Addition Prior Learning Assessment : Question 5 and 6
LO: I can use a formal written method to add sets of numbers together
NC: NAS1 add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Assessment Questions:

Prior Learning:

Addition & Subtraction	Question 5: I can use a written method to add amounts	I feel

Show me how to work out:

a)

```
    8 2 4
  + 1 7 3
  _____

  _____
```

b) 3 1 8 + 81 =

Prior Learning:

Addition & Subtraction	Question 6: I am beginning to use a formal method to add 3 digit amounts.	I feel

Complete these sums :

a)   456 + 153 =

b)   519 + 875 =

<u>Teacher Input Ideas:</u> (the input & activities may need to be split over 2 or 3 lessons)

<u>No carrying (Question 5)</u>
Around the room scatter different 2 and 3 digit amounts. Children could select options of adding these together.

Model to the children estimating what the answer will be close to and encourage children to discuss why approximation is useful. Model the thought process and rounding to help with this. Discuss whether you should round to the nearest hundred or ten when looking at a variety of examples.

Model adding 2 lots of 3 digit amounts together using images or objects to begin with for children who demonstrate difficulty with adding 3 digit amounts in Question 5 of the prior learning assessment.

For example: 213 add 321
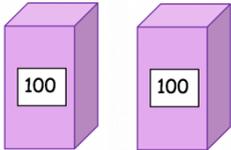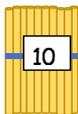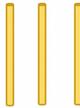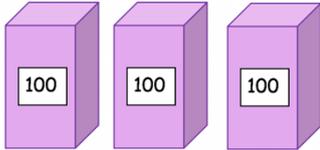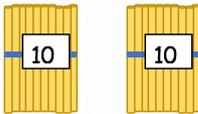
hundreds	tens	ones
5	3	4

model alongside with digits

hundreds	tens	ones
2	1	3
3	2	1
5	3	4

+

Then when the children are ready move to using the formal method.

h t o

2 1 3

3 2 1

5 3 4

Model using amounts that have a mixture of 2 and 3 digits so that the children need to think about place value and laying out the sum accurately. Also for those children needing a challenge, model adding 3 amounts together using a formal method.

Carrying – Question 6

Model carrying amounts once a new ten, hundred, thousand etc. has been made, ensuring that children can explain the process and why we carry different numbers. If children are using vocabulary such as carry the 1, ensure that they know that this is worth 1 ten, 1 hundred, etc. Practical modelling or writing above the columns place value titles may help.

435 + 237=

hundreds	tens	ones

+
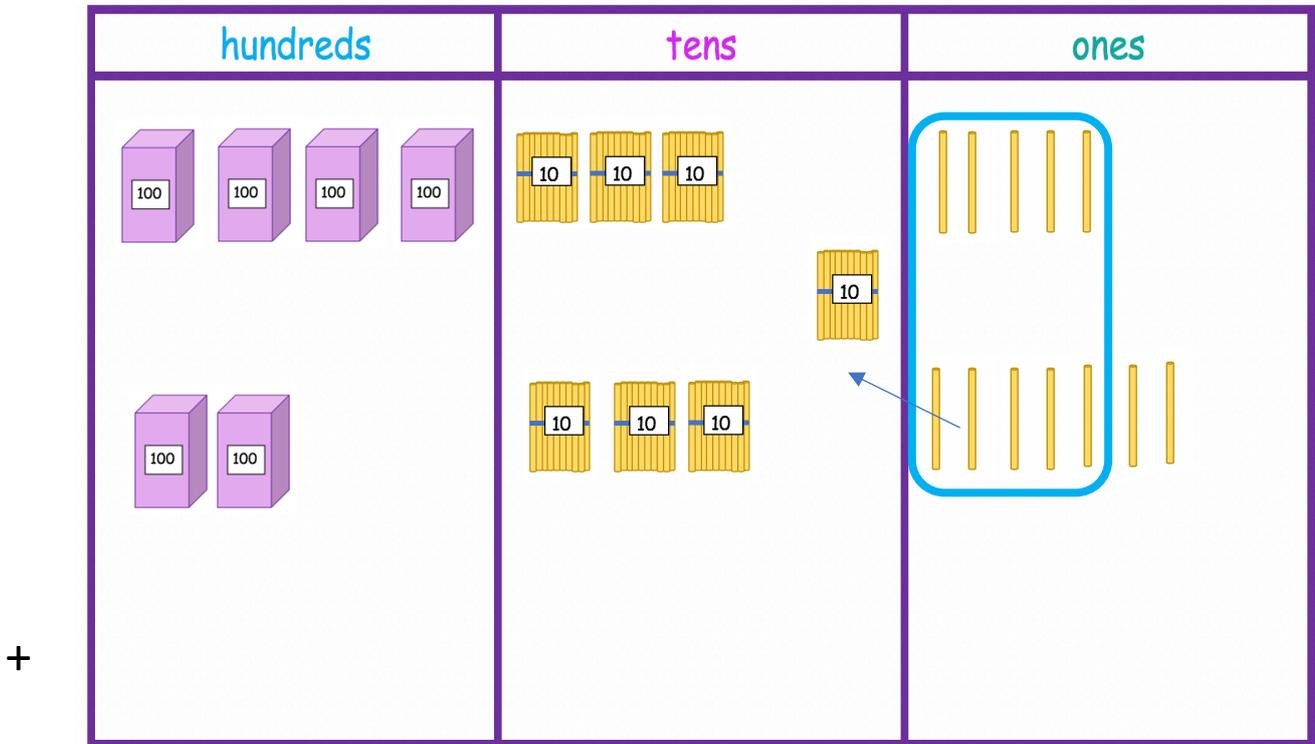
6   7   2

Explore using the formal written method including carrying hundreds to make a group of thousand.

675+ 432

th h t o

  6 7 5

+ 4 3 2
_____

11 0 7
_____
1   1

Practice Activities

Each activity section contains an activity to introduce or secure the use of the formal addition method. Each activity section contains 2 suggestions of activities:

- The first is to support building on the gaps identified in Question 5 which contained no carrying.
- The second activity is to support building on the gaps identified in Question 6, where carrying was needed.

Purple Practice 1 : Most suited for children who will benefit from practically adding amounts using images on a place value chart before moving to the use of a formal method.

Activity 1: (no carrying)

Using sheet one, present the children with the sums on the blocks. Encourage the children to add the amounts together using the images provided and the place value chart, as modelled in the input section. Children to use images to add amounts together on the place value chart to help them to think about partitioning the number and adding parts together at a time. When the children show understanding here, remove images and encourage the children to place the digits onto the place value chart to add together.

Activity 2 (carrying)

Using the forth sheet, present the children with the amounts on the blocks to add together. These sums encourage the children to explore how carrying works. Use the place value chart and images to help the children to see how tens and hundreds are formed when some amounts are added.

Green Practice: Most suited for children who demonstrate some errors using a formal written method in Question 5 and 6 of the prior learning assessment and will benefit from support with laying out sums to use a formal method.

Activity 1: (no carrying)

The children are provided with 2 and 3 digit amounts to add together which are laid out already for the children to work out the answer. Encourage the children to discuss what they are doing at each step and to discuss why the sums are laid out in this way. In these sums the children are only presented with amounts that do not have any carrying.

Activity 2: (carrying)

The children are provided with 3 digit amounts to add together which are laid out already for the children to work out the answer. In these sums the children are presented with amounts that require the children to carry either a ten or hundred into the next column, and will develop the children's understanding. Encourage the children to discuss what they are doing at each step and to discuss why the sums are laid out in this way.

Yellow Practice Most suited for children who are ready to add different amounts of digits and 3 sets of numbers together.

Activity 1: (No carrying)

This activity requires the children to approximate which sets of numbers will reach the target number of 1000 when added together and to explore different combinations. Ensure the children demonstrate a good knowledge of place value when laying out the sum as a formal written method to add the amounts. Some children may also suggest when a written method is required and when a mental method can be used.

Activity 2: (carrying)

For this activity the children are presented with 3 amounts to add together. Some of the questions do require the children to carry tens and hundreds when using the formal written method. The children are presented with 3 scores for each child on the task sheet. The children are to work out each child's score in order to work out who is the winner. The children are also presented with a challenge of ordering the amounts from the highest to lowest once they have calculated each child's score. (Place Value fluency)

Mastery : Reasoning and fluency

The children are presented with 3 different statements about adding odd and even numbers. The children are to select one view and explore if this is true or false. Encourage the children to prove through explaining what they notice and investigating with their own sums. The children should be encouraged to apply mental and written addition methods.

Key questions

- How many sums will you create to prove if the opinion is true or false?
- Which numbers will you pick?
- Does it make a difference if you choose 2 or 3 digit amounts?
- How can you explain and prove the child is correct or incorrect?

Answers

Purple:

Activity 1

355	449
755	758
649	949
791	995

Activity 2

690	391
503	563
628	908
731	1360

Green:

Activity 1:

687	267	189
586	998	999
785	967	992

Activity 2 :

790	282	763
604	898	904
1169	1175	1331

<u>Yellow</u>

Activity 1:

Share children's different ideas.

Activity 2:

Charlie 897

Anita   919

Eric   604

Poppy 1137

Maryam 1048

Hamad 965

Ordering:

Poppy, Maryam, Hamad, Anita, Charlie, Eric.

<u>Mastery:</u>

All of the statements are true. The children should have completed at least 5 sums to show that it does not make a difference how large the amount is that:

- An odd and an odd number = even
- An even and an even number = even
- An odd and an even = odd.

Encourage the children to explain what they have noticed and why.

Purple Activity 1:

LO: I can add 3 digit amounts together.

Pick a block and work out the answer to the sum.

124 + 231	318 + 131
323 + 432	645 + 113
107 + 542	527 + 422
470 + 321	872 + 123

BRICKWORK Mathematics

Purple Practice

Resource Sheet

100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10
10	10	10	10	10	10	10	10	10	10

Purple Practice

Practical resource
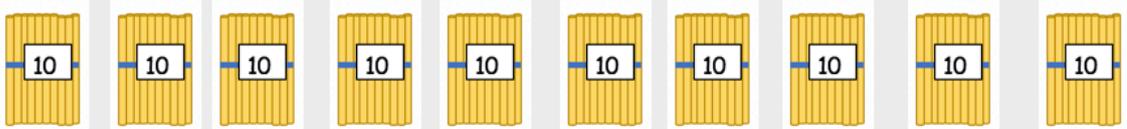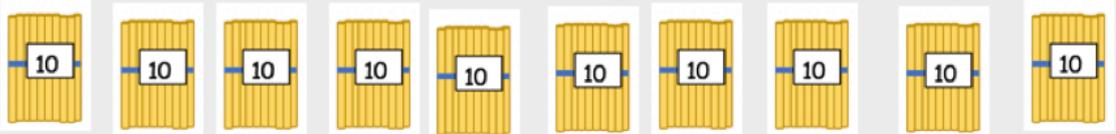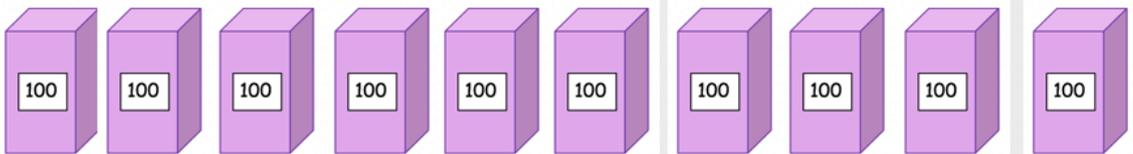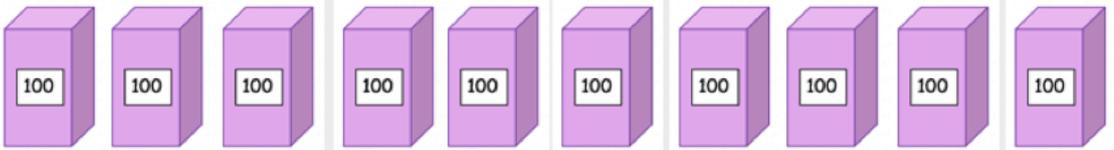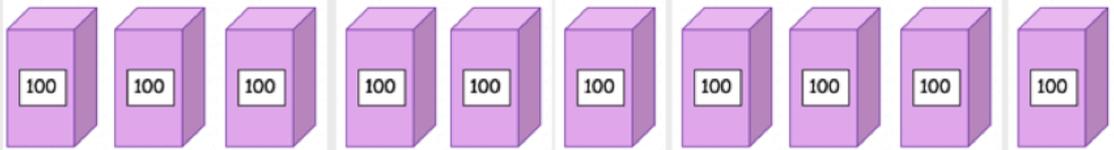
ones

tens

hundreds

BRICKWORK
Mathematics

Purple Activity 2:

LO: I can add 3 digit amounts together and understand how a new group of ten or hundred can be made.

Pick a block and work out the answer to the sum.

$562 + 128$

$112 + 279$

$189 + 314$

$207 + 356$

$245 + 383$

$671 + 237$

$596 + 135$

$617 + 743$

LO: I can use a formal written method to add two amounts together.

Look at each sum. Use the formal written method to work out the answers.

```
  h t o
  2 2 5
+ 4 6 2
_____

_____
```

```
  h t o
  1 4 7
+ 1 2 0
_____

_____
```

```
  h t o
  1 2 1
+   6 8
_____

_____
```

```
  h t o
  2 3 3
+ 3 5 3
_____

_____
```

```
  h t o
  4 0 3
+ 5 9 5
_____

_____
```

```
  h t o
  1 1 6
+ 8 8 3
_____

_____
```

```
  h t o
  2 4 2
+ 5 4 3
_____

_____
```

```
  h t o
  9 1 3
+   5 4
_____

_____
```

```
  h t o
  7 9 2
+ 2 0 2
_____

_____
```

Challenge: think of 3 numbers that can be added together to make a 1000.

Green Activity 2

LO: I can add 2 amounts together using the formal written method.

Look at each sum. Use the formal written method to work out the answers.

h	t	o
4	2	8
+ 3	6	2

h	t	o
1	4	7
+ 1	3	5

h	t	o
5	2	5
+ 2	3	8

h	t	o
2	3	1
+ 3	7	3

h	t	o
5	5	3
+ 3	4	5

h	t	o
1	0	6
+ 7	9	8

th	h	t	o
	3	2	6
+	8	4	3

th	h	t	o
	9	2	1
+	2	5	4

th	h	t	o
	4	9	6
+	8	3	5

Yellow Activity

LO: I can add 3 digit amounts together.

Pick one of each coloured block to add together. What is the closest amount to 1000 that can be made? (TIP try different combinations of bricks)

211	234	53
721	20	22
801	103	44
400	11	135
620	113	131
510	200	14
322	131	41
612	33	213

BRICKWORK
Mathematics

6 children play a throwing game where they can score points. Each child plays the game 3 times. Calculate the total points for each child to find who has the most points.

1. Charlie
345 + 312 + 240 = ⬜

2. Anita
411 + 301 + 207 = ⬜

3. Eric
219 + 105 + 280 = ⬜

4. Poppy
385 + 407 + 345 = ⬜

5. Maryam
345 + 314 + 389 = ⬜

6. Hamad
457 + 93 + 415 = ⬜

Challenge:
Can you place the children in order from the child with the most points to the child with the least points?

Pick one person to investigate if their statement is true or false.

When I add an odd number and an even number, the answer is always an odd number.

Harvey

When I add an even number and an even number, the answer is always an even number.

Martha

When I add an odd number and an odd number, the answer is always even.

Asha

Key questions
- How many sums will you create to prove if the opinion is true or false?
- Which numbers will you pick?
- Does it make a difference if you choose 2 or 3 digit amounts?
- How can you explain and prove the child is correct or incorrect?