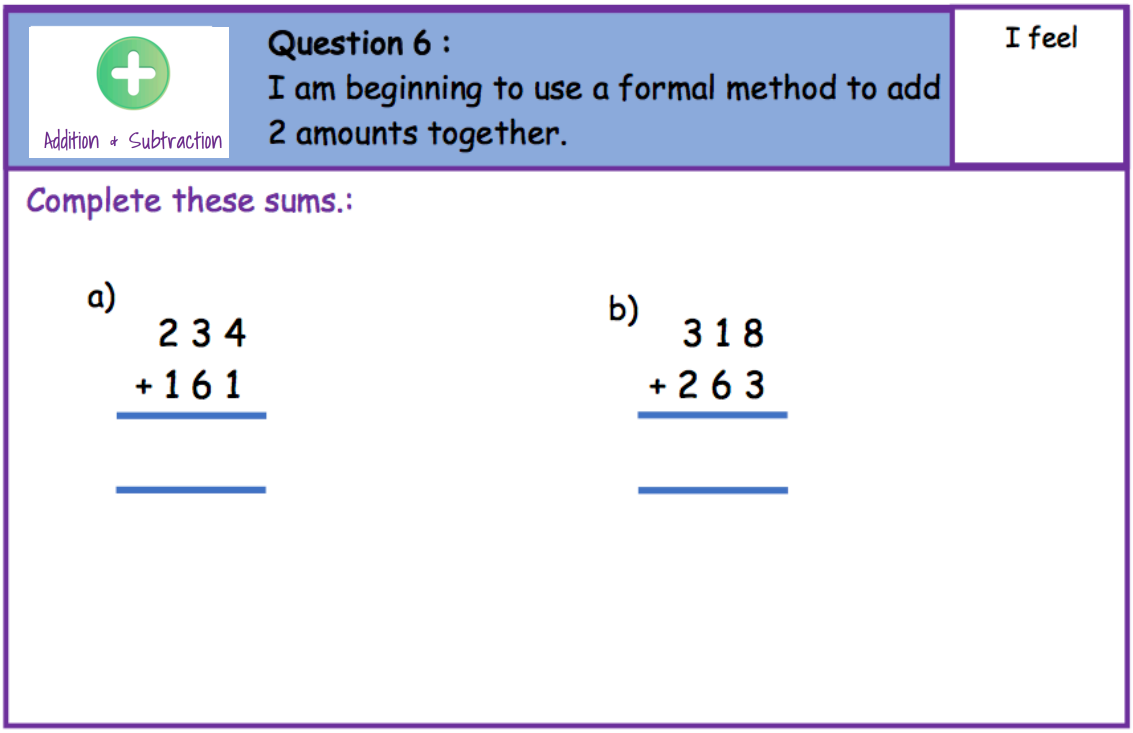
**Addition Prior Learning Assessment 6:**

**LO: I am beginning to use a formal method to add 2 amounts together.**

**NC: NAS2 add and subtract numbers with up to 3 digits using the formal written methods of columnar addition and subtraction where appropriate**

**Assessment Questions:**

Prior Learning:




**Teacher Input Ideas:**

The column method should only be taught when the children have understanding of partitioning digits into their value and adding these together in sections. An introduction to informal written methods can be found in lesson ideas for Question 4 and 5.

The children should show understanding that the hundreds, tens and ones can be partitioned as below. For the end of year 3, the children should be able to begin to partition the amounts and lay these above each other as shown below:

| hundreds | tens | ones |
|---|---|---|
| 100 | 10 | 2 |
| + 100 | 20 | 3 |
| 200 + | 3 0 | + 5 = 235 |

Once the children demonstrate understanding here, then the children should be introduced to a quicker way of organising and adding using knowledge of the value of the digits. For example: I know the value of each digit so if I group these together it will help me to add.

| hundreds | tens | ones |
|---|---|---|
| 2 | 1 | 3 |
| + 3 | 2 | 1 |
| 5 | 3 | 4 |

Once the children show understanding on the grid with using the digits, model laying it out without the grid, explaining that you ensure the hundreds are together, the tens are together and the ones are together ready to add. Providing the children with the sum laid out or squared paper, can help the children ensure that the amounts align.

| h | t | o |
|---|---|---|
| 2 | 1 | 3 |
| + 3 | 2 | 1 |
| 5 | 3 | 4 |

When the children are ready, 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.

## Practice Activities

**Purple Practice: Most suited for children who show no understanding of the formal method but do show understanding of partitioning to add and use informal written methods.**

For this activity children should demonstrate some understanding of informal written methods (as suggested in Q4 and Q5 of the addition section). This activity is suited for children ready to think about the value of each digit and partition these. The children can partition as below using the grids on the purple sheet:


If some children are still finding this hard to see, you could use objects or the images to show how they can be replaced with the digit to show the number of hundreds, number of tens and the number of ones. Ensure you model the correct vocabulary to check that the children still understand the value of the digits. Such as 2 lots of hundred and 3 lots of hundred equals 5 lots of hundred or 500.

**Green Practice: Most suited for children who demonstrate some understanding in Question 6a however made errors and will benefit from the sums being laid out to secure the method.**

For this activity the children are provided with 2 and 3 digit amounts to add together which are laid out ready 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 contain any carrying.

**Yellow Practice**: **Most suited for children who show understanding in Question 6 a of the prior learning assessment and are ready to lay out addition sums with little support.**

For the yellow activity the children are provided with 2 amounts written on blocks and are asked to add these together. The children are also provided with space and some guidance with layout to work out each answer, however the children will need to place the digits in the correct positions to help them to calculate the answer.

**Mastery** : **Reasoning and fluency**

For this activity the children are to explore the order in which amounts can be added when using the column method. The children should discover for themselves that it does not matter which order they add the amounts. They should show understanding that you can add the ones first or the hundreds first. This is to support those children who start by adding the hundreds first in understanding that we can add the units first and that this is a more efficient way when using the written method for amounts contain carrying (see question 6b).

**Answers**

**Purple:**

| | | |
|---|---|---|
| 1) 179 | 2) 233 | 3) 278 |
| 4) 359 | 5)597 | 6)763 |

**Green:**

| | | |
|---|---|---|
| 1) 79 | 2) 189 | 3)259 |
| 4) 458 | 5) 784 | 6)919 |
| 7) 767 | 8)857 | 9)896 |

**Yellow**

| | | |
|---|---|---|
| 1) 279 | 2) 567 | 3) 699 |
| 4) 878 | 5) 899 | 6) 878 |

**Mastery:**

The children should demonstrate understanding that the order in which we add the amounts does not affect the total.

BRICKWORK Mathematics

**Purple Activity**

**LO: I can add 3-digit and 2-digit amounts together using a written method.**

Add these amounts together. Can you use the place value chart and partitioning to help you?

**123 + 56**

| hundreds | tens | ones |
|---|---|---|
| | | |
| | | |

=

**110 + 123**

| hundreds | tens | ones |
|---|---|---|
| | | |
| | | |

=

**131 + 147**

| hundreds | tens | ones |
|---|---|---|
| | | |
| | | |

=

BRICKWORK Mathematics

**Purple Activity**

**LO: I can add 3-digit and 2-digit amounts together using a written method.**

Add these amounts together. Can you use the place value chart and partitioning to help you?

**114 + 245**

| hundreds | tens | ones |
|---|---|---|
| | | |
| | | |

=

**282 + 315**

| hundreds | tens | ones |
|---|---|---|
| | | |

=

**302+461**

| hundreds | tens | ones |
|---|---|---|
| | | |

=

BRICKWORK Mathematics

**Green Activity**

LO: I can use the column method to add two amounts together.

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

| h | t | o |
|---|---|---|
| | 3 | 4 |
| + | 4 | 5 |

| h | t | o |
|---|---|---|
| 1 | 2 | 7 |
| + | 6 | 2 |

| h | t | o |
|---|---|---|
| 1 | 3 | 5 |
| + 1 | 2 | 4 |

| h | t | o |
|---|---|---|
| 1 | 0 | 2 |
| + 3 | 5 | 6 |

| h | t | o |
|---|---|---|
| 4 | 1 | 3 |
| + 3 | 7 | 1 |

| h | t | o |
|---|---|---|
| 1 | 1 | 6 |
| + 8 | 0 | 3 |

| h | t | o |
|---|---|---|
| 2 | 2 | 2 |
| + 5 | 4 | 5 |

| h | t | o |
|---|---|---|
| 8 | 0 | 3 |
| + | 5 | 4 |

| h | t | o |
|---|---|---|
| 7 | 9 | 0 |
| + 1 | 0 | 6 |

**Challenge: explain to a friend how you worked out the answers and the method you have used.**

BRICKWORK Mathematics

Yellow Activity

Lo: I can use the formal written method to add amounts together.

Look at the addition sums below. Calculate the answers using the column method.

1) 163 + 116 = ☐

h t o

2) 253 + 314 = ☐

h t o

3) 474 + 225 = ☐

h t o

4) 502 + 376 = ☐

h t o

5) 720 + 179 = ☐

h t o

6) 632 + 246 = ☐

h t o

BRICKWORK Mathematics

Mastery

Fluency and Reasoning

**3 children explain how they use the column addition method to add amounts.**

When adding amounts you must add the hundreds first, then the tens and then the ones.

Harvey

When adding amounts you must add the ones first, then the tens and then the hundreds.

Martha

When adding amounts you can either add the ones first or the hundreds first. It doesn't make any difference to the answer.

Asha

**Explore the children's different views.**

**Who is right? Explain how you know.**