Subtraction

Year 5	Year 6
Basic to subject specific (Beck's Tiers): tens of thousands boundary, Also see previous years **Instructional vocabulary:** tick, shade, grid, missing numbers, what's the difference, the graph shows….how many, write each.., circle the, **Generalisation** Sometimes, always or never true? The difference between a number and its reverse will be a multiple of 9. What do you notice about the differences between consecutive square numbers? Investigate a – b = (a-1) – (b-1) represented visually. **Some Key Questions** What do you notice? What's the same? What's different? Can you convince me? How do you know?	**Basic to subject specific (Beck's Tiers):** See previous years **Instructional vocabulary:** tick, shade, grid, missing numbers, what's the difference, the graph shows….how many, write each.., circle the, **Generalisations** Order of operations: brackets first, then multiplication and division (left to right) before addition and subtraction (left to right). Children could learn an acrostic such as PEMDAS, or could be encouraged to design their own ways of remembering. Sometimes, always or never true? Subtracting numbers makes them smaller. **Some Key Questions** What do you notice? What's the same? What's different? Can you convince me? How do you know?
NC 2014 Add and subtract whole numbers with more than 4 digits. Add and subtract numbers mentally with increasingly large numbers Use rounding to check answers to calculations Solve addition and subtraction multi-step problems in contexts.	**NC 2014** Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Use estimation to check answers to calculations.
Mental Strategies Children should continue to count regularly, on and back, now including steps of powers of 10. The number line should continue to be used as an important image to support thinking, and the use of informal jottings should be encouraged where appropriate. Children should continue to partition numbers in different ways. They should be encouraged to choose from a range of strategies: • Counting forwards and backwards in tenths and hundredths: 1.7 + 0.55 • Reordering: 4.7 + 5.6 – 0.7, 4.7 – 0.7 + 5.6 = 4 + 5.6 • Partitioning: counting on or back - 540 + 280, 540 + 200 + 80 • Partitioning: bridging through multiples of 10: • Partitioning: compensating: 5.7 + 3.9, 5.7 + 4.0 – 0.1	**Mental Strategies** Consolidate previous years. Children should experiment with order of operations, investigating the effect of positioning the brackets in different places, e.g. 20 – 5 x 3 = 5; (20 – 5) x 3 = 45 **Written methods** As year 5, progressing to larger numbers, aiming for both conceptual understanding and procedural fluency with decomposition to be secured. **Start with one exchange before moving onto subtractions with 2 exchanges.** The bar model should be used to secure children's understanding of the whole, part, part relationship.

- Partitioning: using 'near' double: 2.5 + 2.6 is double 2.5 and add 0.1 or double 2.6 and subtract 0.1
- Partitioning: bridging through 60 to calculate a time interval: It is 11.45. How many hours and minutes is it to 15.20?
- Using known facts and place value to find related facts.

Written methods (progressing to more than 4-digits)
When understanding of the expanded method is secure, children will move on to the formal method of decomposition, which can be initially modelled with place value counters. (If unsure how to use the place values counters, refer to guidance in year 4).
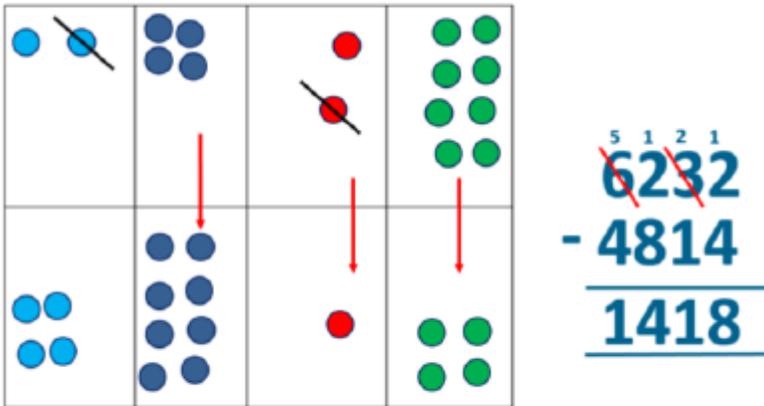
The bar model should be used to secure children's understanding of the whole, part, part relationship.
Ask children if they know the whole. Yes. Draw the bar which represents the whole.
Do you know the part? This the bar which represents the part. Do you know the other part? No. draw this bar and put ? – call it something. 234 – 123 = something (the other part). You can create different number sentences from the addition and subtraction facts.

Ask children if they know the whole. Yes. Draw the bar which represents the whole.
Do you know the part? This the bar which represents the part. Do you know the other part?
No. draw this bar and put ? – call it something. 234 – 123 = something (the other part). You can create different number sentences from the addition and subtraction facts.
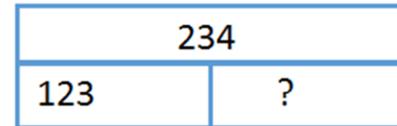
Progress to calculating with decimals, including those with different numbers of decimal places. Use place value counters if conceptual understanding is not secure.

234	
123	?

Start with one exchange before moving onto subtractions with 2 exchanges.

Progress to calculating with decimals, including those with different numbers of decimal places. Use place value counters to secure conceptual understanding.