

## Subtraction Prior Learning Assessment Questions 8 and 9:

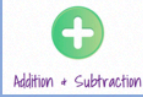
LO: I can use inverse operations to solve problems.

I can solve word problems.

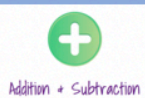

NC NAS 2 .estimate and use inverse operations to check answers to a calculation.  
3. solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

### Assessment Question 8 and 9:

Prior Learning :

	<b>Question 8:</b> I can chose the correct operation to use for missing number problems.	I feel
Fill in the missing boxes in these sums.		
a)	<input type="text"/> + 132 = 256	
b)	123 - <input type="text"/> = 79	

Prior Learning:

	<b>Question 9 :</b> I can solve word problems.	I feel:
Charlie saves football cards each year and places them into a large album. In 2016 he saved 218 cards and in 2017 he saved 351 cards. At the start of 2018, gave away 178 cards to his cousin. How many cards did he have left?		
		<input type="text"/>

**Practice Activities:** Below the children are presented with 4 different problems. You may want to spend a whole lesson on the problems or use these at the end of lessons to apply the children's calculation methods.

The children should be taught the skills to solve problems, therefore you may want to model or discuss the following points:

- Looking for any familiar symbols or information.
- Picking out the information you know in the problem.
- Working out what you are being asked to do.
- Looking for any patterns or additional information.
- Applying knowledge of using inverse operations.
- Suggesting a suitable method for solving the problem.
- Estimating the answer.
- Suggesting a method for checking the answer.

**Mastery 1:** Most suited for children who demonstrate difficulty in Question 8 of the prior learning assessment and will benefit from investigating the link between addition and subtraction sums.

For this activity the children are presented with a sum in each box. The children are to explore other ways of writing the sum using their knowledge of addition and subtraction. Encourage the children to look at the examples in the first box demonstrating how one addition sum can be presented in different ways. If the children are finding it difficult to see the link, then model using a small amount of objects to show that when amounts are added, they can be added in any order and the total remains the same. Then model when we use this total amount we can subtract the same number we have just added. What do we notice? What if we decided to subtract the other number? What do I have left over? Can you present this as a sum?

**Mastery 2:** Most suited for children who made errors in Question 8 of the prior learning assessment and will benefit from exploring missing box problems with addition and subtraction.

For this mastery task the children are presented with missing box problems. The children are required to explore ways of solving the problems and decide when they may need to use the inverse operation.

#### Key questions

- How many more is needed to make 132? How can I work this out? What skills can you use? Can you count on to find the difference? What if I subtract 94 from 132? What do you notice? Can I use the same strategies for question 2?
- What information have I got for questions 3 and 4? What do I need to find out?

Can I use the same strategies as I did for questions 1 and 2? Why?

- For question 5 and 6 what do I need to work out? What strategies can I use? Which calculation do I need to perform? Why? How can we check our answers?

This activity leads on from mastery 1. The children should be able to apply their knowledge of how addition and subtraction sums link and begin to decide when they can use the inverse operation and when they need to use the same operation but the amounts in a different way. For example, in questions 3 and 4 the children are still required to subtract but need to use the amounts in a different order.

The children should be able to suggest methods they can use for calculating the answer using previous learning. This activity provides the opportunity for the children to secure their understanding of the link between addition and subtraction.

**Mastery 3: Most suited for children that demonstrate understanding in mastery 1 and 2 and are ready to explore missing boxes presented in a column subtraction layout.**

The children are presented with missing box sums when the subtraction calculations are presented in the format of the column method. The children are to look at the amounts and sums they have been given. Encourage the children to work out what has been subtracted from each amount or how much more is needed, using the amounts they have. As the questions progress, the children are presented with sums that require exchanging.

**Mastery 4: Most suited for children who need to further secure skills demonstrated in Question 9 of the prior learning assessment.**

The children are presented with word problems that require the children to apply their subtraction methods. The children should carefully read the problem they are presented with and decide the calculation/calculations they need to use and which information is to be used. As the activity progresses, the children are also presented with multistep problems and are required to apply addition, multiplication and subtraction methods.

**Key questions:** What is the question asking you to do? Explain how you will work this out? Can you find the key information you need? Which amounts will you use? Why? Have you worked out the answer? Do you need to work out anything else? Explain how you have checked your working out.

## Answers

### Mastery 1:

$$78 + 50 = 128$$

Example:

$$50 + 78 = 128$$

$$128 - 50 = 78$$

$$128 - 78 = 50$$

$$150 + 50 = 200$$

$$50 + 150 = 200$$

$$200 - 50 = 150$$

$$200 - 150 = 50$$

$$254 + 100 = 354$$

$$100 + 254 = 354$$

$$354 - 100 = 254$$

$$354 - 254 = 100$$

$$45 - 20 = 25$$

$$45 - 25 = 20$$

$$20 + 25 = 45$$

$$25 + 20 = 45$$

$$189 - 99 = 90$$

$$189 - 90 = 99$$

$$99 + 90 = 189$$

$$90 + 99 = 189$$

$$654 - 378 = 276$$

$$654 - 276 = 378$$

$$378 + 276 = 654$$

$$276 + 378 = 654$$

**Mastery 2 :**

1)  $94 + 38 = 132$

2)  $153 + 34 = 187$

3)  $170 - 120 = 50$

4)  $234 - 83 = 151$

5)  $200 - 70 = 130$

6)  $450 - 200 = 250$

### Mastery 3

3 6 9  
- 2 1 7  
-----  
1 5 2

8 7 5  
- 6 2 5  
-----  
2 5 0

9 8 3  
-   1 8  
-----  
9 6 5

6 5 5  
- 3 6 5  
-----  
2 9 0

5 3 8  
- 3 3 3  
-----  
2 0 5

9 2 5  
- 1 8 7  
-----  
7 3 8

### Mastery 4:

- 1) 205 cards
- 2) £24
- 3) £54
- 4) 327 children

For those children finding this activity difficult, demonstrate alongside practical equipment, such as pound coins, books, cards etc.

Look at each sum. Write 3 other sums using the same numbers.

$$78 + 50 = 128$$

Example:

$$50 + 78 = 128$$

$$128 - 50 = 78$$

$$128 - 78 = 50$$

$$150 + 50 = 200$$

$$254 + 100 = 354$$

$$45 - 20 = 25$$

$$189 - 99 = 90$$

$$654 - 378 = 276$$

**Challenge:** think of your own number sentence using the numbers 123 and 14.

Fill in the missing boxes in each sum.

1)  $94 + \boxed{\phantom{000}} = 132$

2)  $\boxed{\phantom{000}} + 34 = 187$

3)  $170 - \boxed{\phantom{000}} = 50$

4)  $234 - \boxed{\phantom{000}} = 151$

5)  $\boxed{\phantom{000}} - 70 = 130$

6)  $\boxed{\phantom{000}} - 200 = 250$



Place a digit in each box to make the sum correct.

$$\begin{array}{r}
 3 \quad 6 \quad \square \\
 - \quad 2 \quad \square \quad 7 \\
 \hline
 1 \quad 5 \quad 2 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 8 \quad \square \quad \square \\
 - \quad \square \quad 2 \quad 5 \\
 \hline
 2 \quad 5 \quad 0 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 9 \quad \square \quad 3 \\
 - \quad \square \quad 1 \quad \square \\
 \hline
 9 \quad 6 \quad 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6 \quad \square \quad 5 \\
 - \quad \square \quad 6 \quad 5 \\
 \hline
 2 \quad 9 \quad 0 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5 \quad 3 \quad 8 \\
 - \quad \square \quad \square \quad \square \\
 \hline
 2 \quad 0 \quad 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \square \quad \square \quad \square \\
 - \quad 1 \quad 8 \quad 7 \\
 \hline
 7 \quad 3 \quad 8 \\
 \hline
 \end{array}$$

- 1) Sunil has 314 football cards in his collection. He gives 109 of the cards away to his friend as he already has the same card.  
How many cards does he have left?

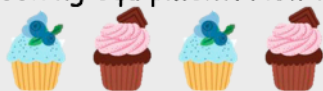


cards

- 2) Simon has been saving his pocket money. He gets £5 each week. He has been saving for 6 weeks. He wants to buy a pair of trainers that cost £54. How much more money does he need?

£

- 3) The school has raised £253 from cake sales this year. They have spent £126 on sports equipment for the school. They have spent £73 on cooking equipment. How much money do they have left?



£

- 4) Mrs Smith ordered 200 books for the children at her school. Mr Jones order 250 books as well for the school. Together they order 123 too many books. How many children are in the school?

children