National Centre for Excellence in the Teaching of Mathematics

MathsHUBS

Big Ideas in Mastery: Representation & Structure

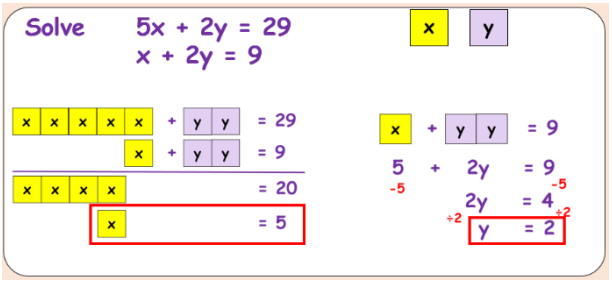
Messages

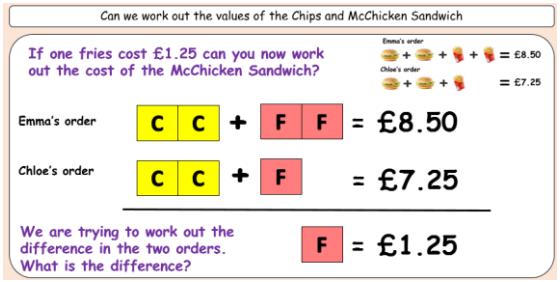
1. The representation needs to pull out the concept being taught, and in particular the key difficulty point. It exposes the structure.
2. In the end, the children need to be able to do the maths without the representation
3. A stem sentence describes the representation and helps the children move to working in the abstract ("ten tenths is equivalent to one whole") and could be seen as a representation in itself
4. There will be some key representations which the children will meet time and again
5. Pattern and structure are related but different: Children may have seen a pattern without understanding the structure which causes that pattern

For example:

Here Is an example of how I represented simultaneous equations for my year 11 foundation set.

Here student made quick improvements from the algebraic to the bar modelling structure well. I continued the concept of bar modelling until students recognized the patterns of what they were doing to make their procedure quicker and more effective.





See example worksheet