

Notes on Sarah (Y1)

Sarah, in September, demonstrates an ability to count objects. She is not yet routinely using fingers as counting objects and it is therefore an appropriate time to encourage her to do so. She would appear not to have fully conserved number yet, since she sees nothing illogical in accepting that  $5+5$  and  $5+7$  can both be 10. She has not yet constructed a model for subtraction but seems to grasp the one offered to her with confidence and meaning.

8 months later, with addition, she is convinced of the good sense of counting on from whichever of the two numbers is larger. She is already demonstrating an early understanding of place value, recognising that numbers that accompany 10 do not need to be counted. With a bit of encouragement, she is able to transform  $10+11$  into  $(10+10) +1$ .

Sarah has now grasped that there are various ways of responding to the subtraction sign other than counting out the larger number of objects, removing the smaller number, and counting how many are left. She recognises that it is also to do with comparison of numbers so that when the two numbers are very close (e.g.  $7-6$ ), she refrains from routinely counting, and produces the number by which 7 is more than 6.

In working on  $9-7$ , she demonstrates she is able to check her answer using a different method. She corrects herself when she displays 7 fingers - doing that automatically (recognising 7 as 5 fingers and 2 fingers).

Her uncertainty about her strategy for solving  $10-4$  finally reveals that her speed was not due to quick counting but to her recalling an addition fact. This crucial awareness will need to be reinforced in the coming months. As the range of number bonds that she can recall increases, she will need to be reminded how those same facts can be used to derive answers to subtraction or difference sums (e.g.  $9-3 = 6$  because  $3+6$  is 9;  $20-15 = 5$  because  $15+5$  is 20).

She has spent the intervening period using her fingers to develop a sense of what subtraction means. It is now appropriate to persuade her that she can manage without them by thinking about the numbers and transforming them in some way.