Objective: I use my knowledge of place value and partitioning to mentally subtract.

NPV1: add and subtract numbers with up to 4 digits

Assessment Question 1:

Prior Learning:

	Question 1: I can use partitioning to mentally subtract by counting back.	I feel
Addition + Subtraction		

Calculate the answer to each sum.

a) 345 - 10 =

b) 567 - 30 =

c) 315 - 20 =

d) 674 – 32 =

e) 613 - 110 =

f) 178 – 27 =

g) 812 – 220 =

h) 1021 - 200 =

Teacher Input Ideas:

Recap with the children the value of different amounts. Place 2456 on the board and encourage the children to say the value of each digit, such as: two thousand, four hundred , fifty and six.

Once the children show understanding of the value of each digit, ask the children how partitioning the amounts into hundreds, tens and ones can help when calculating.

Place 256 onto the board. If I want to subtract 30 mentally what would I do?

Discuss in partners how they will subtract 30. What will they do? If some children demonstrated difficulty in the prior learning assessment they may benefit from having a 200 to 300 hundreds square or a place value chart and place value digits.

Ask the children what we know about the number 256? What do we know about the number 30? What happens when we subtract a multiple of ten or hundred? Why is only the tens digit going to change in this sum?

We want to count back 3 lots of ten. Model using a place value chart to show that only the tens will change. I know that 50 – 30 will be 20 (or 5 tens – 3 tens = 2 tens).

We can do this easily mentally. You may also want to recap and model mental subtraction when subtracting 10 from 301. What will change now? How do we know? Why is this harder to subtract? You may want to look at this alongside objects such as sweets organised into sticks of ten and packs of hundred (ten lots of ten) to show that when we count back we are having to change the hundreds. I want to take away ten from here however I have no tens in the tens column so I will have to exchange one of my hundreds. I now have one less hundred so this digit will change to 2, and I have ten lots of ten so now I can take ten away. I still have the one on its own.

For those children ready to use partitioning and counting back for different 2 and 3 digit numbers model go the children counting back in chunks.

Often using a number line to show the chunks that the children are mentally counting back can help. Additionally, you may want to model to some children making jottings:

325 – 13

315 (model what you are thinking but do not write down, ten less would be 315,

312 (then 3 less will be twelve)

Discuss why you are not using the paper to write:

325 – 20 = 315

315 – 3 = 312

Practice Activities

Purple Practice: Most suited for children who show difficulty in answering Question 1 a and b of the prior learning assessment and will benefit from subtracting amounts mentally without crossing boundaries of ten or hundred.

Practical: On sheet one the children are provided with 3 digit amounts to secure subtracting numbers mentally. The purple blocks contain numbers that can have amounts subtracted easily without any crossing of ten or hundred boundaries. The second sheet contains purple blocks that can be cut up and the children can explore creating different sums subtracting a purple block on sheet two, from a purple block on sheet one. All of the combinations will only require the children to count back in ones, tens and hundreds and do not require the children to cross a boundaries of 10 or 100

Green Practice: Most suited for children who show difficulty in Question 1 c and e of the prior learning assessment and will benefit from subtracting multiples of hundred, ten and one using their knowledge of place value, crossing boundaries of hundred and ten.

Using resource sheets one and two from the purple activity, children can create their own sums by subtracting a green block on sheet two from the purple and green blocks on sheet one. The children can create sums and mentally count back to subtract amounts. The children will be able to cross boundaries of ten and hundred when counting back, using the green blocks on sheet 2.

Yellow Practice: Most suited for children who show some accuracy in Question 1 d, f, g and h.

For the yellow activity, the children are provided with blocks on the sheet and these can be cut up so that the children can create their own subtraction sums. The children are to select a purple block and subtract it from a green block. The children will need to partition and chunk the amounts when counting back mentally.

Mastery Fluency:

The children are provided with a grid of blocks containing subtraction sums and answers. The children are to work out if the sum is correct or incorrect using mental strategies to calculate . They are to work their way around the grid to find the correct route from the start to the end.

326 – 10 = 316	287 – 100 = 187	326 – 10 = 316	564 – 60 = 504
204 – 120 = 80	989 – 20 = 979	690 – 500 = 200	450 – 230 = 220
196 – 32 = 164	567 – 310 = 257	212 – 30 = 182	78 – 12 = 66
256 – 136 = 120	500 – 130 = 470	1240 – 20 = 1260	1459 – 100 = 1449
891 – 110 = 781	236 – 40 = 196	789 – 250 = 539	300 – 150 = 150

Purple Practice : Sheet 1

LO: I can partition and count back for subtraction

356	289	598
174	652	486
309	501	217
611	402	623

BRICKWORK
Mathematics

Pick a card to subtract the amount from the cards on sheet one.

- 5	- 2	- 30
- 20	- 100	- 10
- 10	- 20	- 9
- 7	- 30	- 8

BRICKWORK
Mathematics

thousands	hundreds	tens	ones

BRICKWORK
Mathematics

Pick a purple block and subtract it from a green block. Explore different combinations and sums.

- 23	- 130	- 52
- 201	- 190	- 77
673	545	312
210	795	824

Mastery

Fluency

Look at each sum and work out if the answer is correct. Colour in only correct blocks to find your way from the start to the finish.

START

326 - 10 = 316	287 - 100 = 187	326 - 10 = 316	564 – 60 = 504
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196 - 32 = 164	567 - 310 = 257	212 - 30 = 182	78 - 12 = 66
256 - 136 = 120	500 - 130 = 470	1240 - 20 = 1260	1459 - 100 = 1449
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FINISH