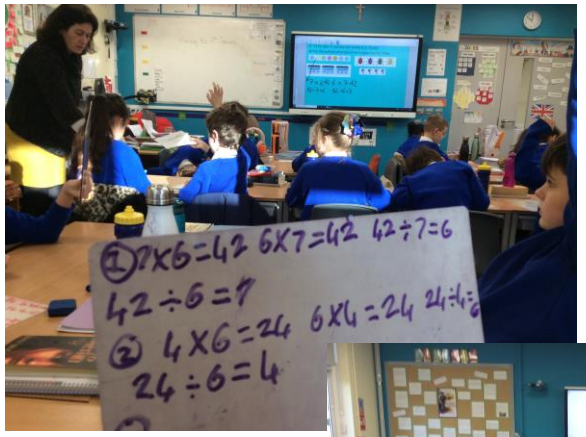
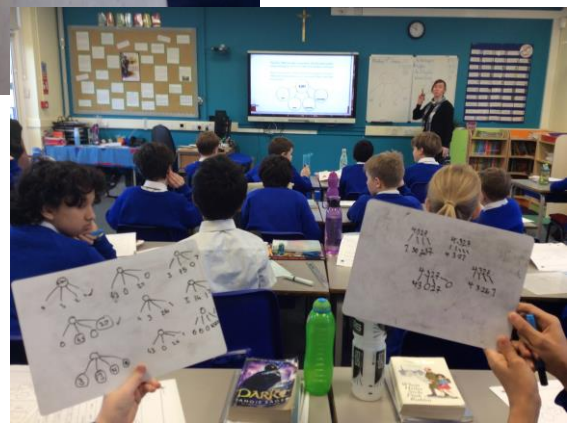
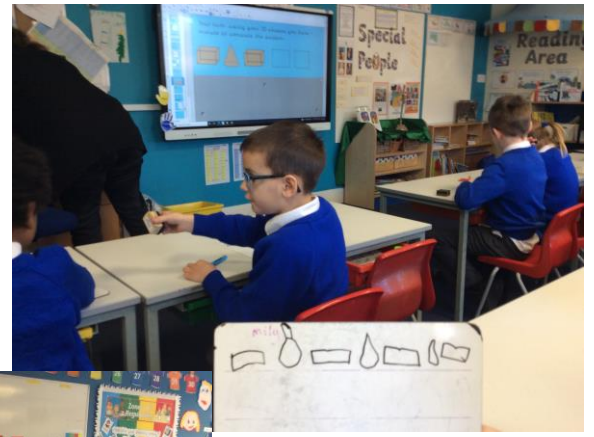
Challenge in Maths at St Edmunds

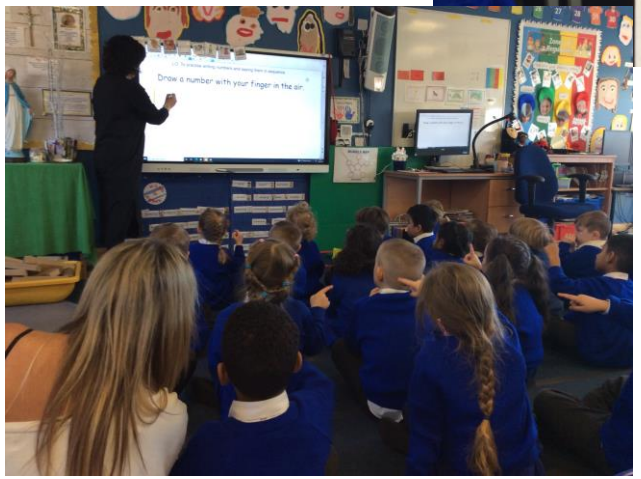
At St Edmund's, we hold high expectations for **all** pupils as we believe that **every child** can succeed in mathematics.

A whole class, mixed ability, teaching approach is adopted to avoid superficial, surface learning, to not cap any child, and to foster a deep, secure understanding of all the concepts taught.



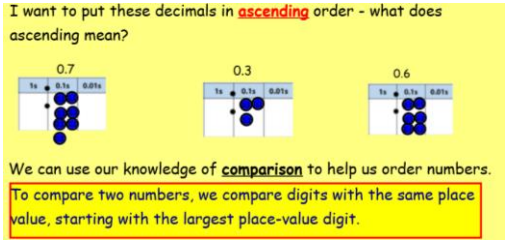


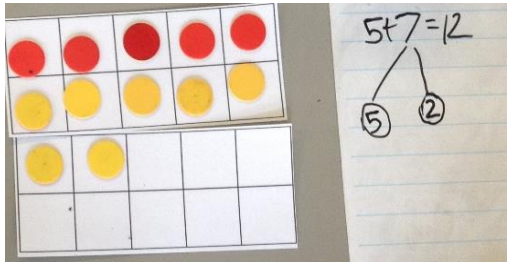


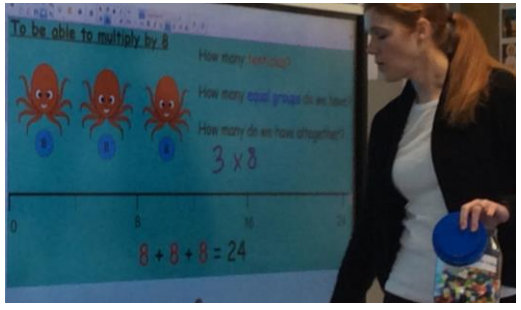


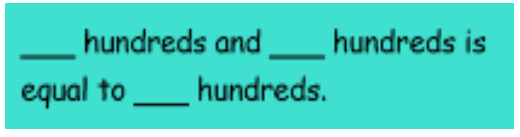
We meet the needs of all learners though…

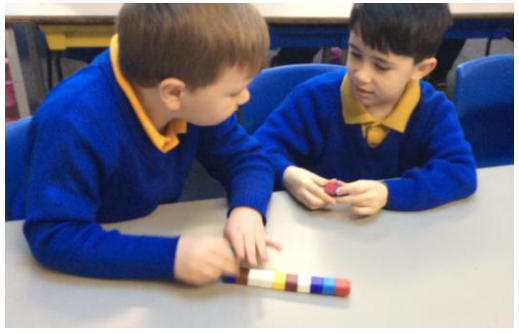
- Constant recap – of prior topics, of basic skills (bonds and multiplications) and last lesson's learning.
- Connections – making connections between prior knowledge and the skills they will need for the lesson.
- Questioning – getting the children to make connections and to explain their reasoning.
- Representations – to scaffold learning and to deepen understanding
- Resources – to support access eg. Providing the multiplications
- Well structured lessons with small step progression – this means the children are together, building on the previous slide so the next step doesn't feel too difficult.
- STEM Sentences – to scaffold the language and to draw out learning and generalisation.
- Providing immediate verbal feedback – though white board work and hot marking.
- Partner talk – this provides opportunities for children to check their answer, practice, orally rehearse, and verbally explain their reasoning.





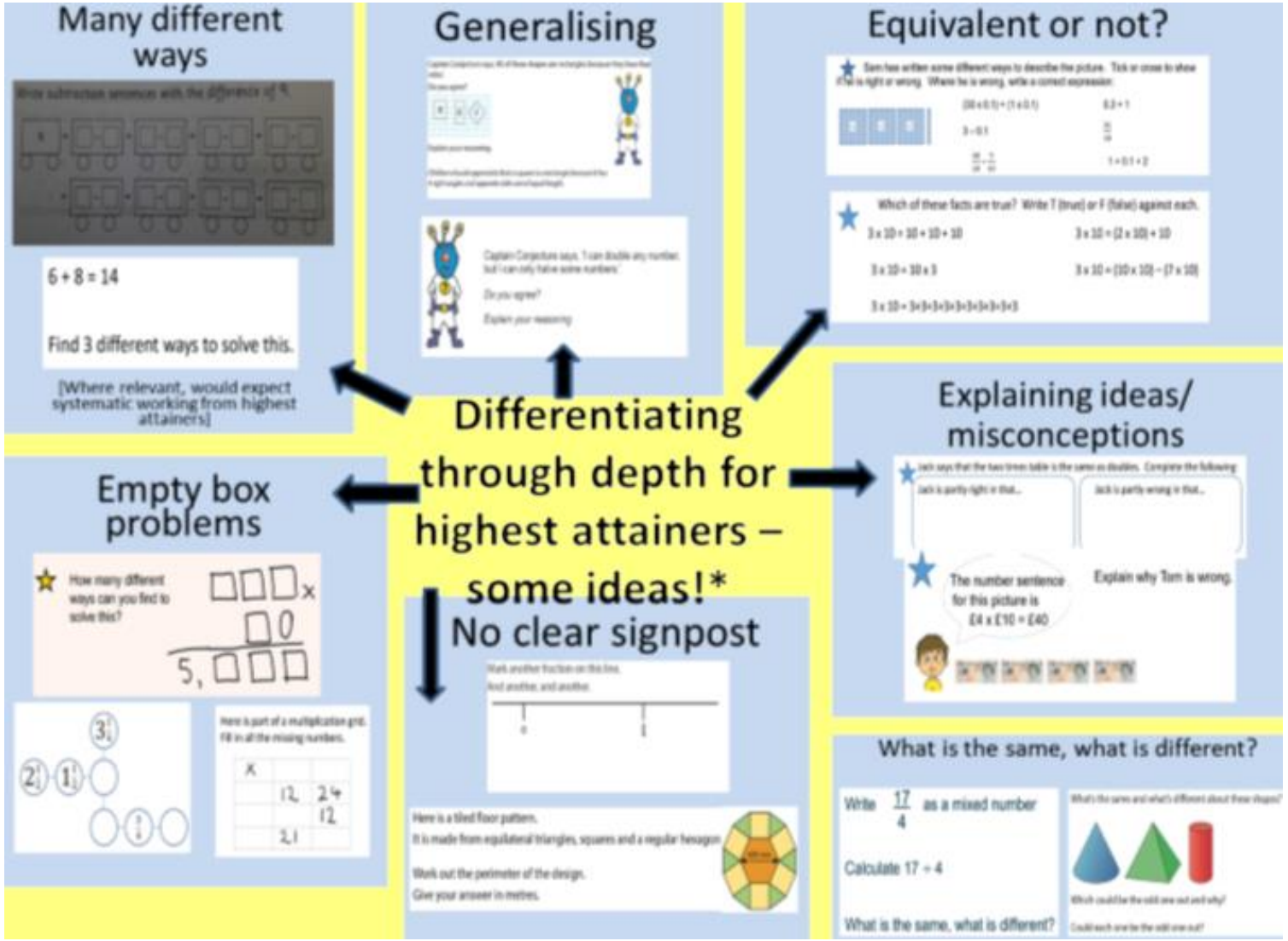






We support our lower attainers further by…

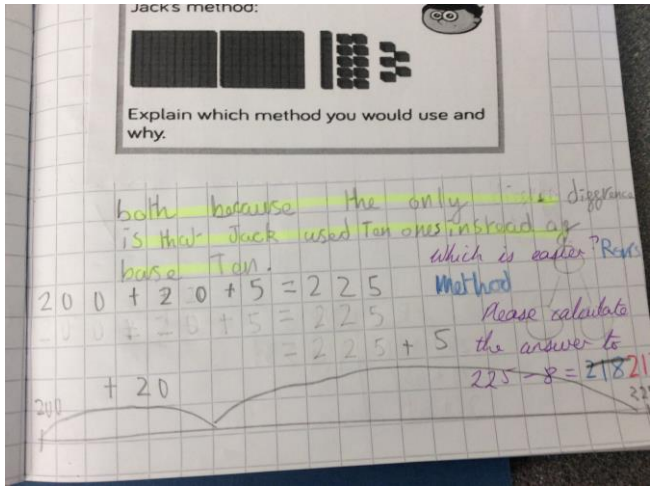
- Pre and post teaching
- Immediate intervention – highlighting which children need support within the lesson and giving them more input that lesson or at the beginning of the next lesson – this may be 1:1 or in a small group.
- Systematic structured interventions overseen by the SENDco – Catch Up Numeracy, Maths Seeds, Wave 3 Maths, 5 minute number box, Numicon Intervention Programme (KS2), Third space maths.

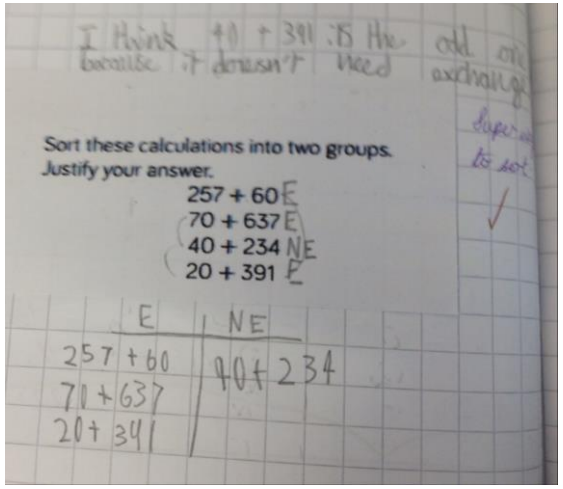


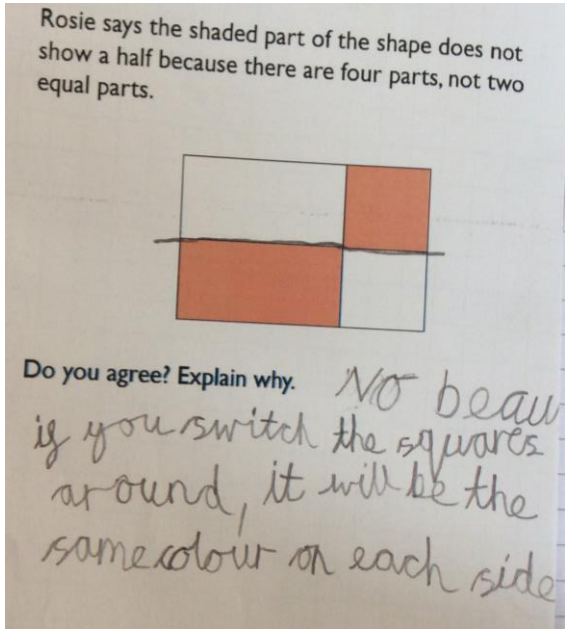
All children are challenged thought maths lessons in a variety both in the input and during independent practice. These ways include:

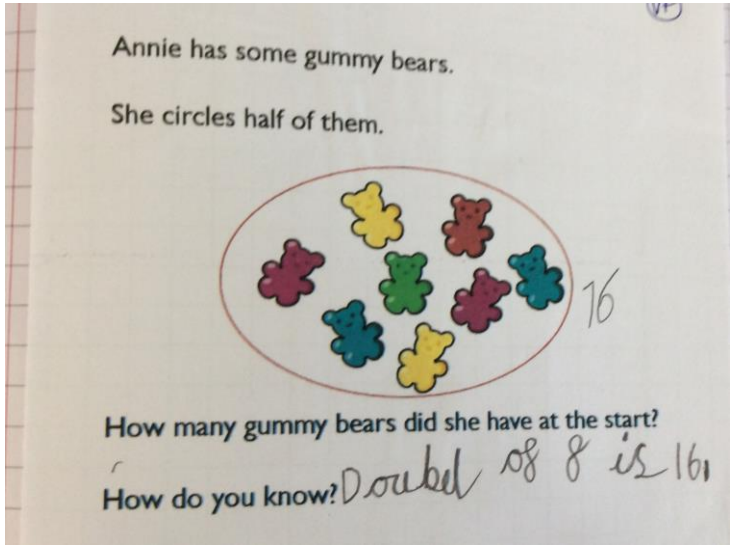
- Questioning – children explaining how they know, both orally and written.
- Variation – the children practice the same learning but in a different way. Children explaining their understanding in a different way
- Generalisations (If I know… then I know…)
- Equivalence
- Empty box problems
- No clear sign posting
- Identifying and explaining misconceptions.
- What is the same and what is different
- Pattern seeking

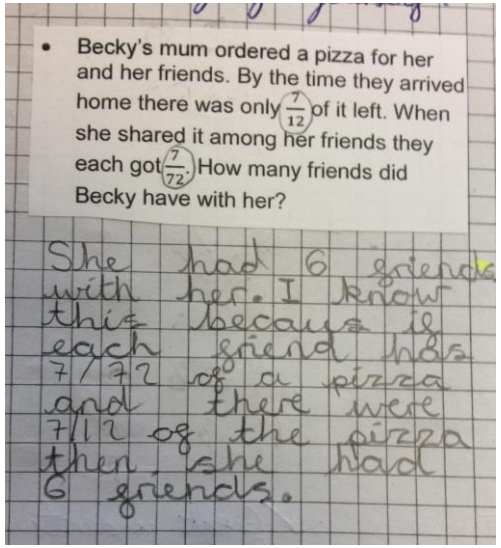
Examples of children explaining their answers using mathematical language (1)



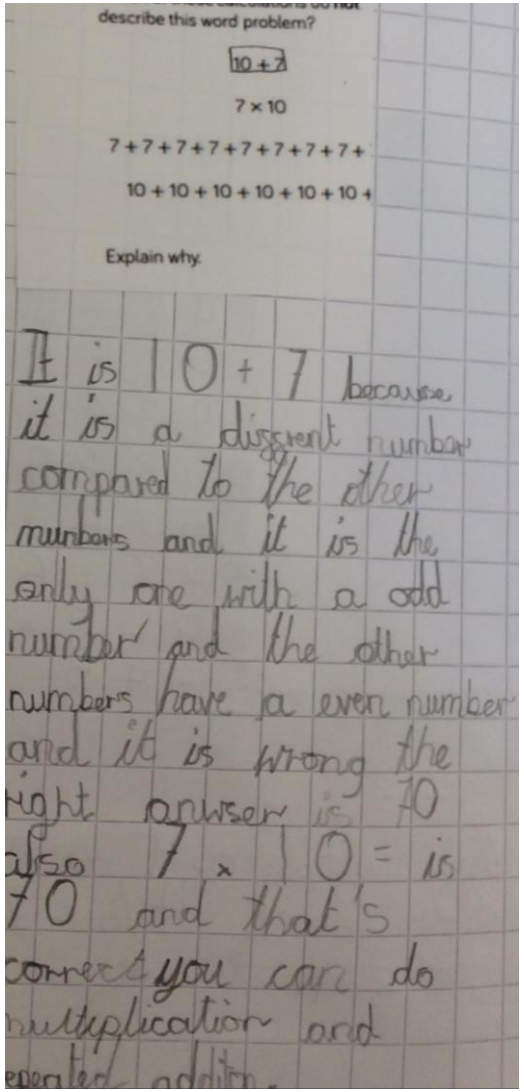




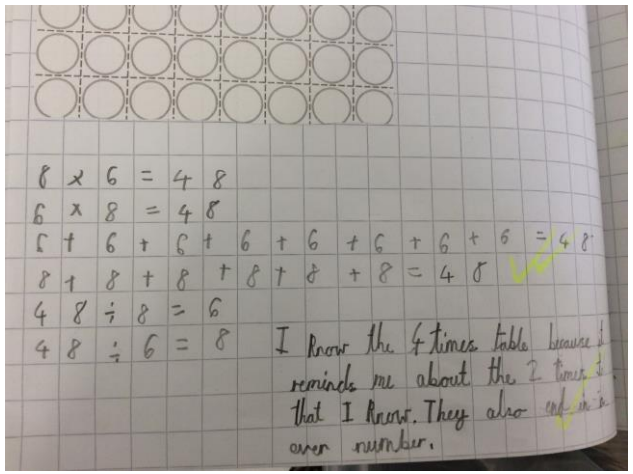


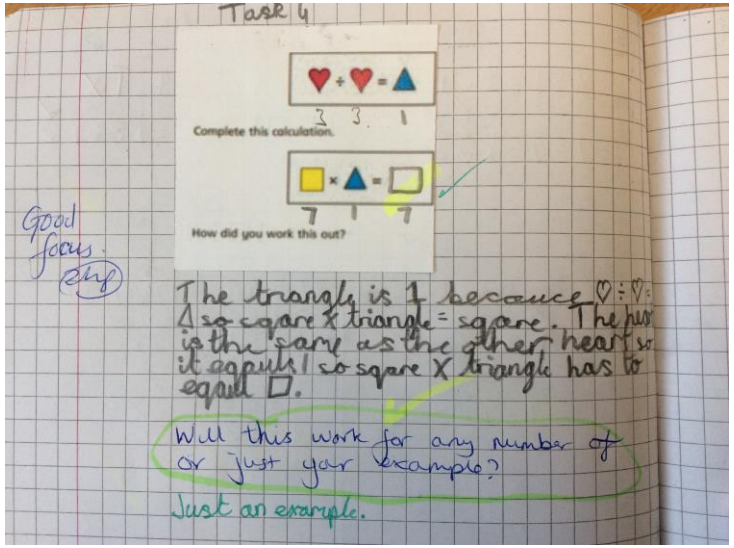


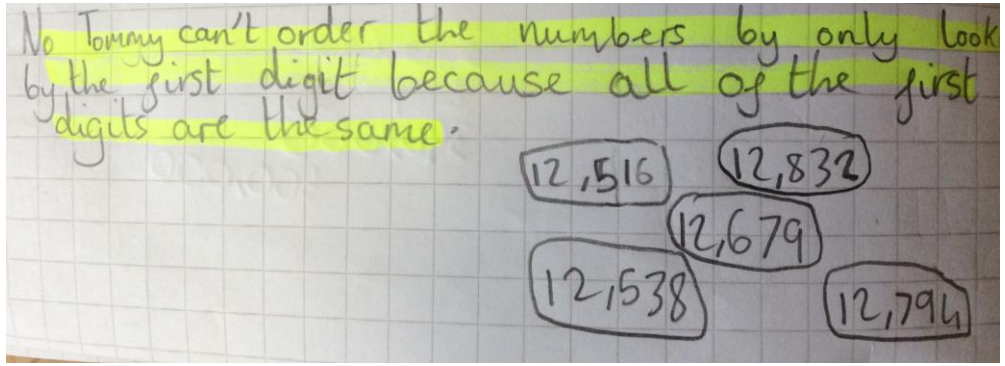
Children are encouraged to use precise and accurate mathematical vocabulary both verbally and in written work.



Examples of children explaining their answers using mathematical language (2)

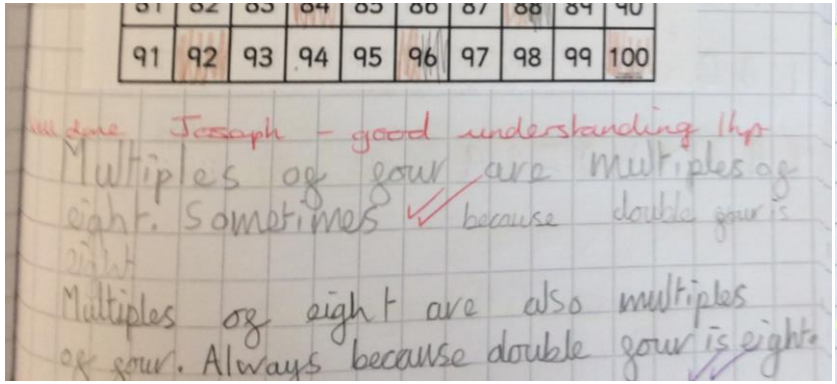


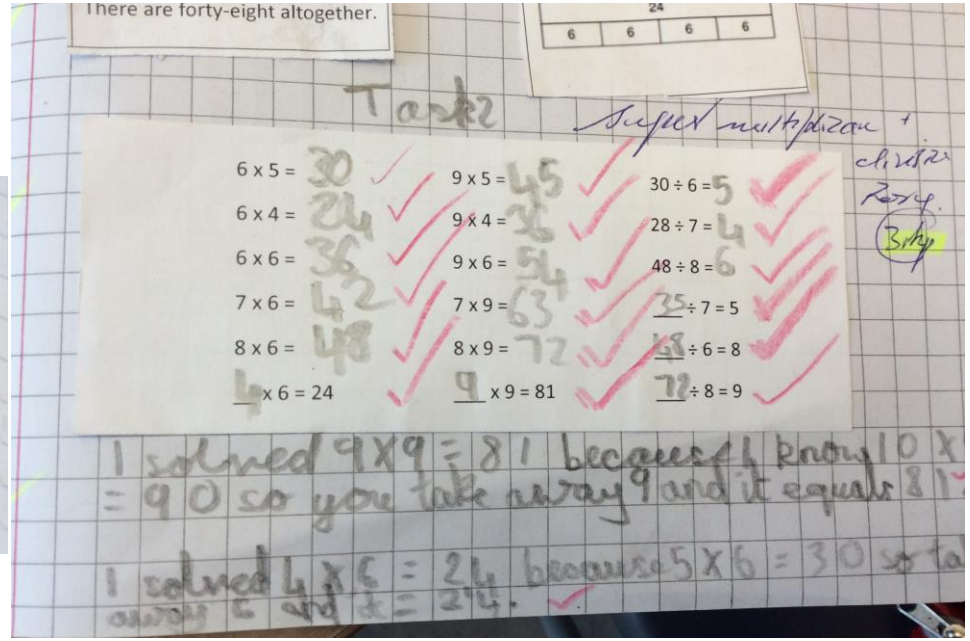




Children conjecture relationships and generalisations. They use these to prove their mathematical understanding.

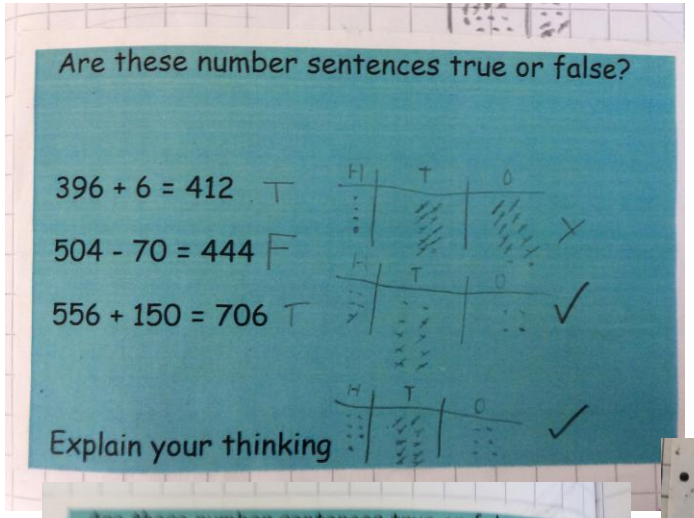
If I know… then I know…

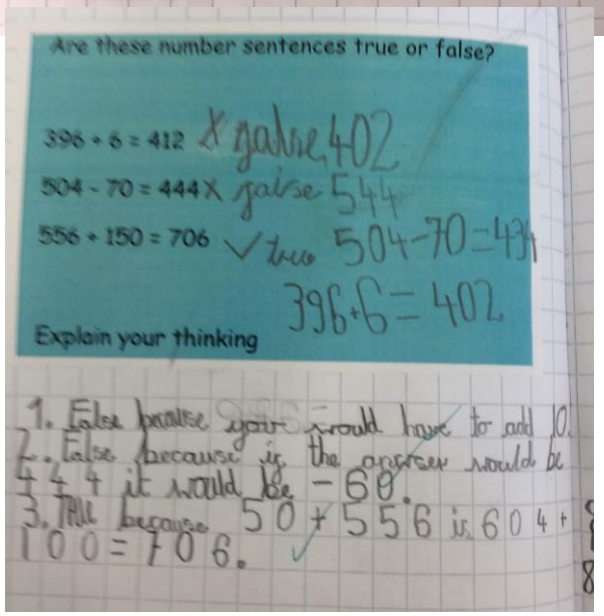


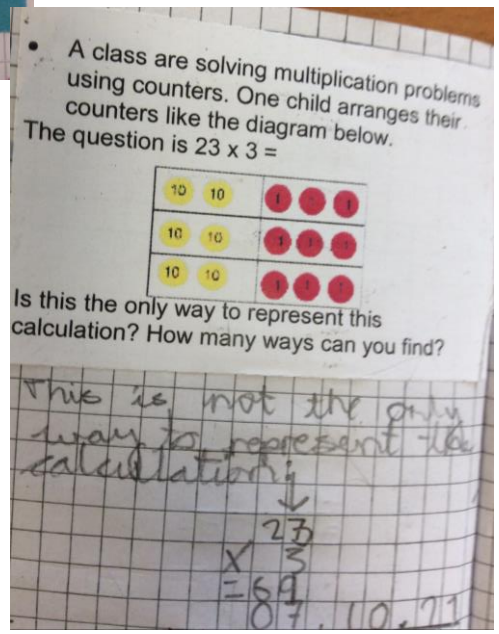


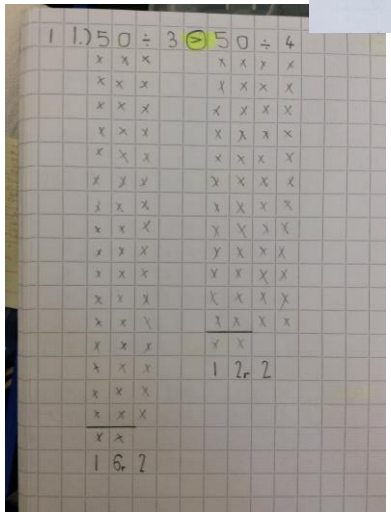
Examples of children using variation to explain their understanding in a different way

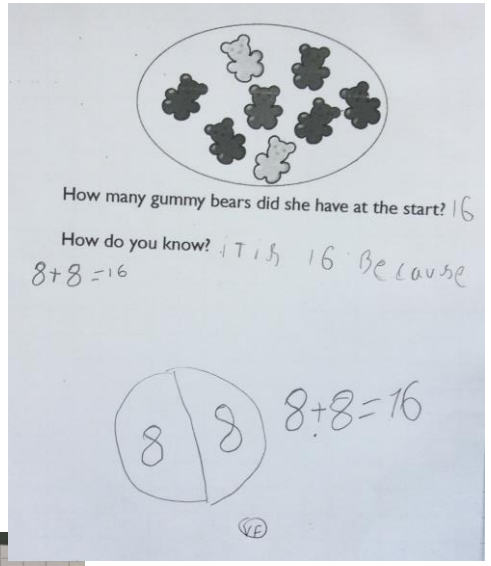
Children practice the same learning but in a different way. This might be showing it in a different eg. Using concrete resources or a pictorial representation. This could also be putting it into a different context eg. Into a money context

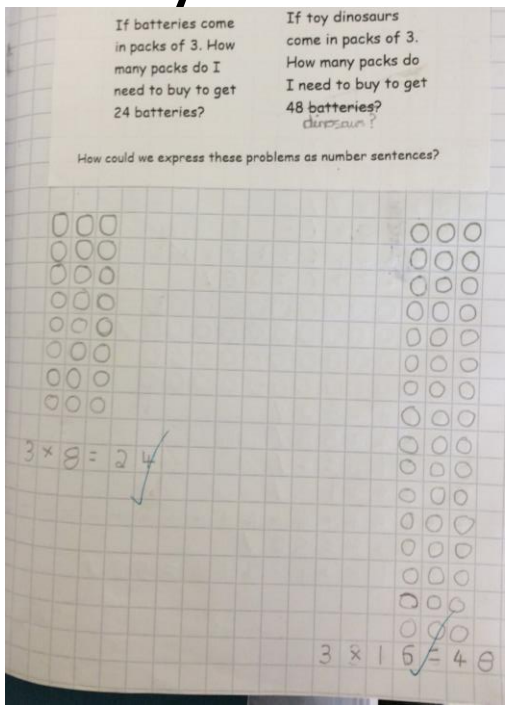


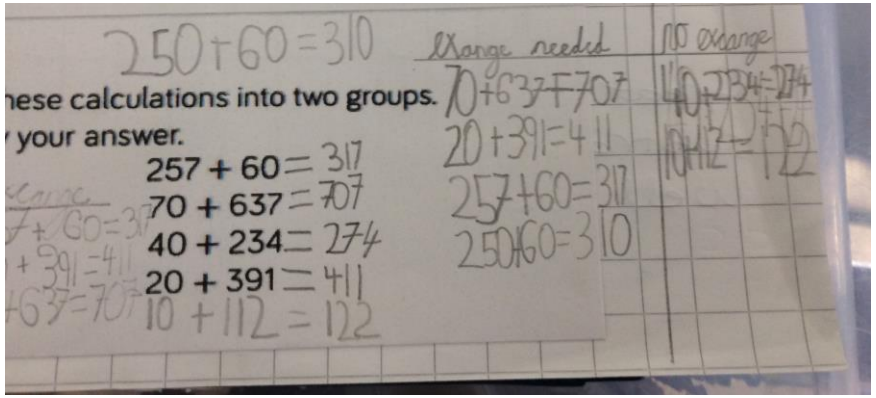




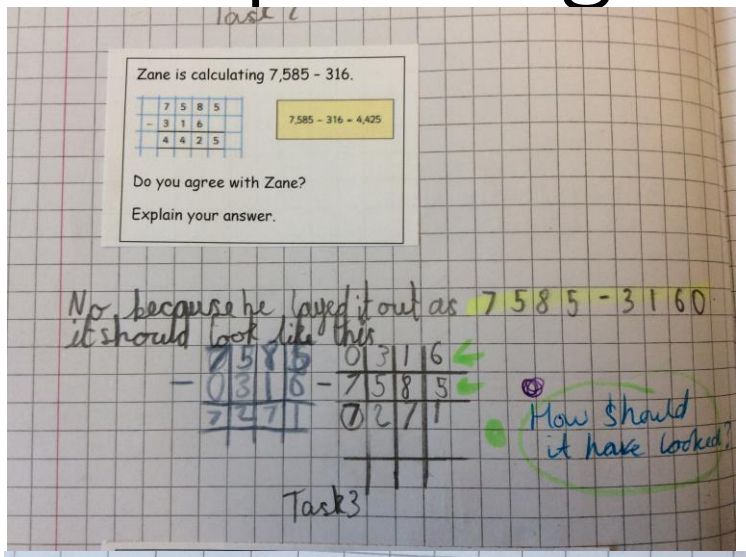




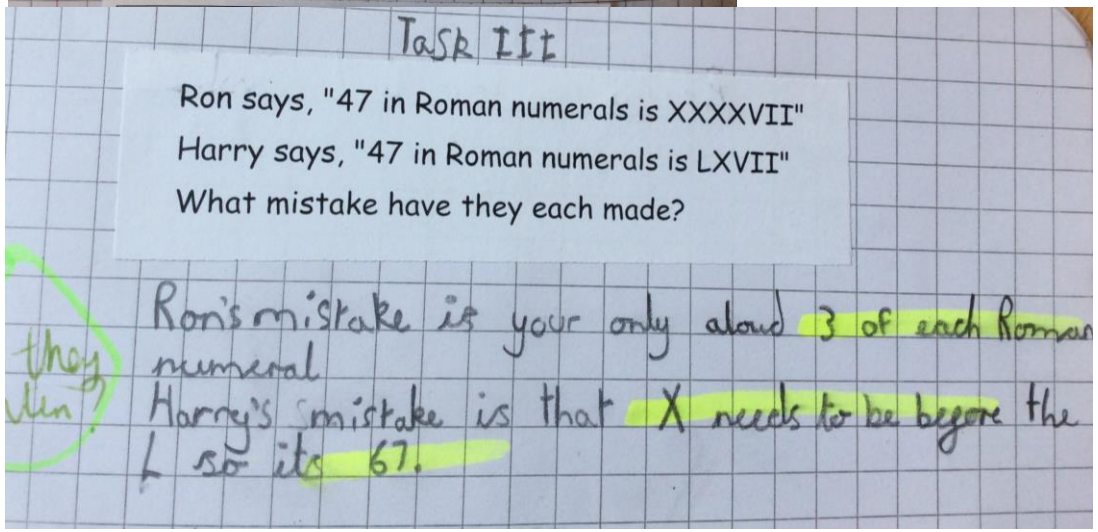


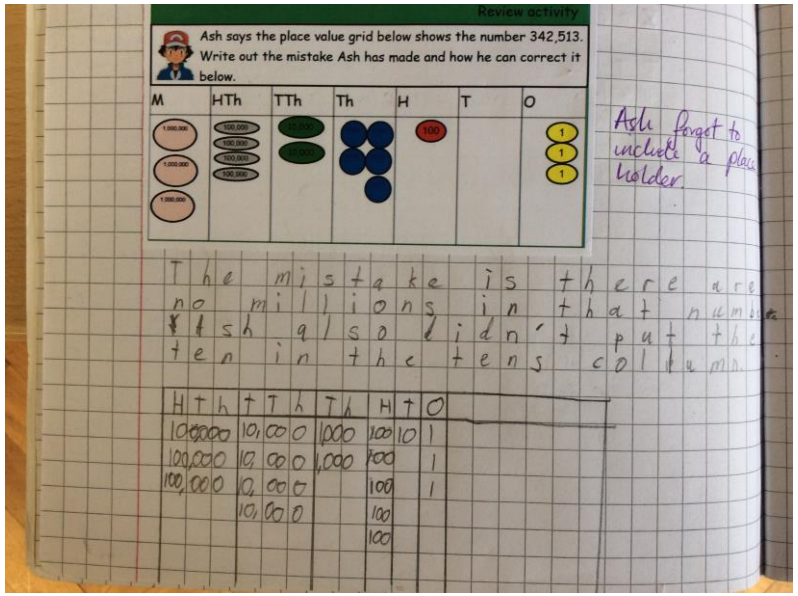


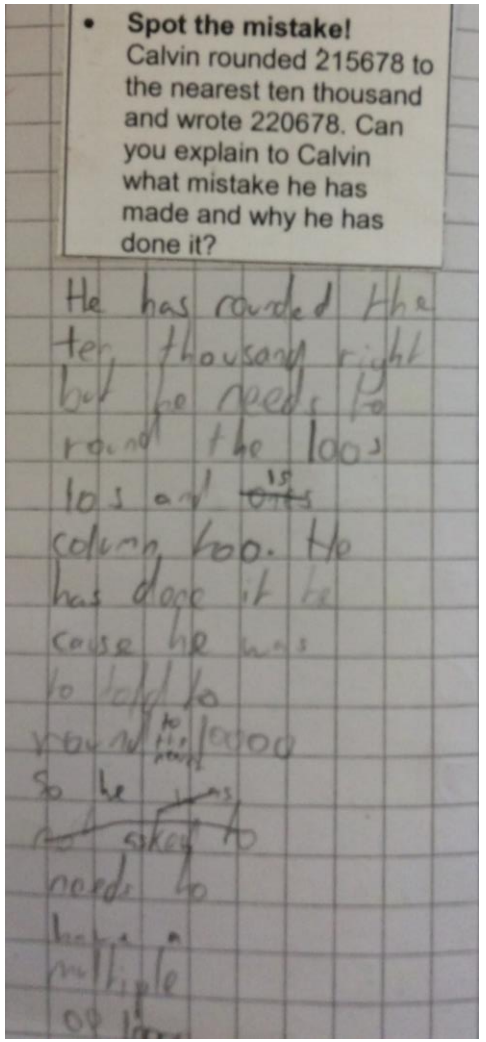
Examples of children identifying and explaining misconceptions



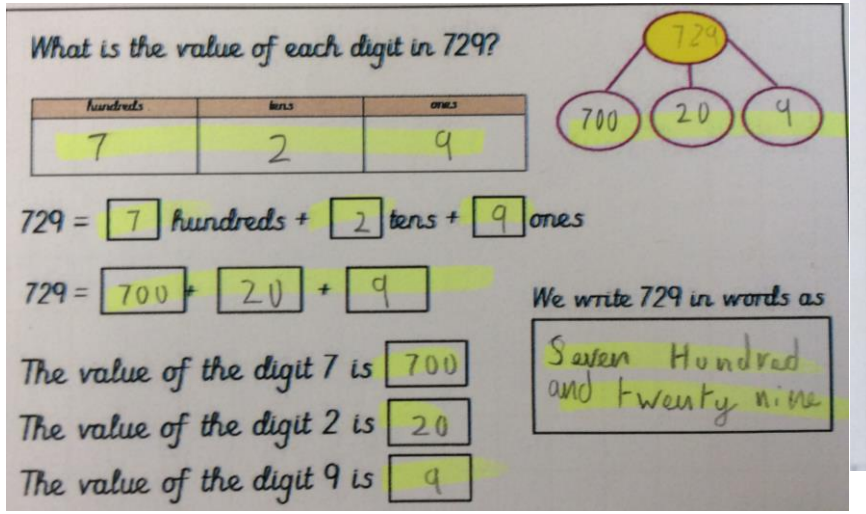
Children need to use mathematical language and previous knowledge to understand, then explain their thinking to show what would need to change in order for their to be a correct solution.

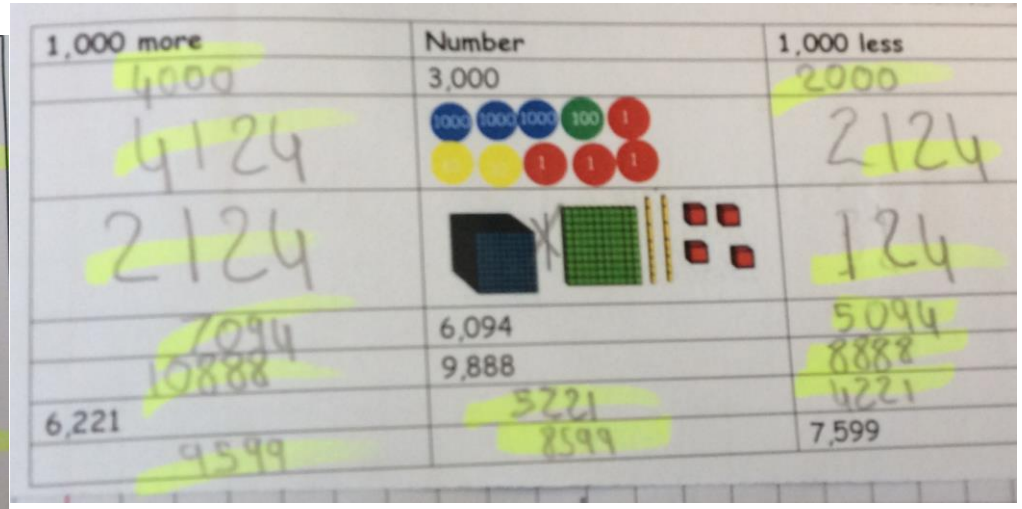


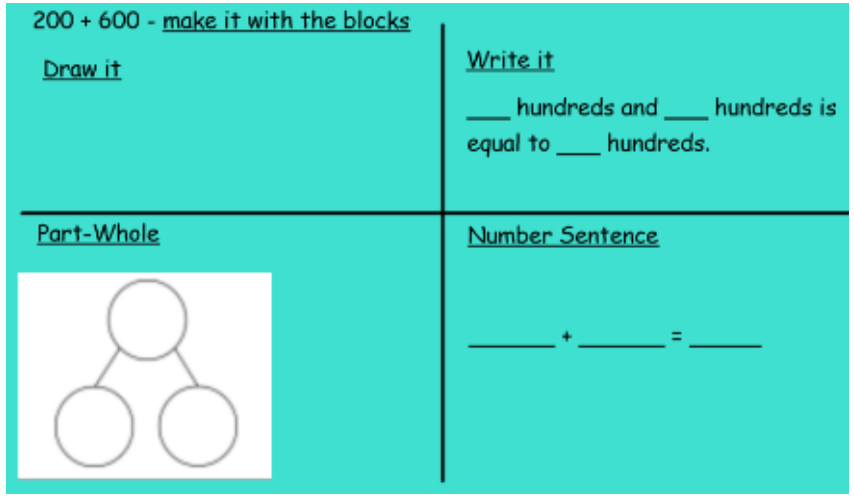


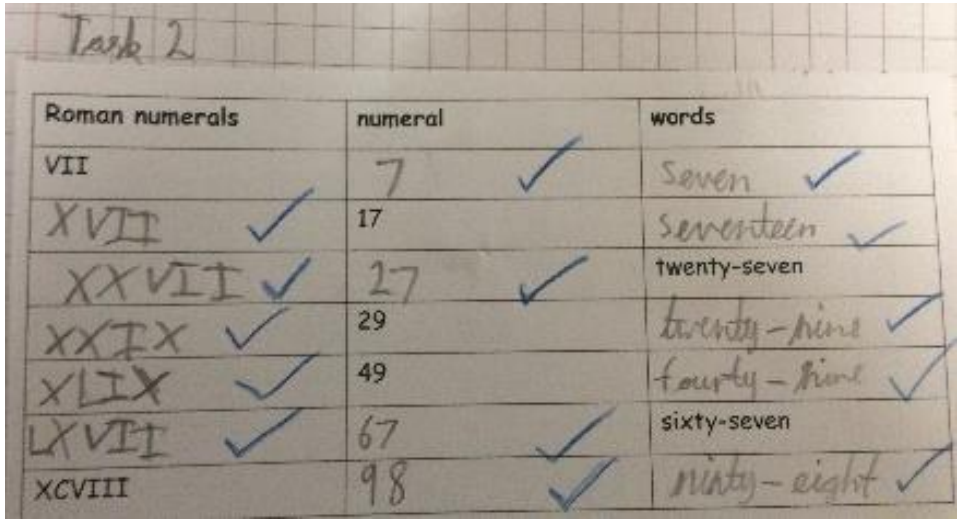


Examples of presenting the question in different ways (conceptual variation)



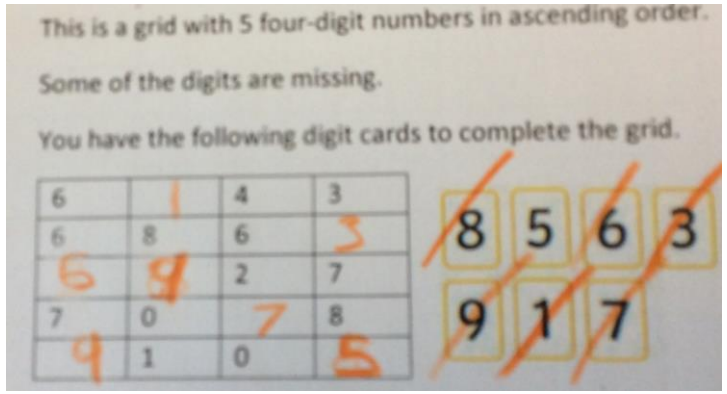


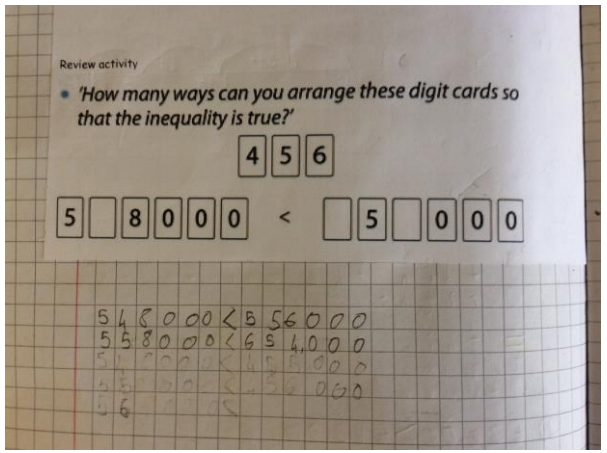


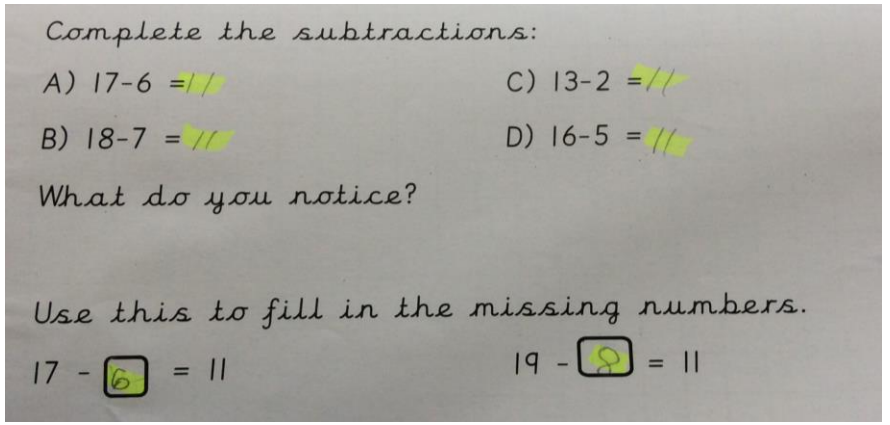


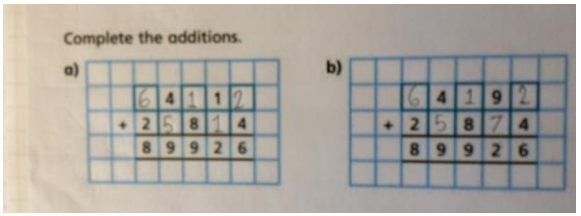
This requires children to understand that there can be different variations of the same question. The children can then make connections between these different representations.

Examples of Empty box problems

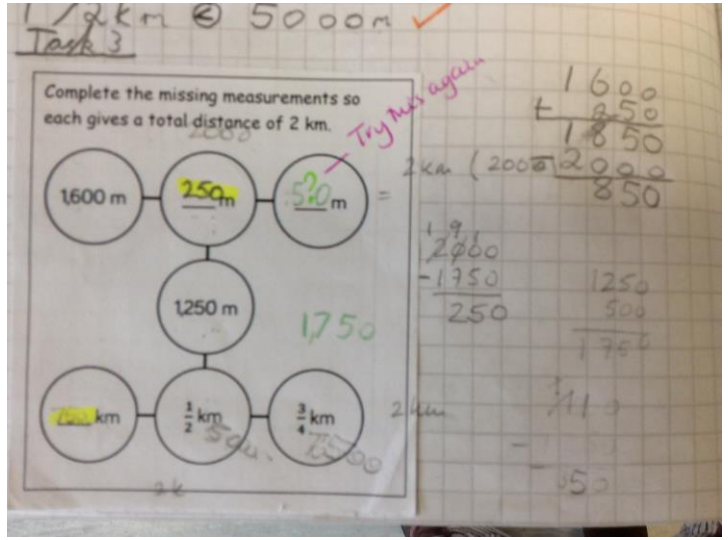


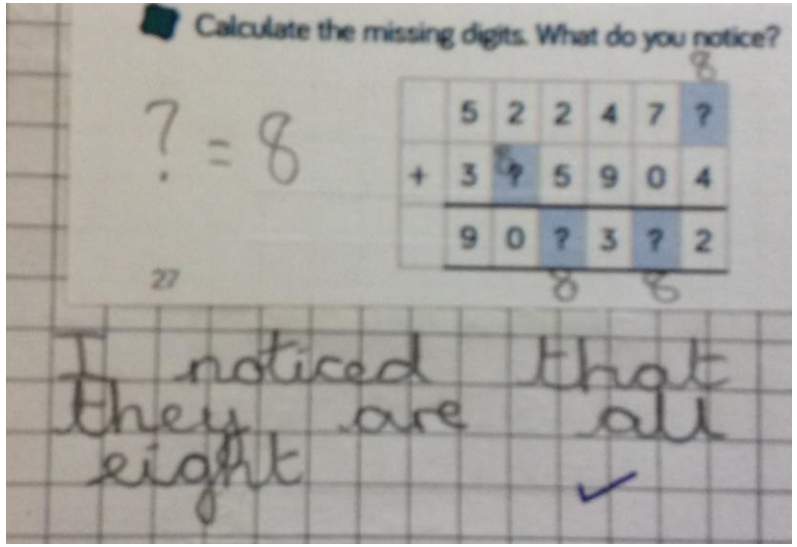




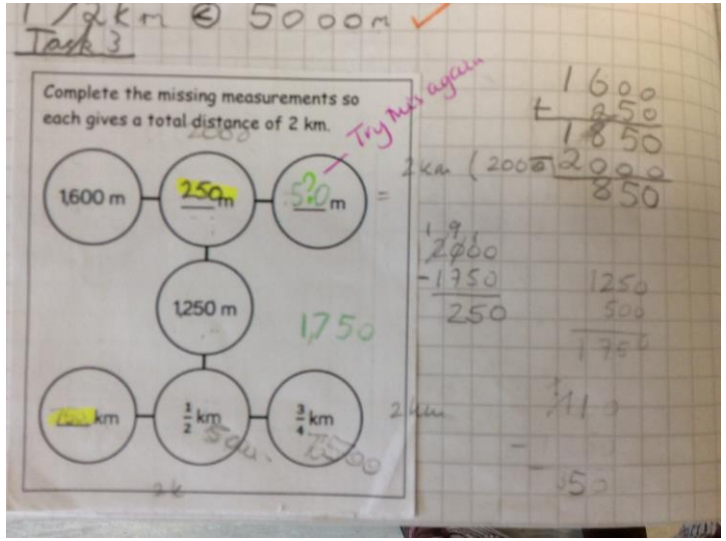


Children need to apply prior knowledge and problem solving strategies in order to find a systematic and fluent approach to find the missing component.





Examples of application to other areas of the curriculum



Linking measure to fractions