

## Place Value, Addition and Subtraction Unit 5

### Problem solving and reasoning questions

Subtract £17,835 from £18,009 in two different ways.  
Explain which method you thought was most efficient, and why.

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Write three prices which total £100. None can be an exact number of pounds and the numbers of pence are not multiples of 5p.

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#### True or false?

- Buying 3 things each less than £30, and each priced at a number of pounds and 99p, will result in 3p and some pounds change from £100.
  - £5 can be made in more than one way using exactly 7 coins.
  - Three amounts totalling £10 can be written without any being more than £3.40.
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When estimating how much change we will get, is it better to round up to the next pound than down to the previous pound?

Give a reason for your answer.

These questions should be provided for children to do once the unit has been completed. They assess the children's mastery of the skills and concepts in this unit.

## Place Value, Addition and Subtraction Unit 5

### Problem solving and reasoning questions

Subtract £17,835 from £18,009 in two different ways.

Explain which method you thought was most efficient, and why.

The answer is £174. Either by Frog (counting up) or decomposition. Most would consider Frog to be the most efficient for this as both numbers are close to 18,000. Using decomposition will involve several potentially tricky column exchanges.

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Write three prices which total £100. None can be an exact number of pounds and the numbers of pence are not multiples of 5p.

Many possible solutions, e.g. £62.34, £17.44 and £20.22. Check all children's numbers meet the criteria. Do they have a strategy or do they just choose numbers at random?

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#### True or false?

- Buying 3 things each less than £30, and each priced at a number of pounds and 99p, will result in 3p and some pounds change from £100. True,  $3 \times 99\text{p}$  is £2.97 which results in the 3p change.
- £5 can be made in more than one way using exactly 7 coins. True, e.g.  $2 \times £2$  and  $5 \times 20\text{p}$ ;  $3 \times £1$  and  $4 \times 50\text{p}$ ;  $1 \times £2$ ,  $2 \times £1$ ,  $1 \times 50\text{p}$ ,  $2 \times 20\text{p}$  and  $1 \times 10\text{p}$ .

These questions should be provided for children to do once the unit has been completed. They assess the children's mastery of the skills and concepts in this unit.

- Three amounts totalling £10 can be written without any being more than £3.40. True, e.g. £3.31, £3.34 and £3.35.
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When estimating how much change we will get, is it better to round up to the next pound than down to the previous pound? Give a reason for your answer.

Yes, often this is true. Rounding the pence up will tell you how many pounds you should get. However, if the number of pence is low, e.g. spend £6.03 and use a £10 note, rounding down will give a more accurate estimate of the change.

How coherently can children explain their reasons?

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