

### **Subtraction Prior Assessment Questions 4, 5 and 7.**

**LO:** I can complete subtractions when there are zeroes to subtract from.

**NASDM 8:** I can solve problems involving subtraction

**NASDM 7:** solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why (mastery activity)

#### **Teacher Input Ideas:**

This lesson will help children to apply mental and written strategies they have secured for subtraction, including when they are required to exchange. It also provides opportunities to subtract amounts when zero is used as a place holder. Questions 4,5 and 7 in the prior assessment will support you in identifying the children's needs when subtracting from zero and any previous activities (such as lesson for Q3/4 subtraction).

**Input Q5:** Set up a car showroom or display pictures of cars around the classroom with amounts on them. Amounts with multiple zeroes should be placed on the cars. For example, £75,000, £8300, £60,000. Children could have sale stickers/ cards on their tables with amounts to take away. Such as this car has £300 off the price. Encourage the children to think how they would work this out. Ask the children whether a written method is needed or can we do this mentally with jottings. Model either alongside a place value chart or using the purple place value sheet representations what 60,000 looks like and how you can mentally subtract 300 using knowledge of place value. Talk through what you are doing and how you think about the columns as you are subtracting. Repeat with other amounts and some amounts from the purple task could be used.

**Input Q4:** The car showroom example can still be used, however change amounts on the cars to ones that you may need a written method for, ensuring that the amounts contain zeros to help model and discuss how to exchange when faced with a zero. For example, a £38,906 car has a discount of £395. How much is the car? Model how to exchange when faced with a zero and using the next column. Then introduce amounts where they are required to exchange however this column is a zero. For example, 89036- 8950 and 95000 - 8973.

**Input Q7:** take the children into the class shop or set up a table of items for sale (as suggested in the yellow activity). Model to the children having £25 in your purse and wanting to buy something that is £9.54. Can you do this mentally or do you need to use a written method? Allow the children time to work out the answer. Together look at how you use your knowledge of place value to accurately lay out the sum for the written method. Model exchanging with zeroes.

## Practice Activities

**Purple Practice:** Most suited for children who made errors in **Question 5** of the prior assessment task and when subtracting from amounts with multiple zeroes mentally.

The children are to subtract a green card from a purple card and work out what the answer is. This encourages the children to use knowledge of place value. For those children who are struggling, encourage them to use the place value support sheet. Children can cut out the amounts using the place value representations and then think about what they would need to exchange/ change to take the amount away. They could also use place value charts if this helps to write down the amount.

**Green Practice:** Most suited for children who made errors in **Question 4** or have demonstrated misconceptions in the previous lesson when using a written method for exchanging zeroes.

This activity provides the opportunity for the children to secure the decomposition method and ensure that they have a good understanding of exchanging when faced with zeroes.

Some children may suggest using the inverse (adding the 2 amounts that they have) to work out the challenge.

**Yellow Practice** Most suited for children who made errors in **Question 7** and need to secure taking away decimal numbers from whole amounts.

**Practical activity:** Either using items that the children have brought in from home or any that are of interest to the children, create a class shop. The children to be given money in wallets or purses with a variety of amounts in them or written on a visual representation (such as £20, £12, £55). Label items that are for sale with a variety of amounts ensuring that there is a range so that the children can work some out mentally and decide which ones they may need a written method for. For example, £21 - 16.87 or £89 - £14.02 and mental amounts for rounding such as £45 - £4.99.

**Mastery** (word problems and fluency/efficiency): This mastery task encourages the children to pick out the relevant information to help them to understand the problem and select the correct operation/operations. The children may also need to perform addition calculations to work out the answers. Discussions about how they have worked out the answers should also be encouraged for children to share different and most efficient methods that have been used. For example, some children may feel confident subtracting a decimal amount from a whole amount for Q6; whereas some children may have converted the amounts into metres to help them. Additionally, Q4 can be answered mentally.

## Answers

### Purple:

Encourage the children to suggest calculations and discuss how they worked them out. Mark as a group and prove to each other that they are correct and demonstrate how they worked it out.

### Green

1) 23674

2) 74344

3) 11170

4) 85797

5) 315261

6) 18054

7) 7791

8) 1768

9) 31874

### **challenge**

The image shows two subtraction problems. The first problem is  $3098 - 1241 = 1857$ . The second problem is  $85019 - 27141 = 57878$ . In both problems, the digits 0, 9, 8 in the first problem and 0, 1, 9, 1 in the second problem are enclosed in pink boxes. The subtraction lines are purple.

### Mastery:

1) £28.71

2) £13.10

3) No

4) £230.01

5) 5.321 km

Pick a green brick and see if you can subtract it from a purple brick.

TIPS: Some of your choices may give you a negative number, so check that the purple brick has a larger amount written on than the green brick.

10000

65000

78500

5000

100000

20000

subtract  
900

subtract  
500

subtract  
5000

subtract  
800

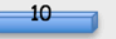
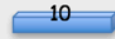
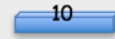
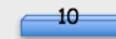
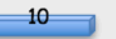
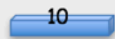
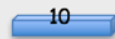
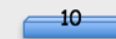
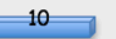
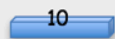
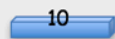
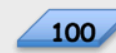
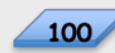
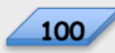
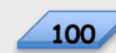
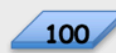
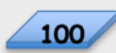
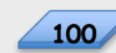
subtract  
300

subtract  
10000

subtract  
50

subtract  
1

subtract  
10



ones



Look at the sums below. Estimate what the answer will be and then work out the answer using the decomposition method.

$$\begin{array}{r} 1) \\ 58023 \\ - 34349 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2) \\ 79800 \\ - 5456 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3) \\ 12890 \\ - 1720 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4) \\ 170428 \\ - 84631 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5) \\ 820095 \\ - 504834 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6) \\ 80107 \\ - 62053 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 7) \\ 61001 \\ - 53210 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 8) \\ 101607 \\ - 99839 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 9) \\ 80003 \\ - 48129 \\ \hline \\ \hline \end{array}$$

**Challenge:** look at the sums below. Work out where the zeroes should go.

$$\begin{array}{r} 3 \quad \square \quad \square \quad 8 \\ - 1 \quad 2 \quad 4 \quad 1 \\ \hline 1 \quad 8 \quad 5 \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 5 \quad \square \quad \square \quad 9 \\ - 2 \quad 7 \quad 1 \quad 4 \quad \square \\ \hline 5 \quad 7 \quad 8 \quad 7 \quad 8 \\ \hline \end{array}$$

Look at the word problems below. Read each question carefully and pick out the key information. Decide which operations you need to use.

1. Daniel has £100 saved in his bank account to spend on new clothes. He buys:



£50.99

1 pair of trainers



£7.89 each

2 T-shirts



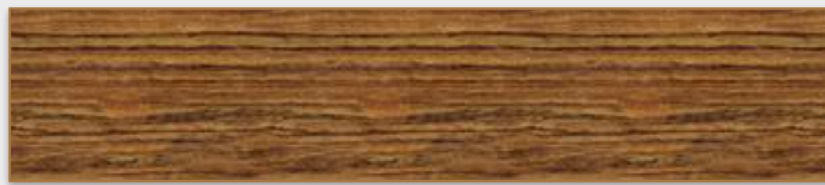
£4.52

1 pack of socks

**How much money does he have left?**

2. Sienna spends £24 pounds at the supermarket on 3 DVDs. 2 of the DVDs are for her sisters and cost £5.45 each. How much does her DVD cost?

3. Vinay has this piece of wood to make a cupboard.



3.5 m

He measures and cuts one piece at 1.67m. He needs 1.89 m for another part of the cupboard. Does he have enough wood?

4. Ruby spends £238 on presents for her family and friends at Christmas. She decides to return a purse she bought for her cousin that cost her £7.99. How much did she spend altogether?



5. Mr Jones walks from his house to the beach. He measures how far he walks. When he arrives at the beach he has walked 6km altogether. However, whilst he was walking he went the wrong way. This was 0.679km of his journey. How far is the beach away from his house?