Addition Prior Learning Assessment Question 3:

Objective: I use my knowledge of doubling and partitioning to mentally add.

NC NAS 2: add and subtract numbers mentally with increasingly large numbers

Teacher Input Ideas:

Recap with the children mental methods that they have learnt so far. Place whole amounts and decimal amounts on to the board to work out mentally and discuss.

Such as 807 + 12 + 13 = 45 + 50 = 0.5 + 4.5 + 1.9 =

You can also place sums such as above with the answers and children to work out which calculations are correct and which are incorrect. Encourage children to discuss the importance of mental methods.

Now look at amounts such as 23 + 72 + 25 = ask the children to explain how they have got the answer. What did they notice? What strategies did they use? Discuss if anyone saw a link between 25 and 23? What about 25 and 72? Children may suggest that 23 and 25 are close and that they know that 25 doubled is 50. They may also know that 75 and 25 make 100. They may notice that 23 could be partitioned and the 3 could be added to the 72 to give the children 75. Some children may suggest partitioning all numbers and adding the tens first and then the ones. Encourage the children to demonstrate and share ideas as a class/group so that many different methods can be discussed. Encourage the children to explain which methods they feel work best for them. Which method would they borrow from a friend?

Introduce using near doubles:

23 + 25 = ? I know that 25 add 25 is 50. I can use my knowledge of rounding here. I have added 2 to make 25, so 2 less is 48.

Repeat with other amounts such as 350 + 360

I know that 350 + 350 = 700, ten more from the 360 is 710.

Also model how partitioning can be used to mentally add. Such as: 300 and 300 is 600. 50 and 60 is 110. Altogether that make 710. Ask the children to discuss which method they prefer. Why? This is the third lesson of suggested mental methods, therefore the children should now be at a stage where they can select which methods to use for different types of questions to help them to answer these mentally with speed.

Practice Activities

Purple Practice: Most suited for children who made errors in question 3 of the prior learning assessment and will benefit from the securing different mental strategies through a practical activity.

Practical: the children to be given different lengths of paper/ ribbon to measure with a metre stick. The amounts should be displayed on the back or covered so that the children are encouraged to measure with accuracy and then can use these amounts to add different lengths together mentally. The children to use partitioning or doubling to mentally add the amounts, selecting the most appropriate strategies. Children may also apply other skills such as rounding and number bonds if they feel that it is suitable.

Suggested lengths of paper/ribbon:

41 cm, 40 cm, 57 cm , 27cm, 15cm and 17 cm, 75 cm 56cm, 76 cm, 150cm and 160cm, 135 cm, 187 cm 221cm, 56 cm 43 cm,

Challenge: add 2 or 3 strips together that will be longer than 1.5 m. (Fluency opportunity of applying knowledge of cm to metre conversion)

Green Practice: Most suited for children who will benefit from adding amounts mentally using their knowledge of partitioning and near doubles.

The children are presented with questions where they can partition the amounts or use their knowledge of near doubling. The children should also be able to suggest if rounding or number bond knowledge can be used here too. This activity encourages the children to use a variety of mental strategies to help them to calculate efficiently. Look out for any children that are still over reliant on one strategy and are unable to suggest which strategies can be used in different calculations.

Yellow Practice: Most suited for children who are ready to apply a range of strategies for mental addition.

Practical game: the number cards on the yellow task sheets can be cut up for the children to place in a pile or scatter over the table. With a partner, the children to select 2 cards at a time to add. Both children to perform the calculation and see who can get the answer first by using an efficient method. After each question, children can record points and share with each other their strategy for working out the sum.

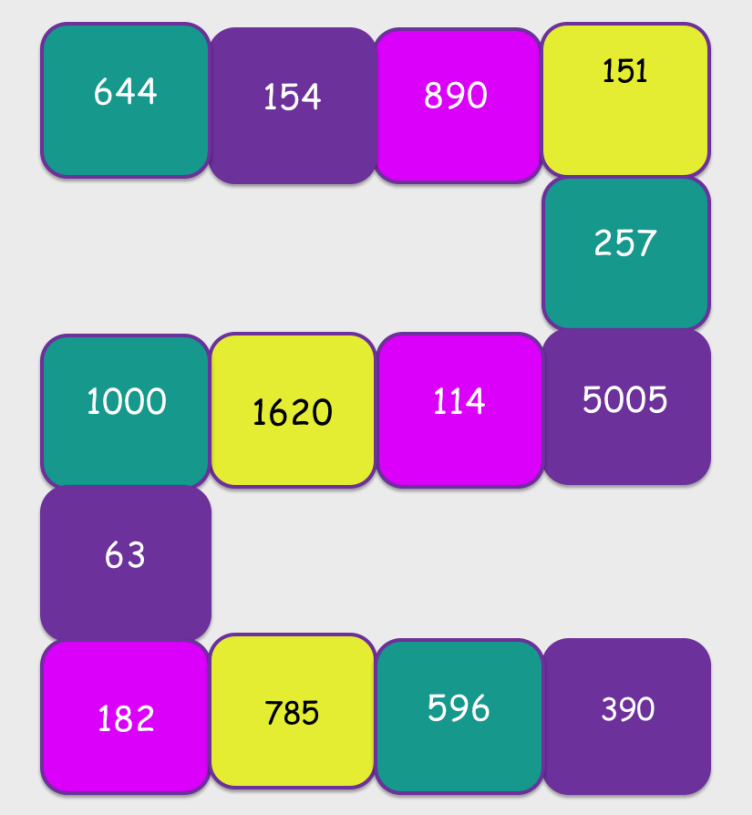
Mastery For this mastery task, the children have the opportunity to demonstrate fluency with selecting appropriate mental methods for addition. The children should select a variety of methods to work through the questions as quickly as possible. The children will all have different ways that they have worked out the same question, so ensure the children have time to explain their method to others.

Answers

Green:

1) 1675	2) 97	3)100	4)3463
5)1583	6)347	7)621	8)2071
9) 54	10)30	11) 144	

Mastery:



BRICKWORK Mathematics

Green Activity

LO: I can use mental methods to add amounts.

Look at each sum. Use mental methods to add.

TIP:
partitioning
doubling
rounding
number bonds

1) 850 + 825 =

2) 35 + 24 + 38 =

3) 63 + 12 + 25 =

4) 1700 + 1720 + 43 =

5) 541 + 529 + 513 =

6) 160 + 24 + 163 =

7) 180 + 190 + 251 =

8) 1701 + 312 + 58 =

9) 12 + 13 + 14 + 15 =

10) 6 + 7 + 8 + 9 =

11) 21 + 31 + 41 + 51 =

BRICKWORK Mathematics

Yellow Activity (page 1)

LO: I can select efficient mental methods to add amounts.

163	148
217	84
53	126
812	1003
299	101
499	298

BRICKWORK Mathematics

Yellow Activity (page 2)

LO: I can select efficient mental methods to add amounts.

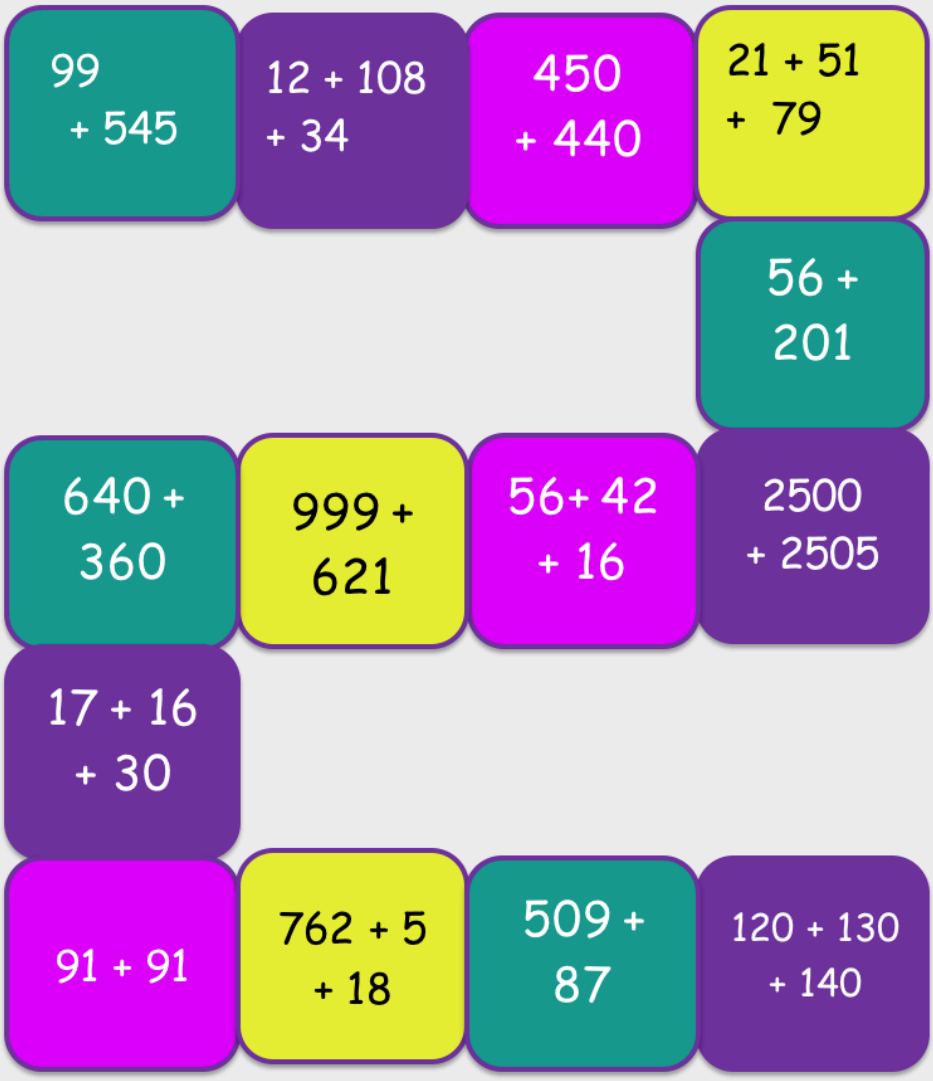
301	6001
500	140
141	56
54	16
17	103

BRICKWORK Mathematics

Mastery

Fluency

Work your way along the track, finding the answers mentally. You may want to challenge yourself by timing how long it takes. Can you complete the whole track in under 2 minutes?



Finished?

Discuss with a friend how you worked out some of the sums.

- Did you use the same methods as each other?
- Did you use a variety of methods along your journey?
- Can you find a more efficient method for one of the sums?