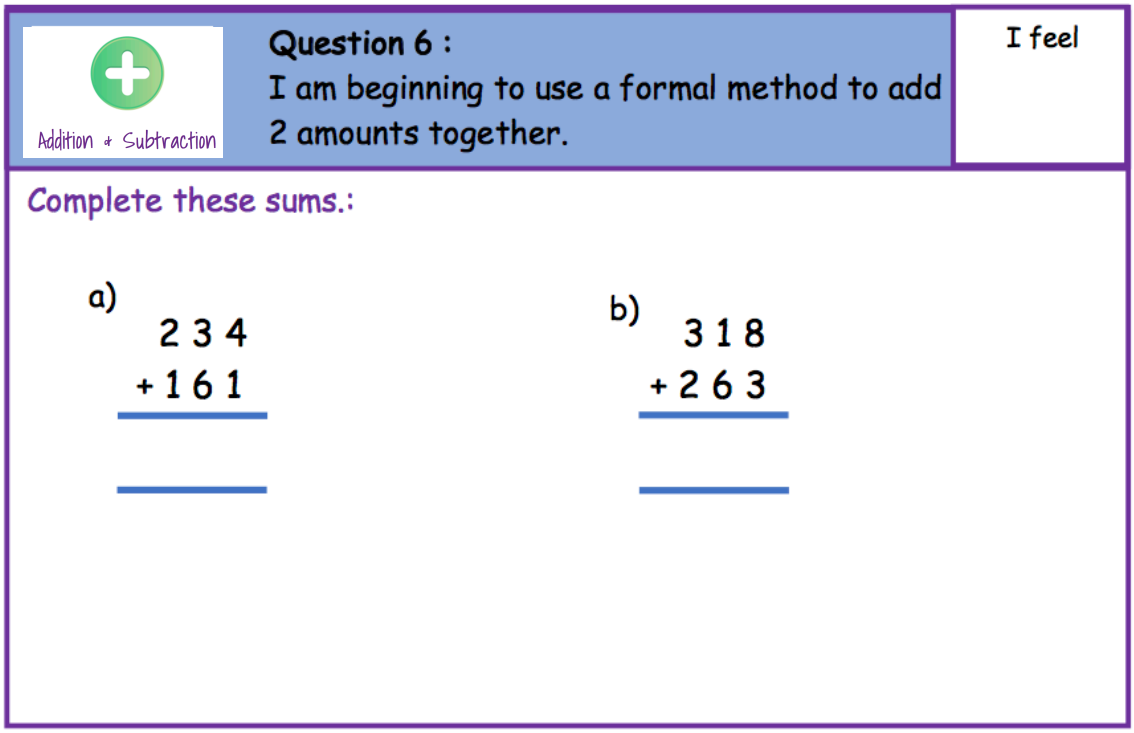
Addition Prior Learning Assessment 6 b:
LO: I am beginning to use a formal method to add 2 amounts together (including carrying a new ten or hundred).
NC: NAS2 add and subtract numbers with up to 3 digits using the formal written methods of columnar addition and subtraction where appropriate

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 Q4 and 5. Additionally this lesson should only be taught when the children show a good understanding towards using the formal method (lesson Q6) and are ready to complete sums that involve carrying a new ten or hundred.

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		7
+	100		20		4
	200	+	3 0	+	11

= 241

Once the children demonstrate understanding here, and can see that they have made an extra ten or hundred that they have to add, they should then 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
	1	1	7
+	1	2	4
		1	
	2	4	1

If the children find this hard to understand, practical ideas are suggested in lesson for Q5 and can be modelled alongside using this method.

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.

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  h t o
  1 1 7
+
  1 2 4
  -----
    1
  2 4 1
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Discuss with the children how all 3 methods give the same answer and which one they prefer.

Practice Activities

Purple Practice: Most suited for children who show understanding of partitioning and will benefit from using a grid to help them to carry amounts.

This activity is laid out the same as the purple activity in Q6a lesson therefore the children should show understanding of how the amounts can be partitioned and added. These questions encourage the children to complete sums where a new ten is made and then on the second page a new hundred is made.

If some children are still finding this hard, you may want to use objects or images to model how they can be replaced with the digit to show the number of hundreds, number of tens and the number of ones. Also the children will practically discover how a new ten or hundred is created.

Green Practice: Most suited for children who show that they can use the column method without carrying such as in Question 6a and are now ready to carry amounts using the formal method.

For this activity 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 presented with amounts that include carrying to make a new group of ten or a new group of hundred.

There are 2 sheets that the children can complete. Sheet 1 contains sums where a group of ten is made when the ones are added together. The second sheet contains sums where a group of hundred is made when the tens are added together. The last few questions contain amounts where a group of ten and hundred is made when the amounts are added together.

<u>Yellow Practice</u>: Most suited for children who show some understanding in Q6 a and b and are ready to lay out addition sums with little support.

For this activity the children are to be provided with the animal cards that were used for the yellow activity in Q3 lesson. The children to select 2 animals to calculate their total length when added. When deciding how to calculate the answer, encourage the children to decide if they can work out the sums mentally or whether they will need to use a written method to work out the answer. Some children may have completed mental calculations using these cards in lesson Q3 but they may have found that some of the animals were hard to work out their total length mentally when added. The children can explore different combinations independently or you may want to provide the children with the list below:

tapirs and lizard	aardvark and lizard	tapirs and adder
aardvark and koala	penguin and bat	kangaroo and koala
dolphin and Bison	badger and ocelot	ocelot and koala
ocelot and aardvark	elephant and crocodile	shark and crocodile
crocodile and shrew	elephant and lizard	aardvark and elephant

Additionally other skills can be developed or applied here:

- The children could pick 4 of their combinations and order these from longest to shortest.
- They could write down some of the amounts they have made in words.
- The children could convert their measurements in to metres and centimetres to record their answer (such as 3 metres and 27 centimetres).
- The children could measure out the length of the animals and chalk these on to the playground so they can see how large they are and compare to their own size. They can then investigate different questions such as: How many children do they need to make the same length as a bison and a crocodile?

Mastery : For this activity the children are to fill in the table provided. They are to place ticks into the correct boxes by selecting which sums create a new group of ten or hundred. The children should discuss how they are going to approach this question and work out the answer. Some children may need to complete the sums using objects that are grouped in hundreds, tens and ones to visually see if a new group is made when they add the amounts together. Some children may suggest working out the answer to each sum using a written method. Some children may suggest looking at the digits in the ones and using their knowledge of number bonds to work out if a new ten is made and then repeat this by looking at the digits in the tens column.

Answers

Purple:

171	290	381
227	318	218

Green:

Activity 1:

73	190	174
360	743	961
875	987	798

Activity 2:

109	135	239
317	656	821
831	800	721

Yellow:

Tapirs and lizard 175cm	Aardvark and lizard 208cm	Tapirs and adder 230cm
Aardvark & koala 271cm	Penguin and bat 117cm	Kangaroo & koala 228cm
Dolphin & Bison 485cm	Badger and ocelot 157cm	Ocelot and koala 145cm
Ocelot & aardvark 260cm	Elephant & crocodile 840cm	Shark &crocodile 792cm
Crocodile& shrew 335cm	Elephant and lizard 528cm	Aardvark&elephant706cm

Mastery:

Sum	Will make a new ten	Will make a new hundred
234+139	✓	
432+81		✓
123+621		
456+244	✓	✓

BRICKWORK Mathematics

Purple Activity 1

LO: I can add 3-digit and 2-digit amounts together (including when carrying is used)

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

118 + 53

hundreds	tens	ones

=

165 + 125

hundreds	tens	ones

=

234 + 147

hundreds	tens	ones

=

BRICKWORK Mathematics

Purple Activity 2

LO: I can add 3-digit and 2-digit amounts together

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

162 + 65

hundreds	tens	ones

=

186 + 132

hundreds	tens	ones

=

253 + 65

hundreds	tens	ones

=

BRICKWORK Mathematics

Green Activity 1

LO: I can use a formal written method to add two amounts together (carrying)

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

h	t	o
	2	4
+	4	9

h	t	o
1	3	7
+	5	3

h	t	o
1	4	8
+	2	6

h	t	o
1	0	2
+ 2	5	8

h	t	o
4	1	4
+ 3	2	9

h	t	o
1	2	5
+ 8	3	6

h	t	o
3	2	7
+ 5	4	8

h	t	o
8	0	3
+ 1	8	4

h	t	o
6	9	2
+ 1	0	6

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

BRICKWORK Mathematics

Green Activity 2

LO: I can use a formal written method to add two amounts together (carrying)

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

h	t	o
	6	4
+	4	5

h	t	o
	8	2
+	5	3

h	t	o
1	8	1
+	5	8

h	t	o
1	2	0
+	1	9	7

h	t	o
2	6	2
+	3	9	4

h	t	o
1	8	2
+	6	3	9

h	t	o
3	8	7
+	4	4	4

h	t	o
6	0	3
+	1	9	7

h	t	o
2	8	4
+	4	3	7

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

BRICKWORK Mathematics

Yellow Activity

Tapirs

Length: 160cm

Aardvark

Length: 193cm

Lizard

Length: 15cm

Adder

Length: 70 cm

BRICKWORK Mathematics

Yellow Activity

Emperor Penguin

Height: 112cm

Kangaroo

Length: 150cm

Male Koala

Height: 78cm

Bat

Length: 5cm

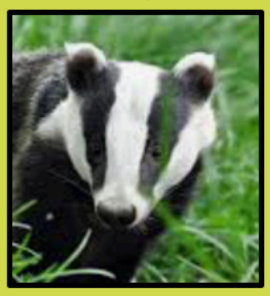
BRICKWORK Mathematics

Yellow Activity

Ocelot

Length: 67cm

Badger



Length: 90cm

Bison

Length: 310cm

Dolphin

Length: 175 cm

BRICKWORK Mathematics

Yellow Activity

Crocodile

Length: 327cm

Shrew

Length: 8cm

Elephant

Length: 513m

Female Shark

Length: 465cm

BRICKWORK Mathematics

Mastery

Fluency and reasoning

Look at each sum. Tick the correct boxes to show if the sum will make a new group of ten or hundred when the amounts are added together.

Sum	Will make a new ten	Will make a new hundred
234+139		
432+81		
123+621		
456+244		

Can you explain how you worked out the answers?