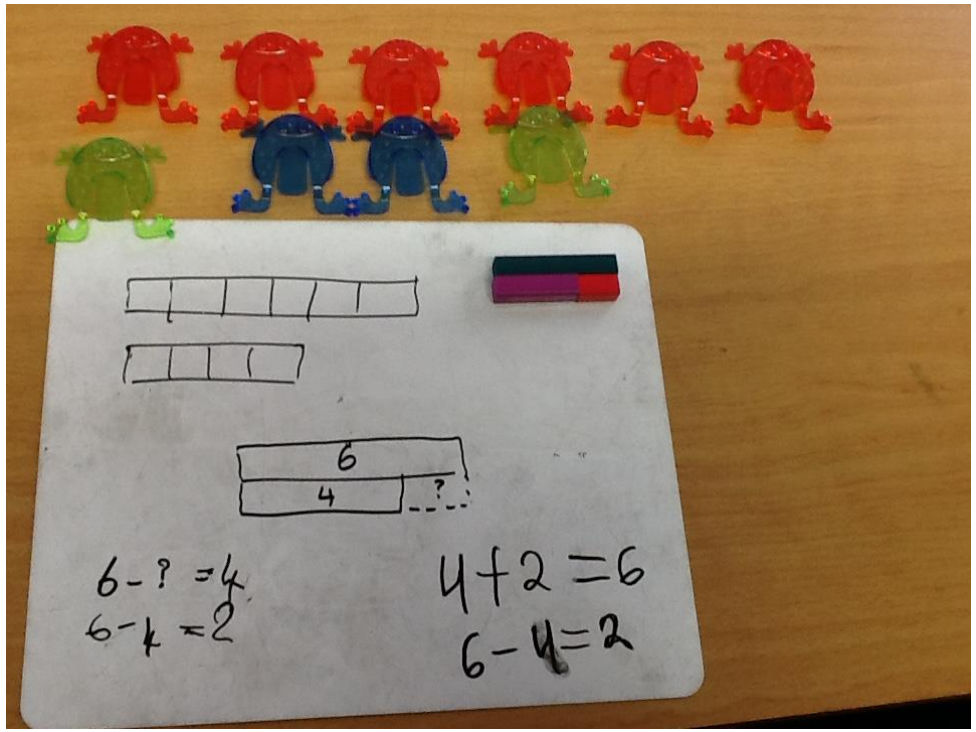
National Centre for Excellence in the Teaching of Mathematics

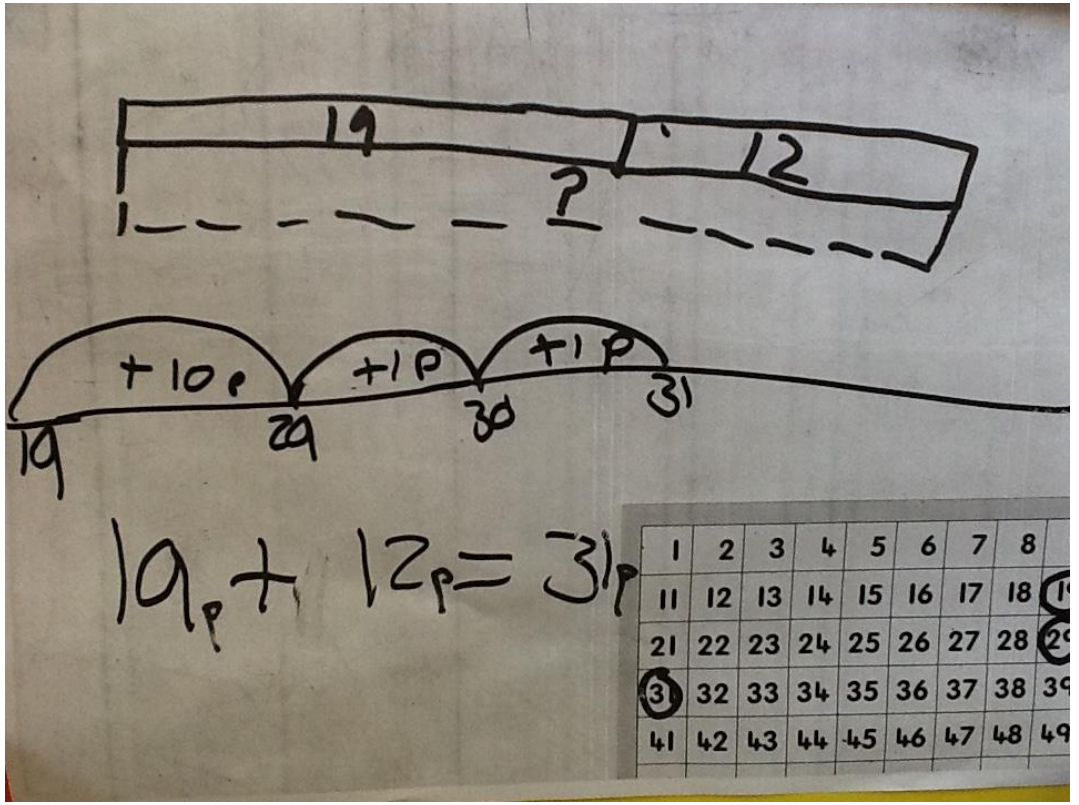
OXFORDSHIRE COUNTY COUNCIL

Make connections.



- Children need to have lots of experience of moving from concrete to abstract and seeing equipment alongside linear images.

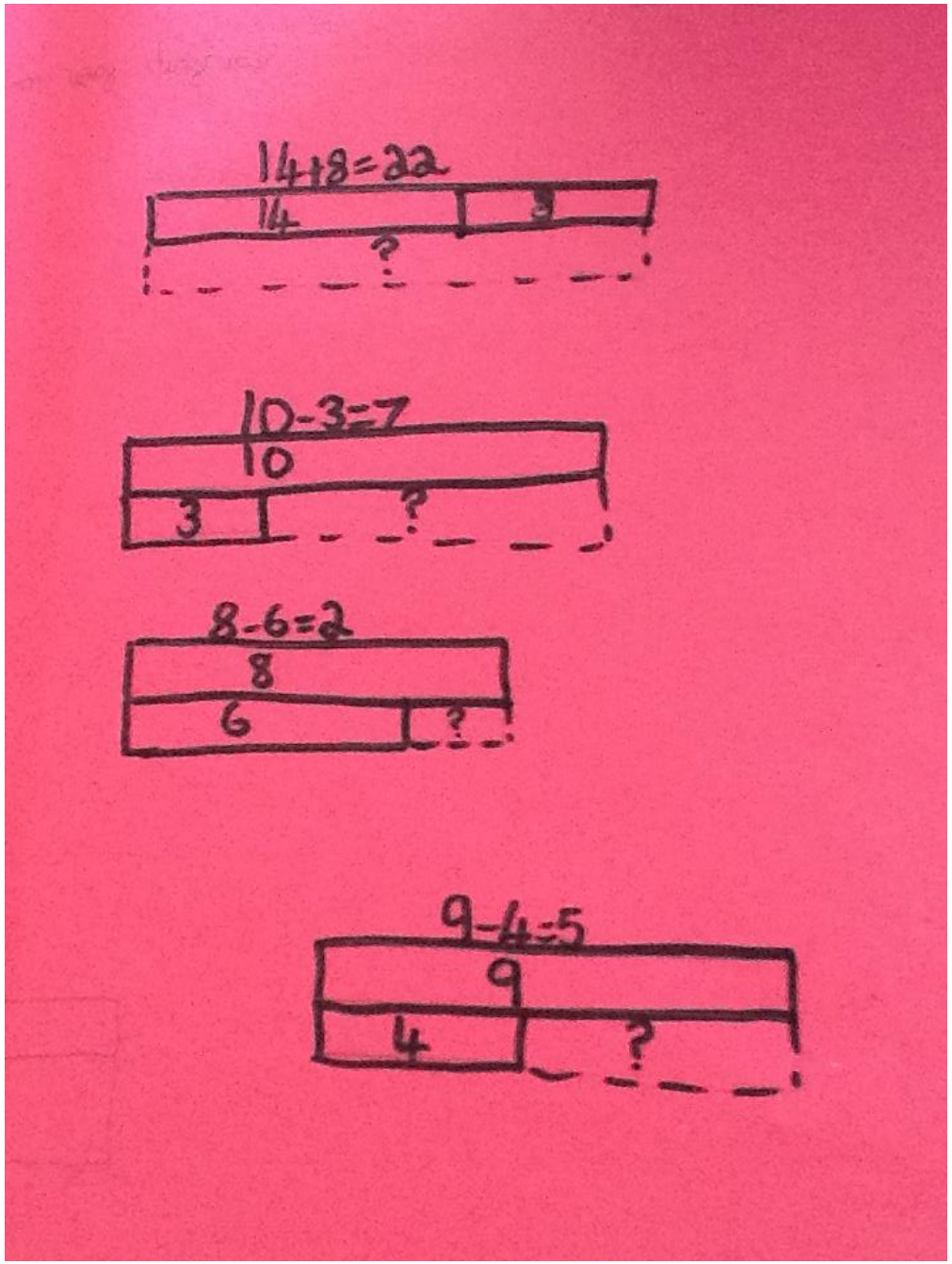




Bar model.

A bar model is a picture that represents the problem.

Model the bar model and discuss proportion



Can you show these using equipment?

Can you draw a bar model for these?

Addition and subtraction.

- Tom has a bag of 6 marbles. His friend gives him 2 more. How many does he have now?

- Kelsey was running a 100 mile marathon. After 80 miles she felt very tired. How many more miles did she have to run?

- Ali had £100. He bought a DVD for £60 and a CD for £20. How much money did he have left?

What do we know?
What is the unknown?

Whole/Part relationship

Multiplication and division.

- If I give 5 chocolates to each of my 9 friends. How many chocolates did I have?

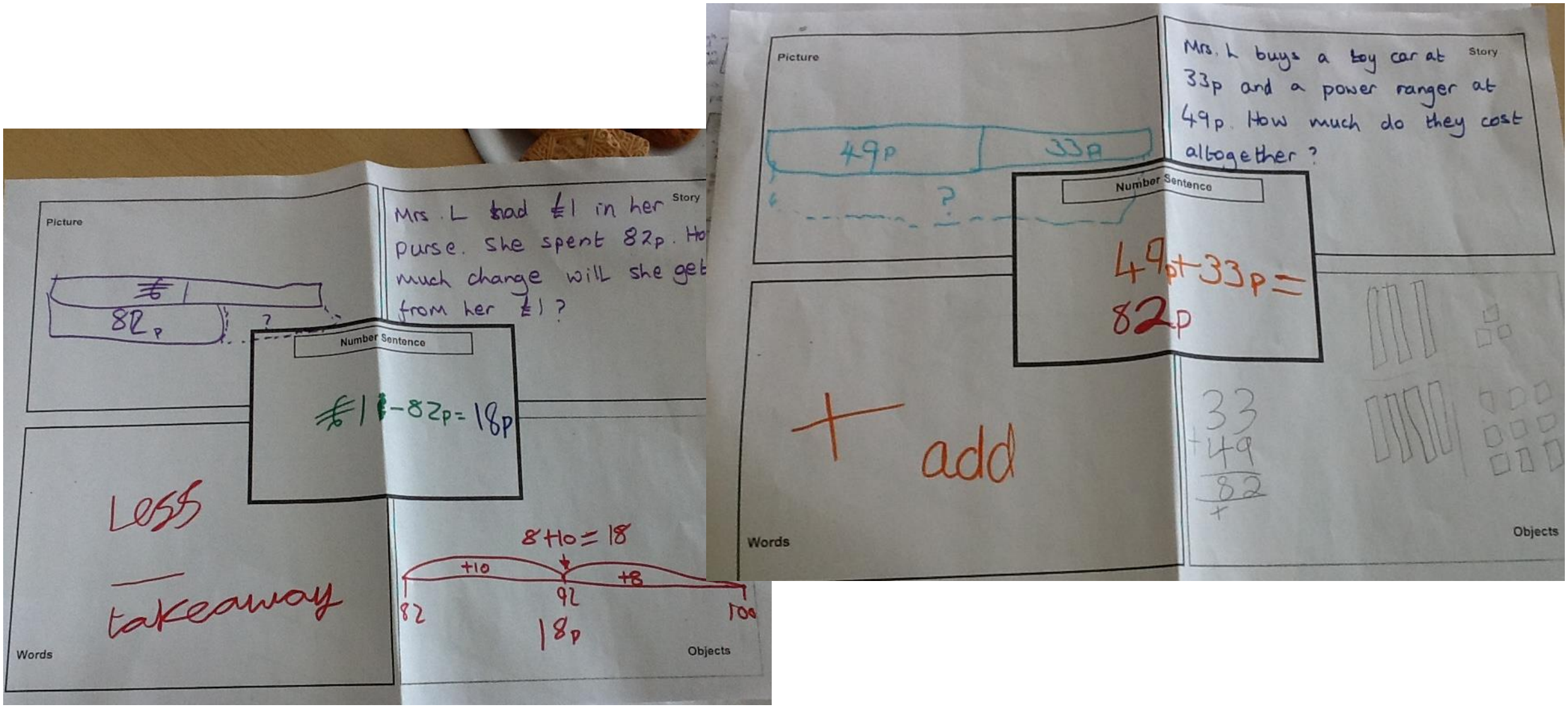
- The children are having a picnic. There are 6 children and 24 sandwiches. How many sandwiches will each child get?

- My mum baked 12 cakes. There are 3 children in the family. If mum shares the cakes between the children how many will they get each?

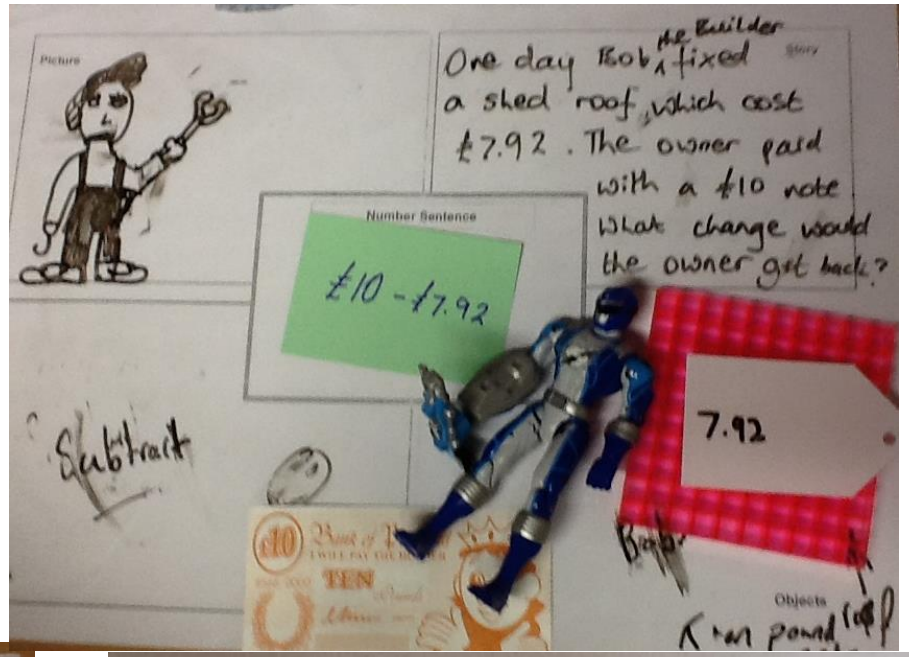
What do we know?
What is the unknown?

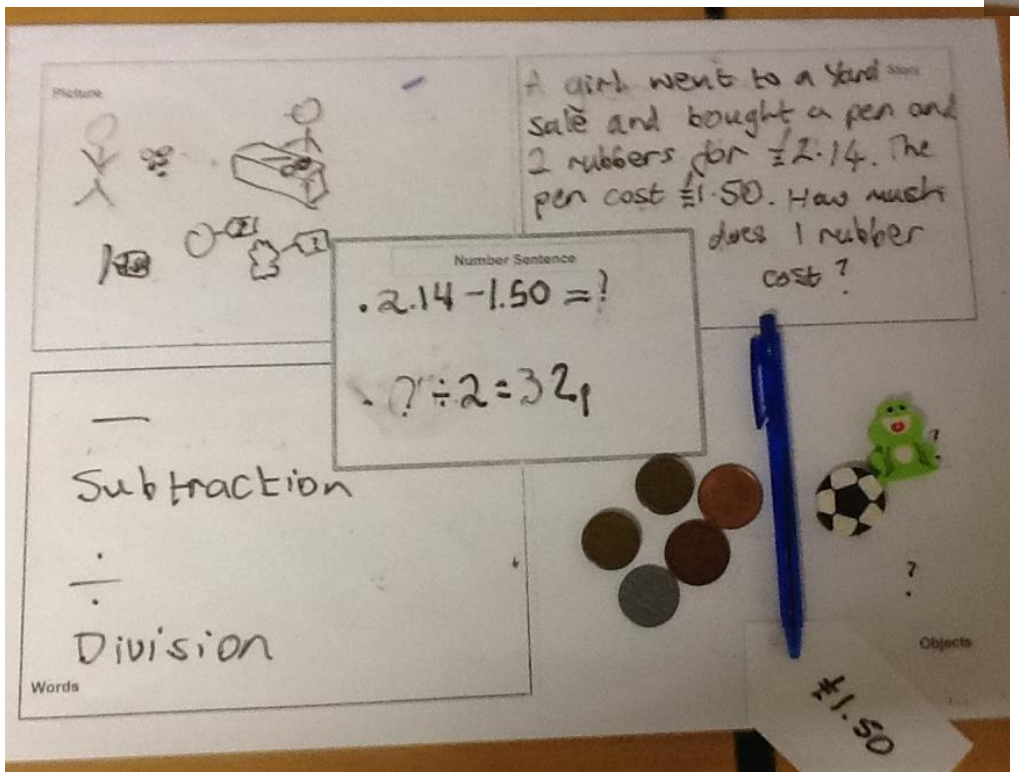
Whole/Part relationship

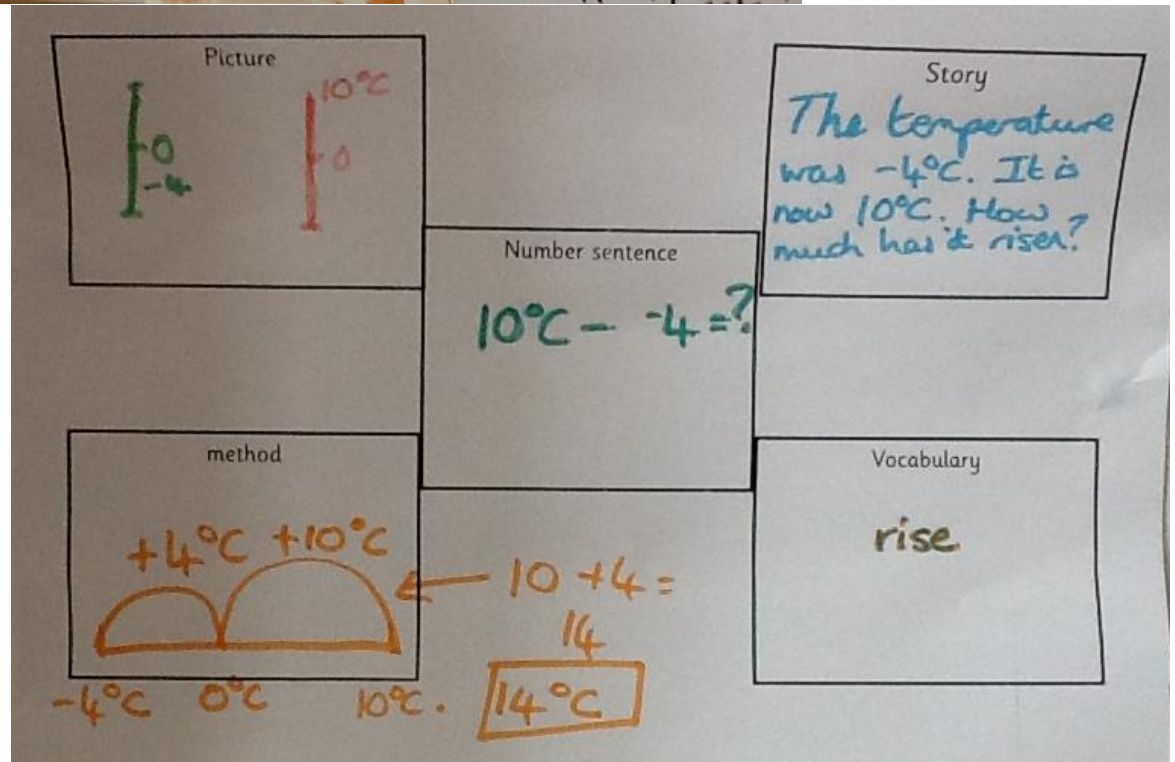
Link Bar model to the connections mat.



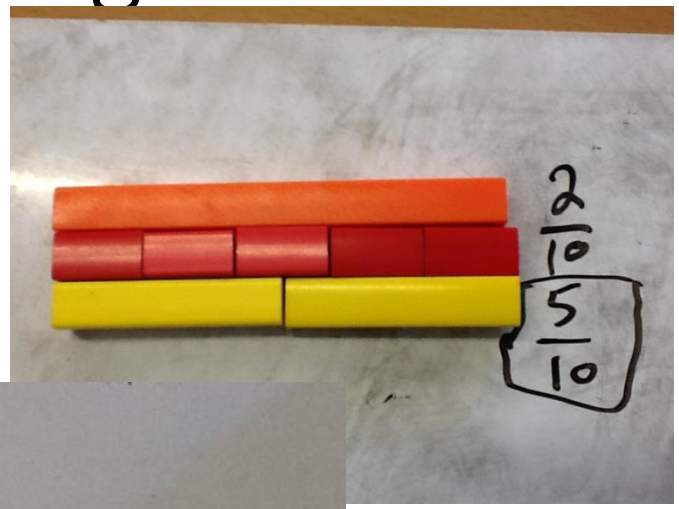
Connection mats can be used in lots of different ways.

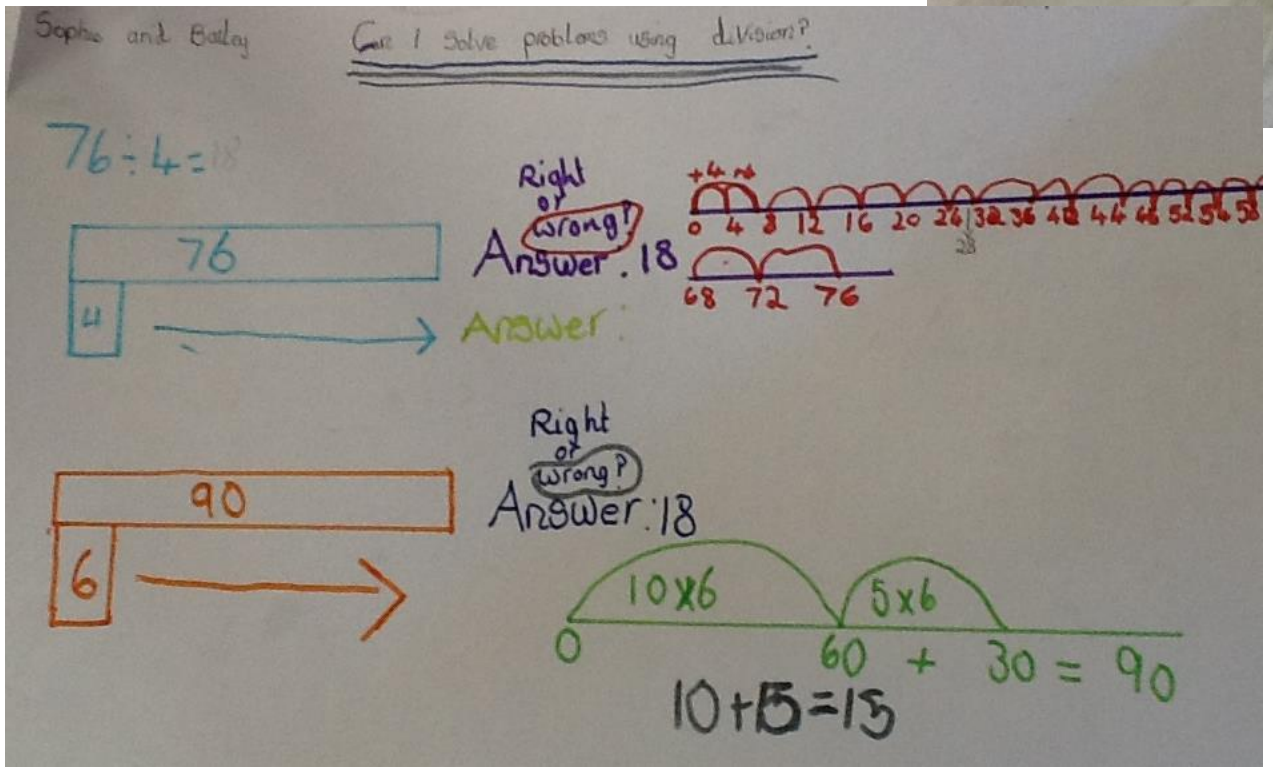


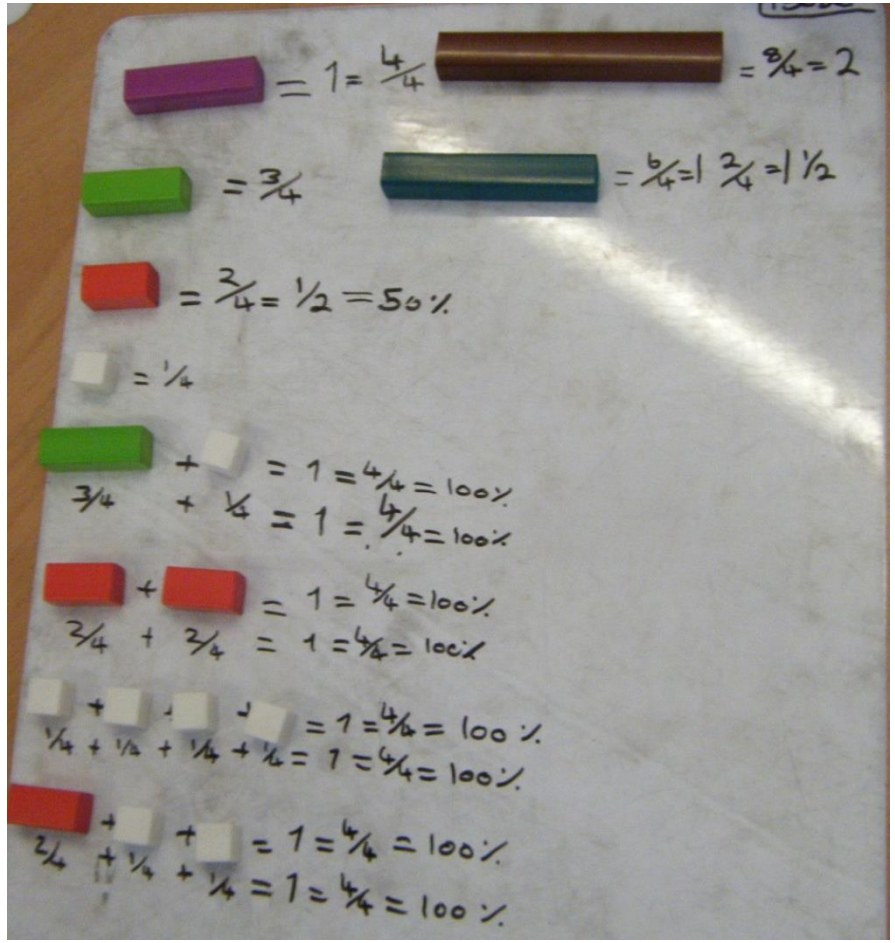


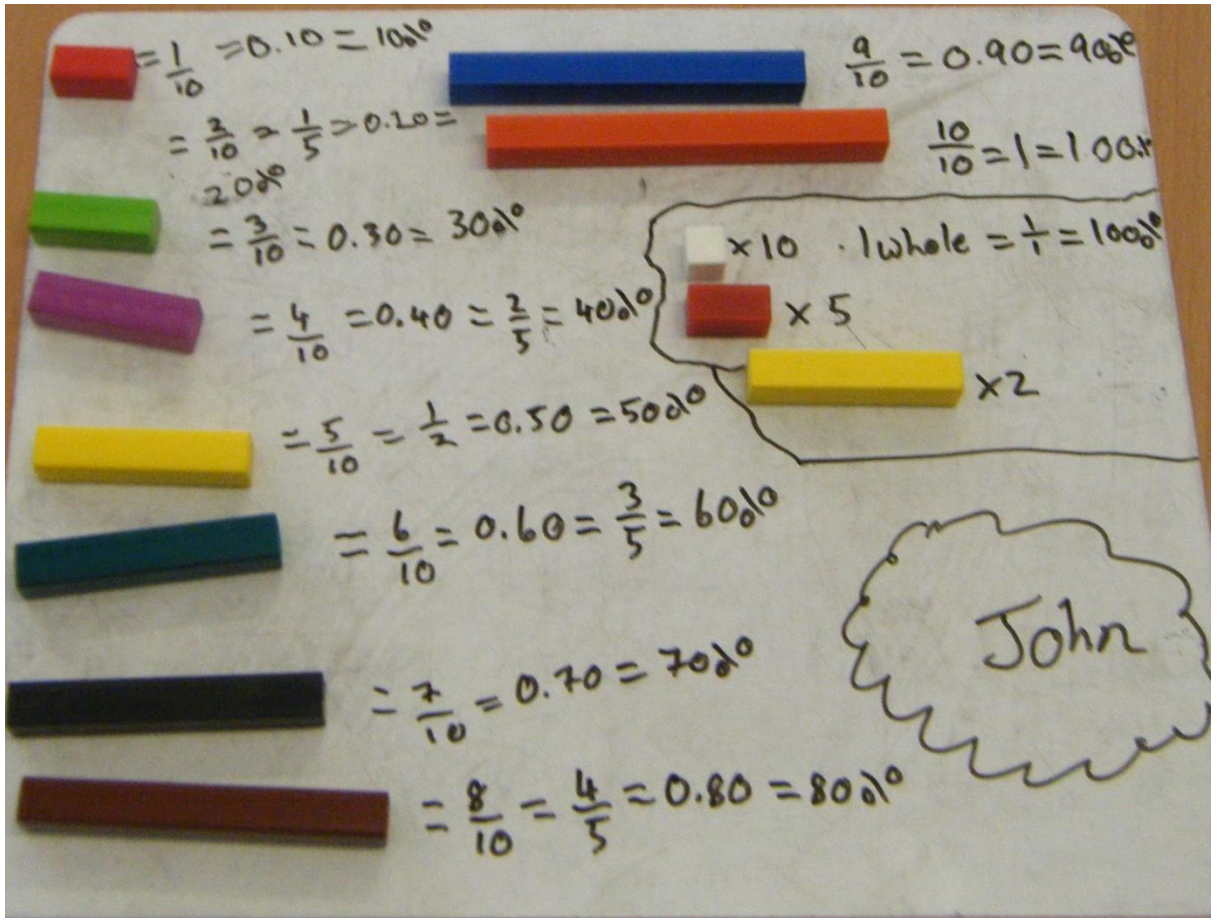


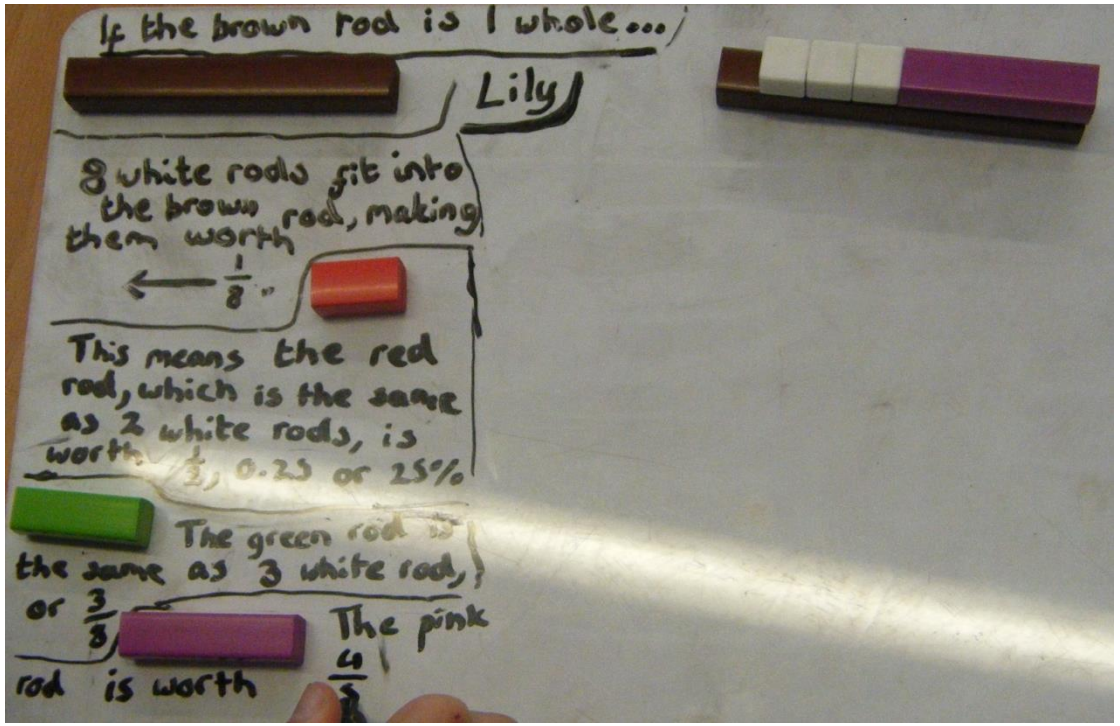
Ideas for extending children's thinking…



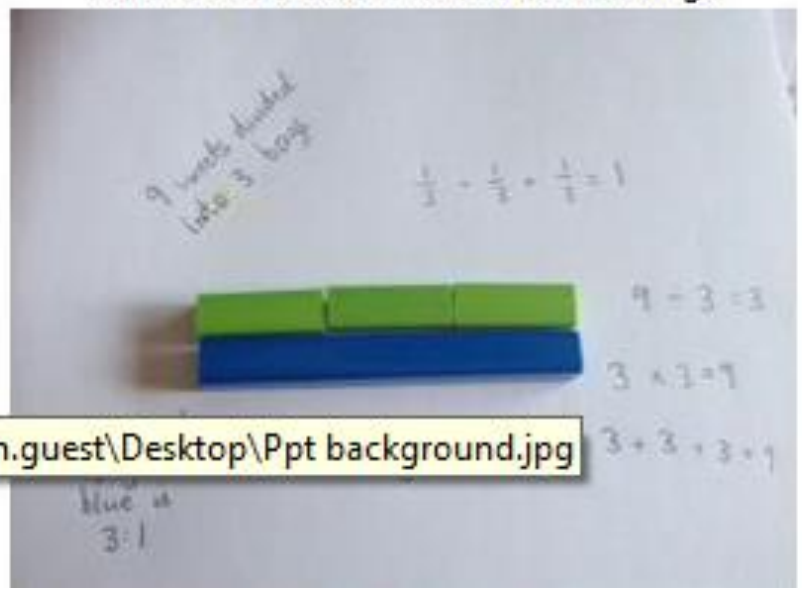








What could this bar model be showing?



By

Louise Langford and Tara Smith

Barry Primary School, Northampton.