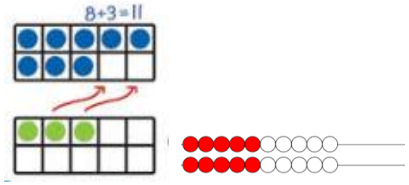
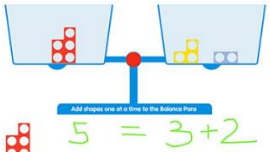
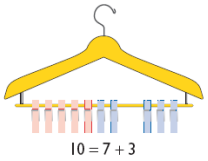
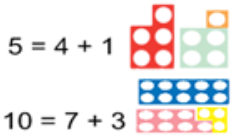
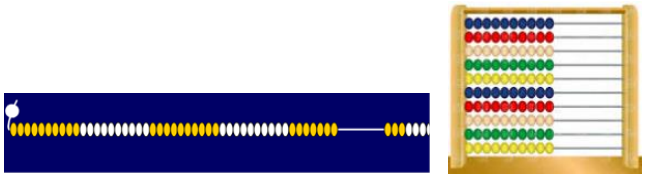
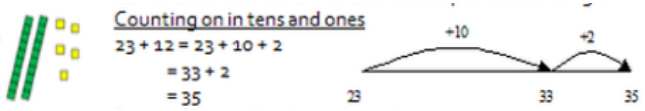
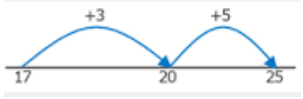
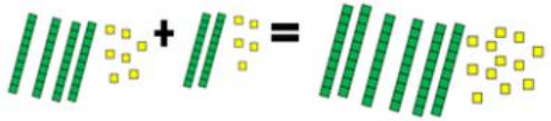
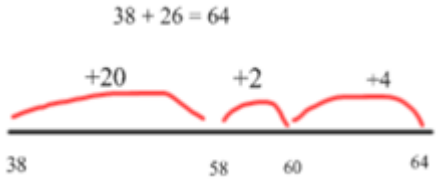
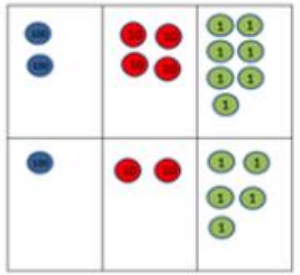
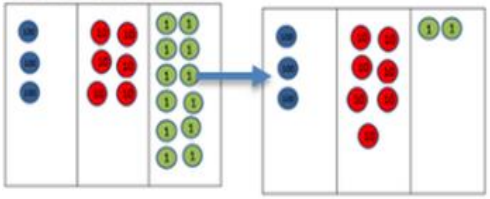
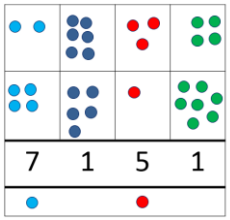
# Lyme CP Progression in Addition

| Year One | Year Two | Year Three |
|---|---|---|
| Combine groups of objects to find a total.<br> <br>Add 2 single digit numbers by counting on with a bead stick and then a number line.<br> <br>Use manipulatives to develop non counting by ones methods.(bridge through 10)<br>  <br>8+3 is 8+2+1 and 10+1=11<br>Understand + and = signs<br>Develop the concept of equality use concrete resources<br>  <br>Missing numbers need to be placed in all possible places.<br>3 + 4 = □ □ = 3 + 4<br>3 + □ = 7 7 = □ + 4<br>Know all number bonds to 10<br>  <br>  | Use concrete representations and number lines to develop counting on in 10s and ones.<br>  <br>  <br>Use manipulatives, concrete representations and number lines to bridge through multiples of ten.<br>  <br>17+8=25<br>Begin to develop written methods.<br>Partition place value equipment in different ways and recombine.<br>  <br>47+25=72<br>This leads on to<br>10+2<br>20+3<br>30+5<br>Continue to develop an understanding of =<br>And complete missing number problems<br>14 + 5 = 10 + □ 32 + □ + □ = 100 | Continue to use concrete representations and number lines to develop the ability to add two digit numbers mentally. Children need to add tens and hundreds to 3 digit numbers.<br>  <br>'Count on' the second number<br>235+124=235+100+30+4<br>Continue to develop a written method using manipulatives.<br>  <br>200 + 40 + 7<br>100 + 20 + 5<br>300 + 60 +12 = 372<br>247<br>+125<br>12<br>60<br>300<br>372<br>This leads to a compact method with exchange<br>  |

| Year 4 | Year 5 | Year 6 |
|---|---|---|
| Missing number/digit problems:<br>**Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving.<br>Children should make decisions about which is the most efficient method when calculating.<br>**Written methods (progressing to 4-digits)**<br>Expanded column addition modelled with place value counters, progressing to calculations with 4-digit numbers.<br> <br>200 + 40 + 7<br>100 + 20 + 5<br>300 + 60 +12 = 372<br>247<br>+125<br>12<br>60<br>300<br>372<br>**Compact written method**<br>Extend to numbers with at least four digits.<br>  <br>2634<br>+4517<br>7151<br>7 1 5 1<br>**Children should be able to make the choice of reverting to expanded methods if experiencing any difficulty.**<br>Extend to up to two places of decimals (same number of decimals places) and adding several numbers (with different numbers of digits).<br>72.8<br>+ 54.6<br>127.4<br>1 1 | Missing number/digit problems:<br>**Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving. Children should practise with increasingly large numbers to aid fluency e.g. 12462 + 2300 = 14762<br>Continue to make decisions about which is the most efficient method when calculating.<br>**Written methods (progressing to more than 4-digits)**<br>As year 4, progressing when understanding of the expanded method is secure, children will move on to the formal columnar method for whole numbers and decimal numbers as an efficient written algorithm.<br>172.83<br>+ 54.68<br>227.51<br>1 1 1<br>Place value counters can be used alongside the columnar method to develop understanding of addition with decimal numbers. | Missing number/digit problems:<br>**Mental methods** should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving.<br>Continue to make decisions about which is the most efficient method when calculating.<br>**Written methods**<br>As year 5, progressing to larger numbers, aiming for both conceptual understanding and procedural fluency with columnar method to be secured.<br>Continue calculating with decimals, including those with different numbers of decimal places<br>**Problem Solving**<br>Teachers should ensure that pupils have the opportunity to apply their knowledge in a variety of contexts and problems (exploring cross curricular links) to deepen their understanding. |