

Reasoning and Problem Solving – Multi-step Problems 1

National Curriculum Objectives:

Mathematics Year 5: [Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why](#)

Differentiation:

Developing Solving multi-step addition and subtraction problems involving 2-digit multiples of 5 and 10.

Secure Solving multi-step addition and subtraction problems involving 3-digit multiples of 5 and 10.

Mastery Solving multi-step addition and subtraction problems involving any 4-digit.

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Reasoning and Problem Solving – Multi-step Problems – Teaching Information

1. A postman has 30 letters. He collects another 60 from the sorting office. By lunchtime, he has delivered 50 letters. How many letters does he have left?



John

This is my method:

$$30 + 60 = 90$$

$$90 + 50 = 140$$

Do you agree with John's answer? Explain why.

2. A milkman has 45 bottles of milk. He collects another 35 from the dairy and delivers 55 bottles during the day. How many bottles of milk does he have left?



Hari

This is my method:

$$45 + 35 = 80$$

$$80 - 50 = 30$$

Do you agree with Hari's answer? Explain why.

3. There are 30 people on a train. At the next station, 25 people get off. At the next station, 75 people get on. How many people are now on the train?



Chen

This is my method:

$$30 - 25 = 15$$

$$15 + 75 = 80$$

Do you agree with Chen's answer? Explain why.

4. There are 75 children on the playground. 15 more come out to play. The whistle blows and 60 children go in. How many children are left on the playground?



Jimmy

This is my method:

$$60 + 15 = 75$$

$$75 - 75 = 0$$

Do you agree with Jimmy's answer? Explain why.

5. A baker bakes 120 loaves of bread. After lunch, she bakes 95 more loaves. If she sells 150 loaves during the day, how many loaves does she have left?



Matt

This is my method:

$$120 + 95 = 205$$

$$205 - 150 = 55$$

Do you agree with Matt's answer? Explain why.

6. A child has 255 cards. He swaps 75 for a magazine and 130 for a pack of smelly rubbers. How many cards does he have left?



Dhanu

This is my method:

$$255 - 75 = 180$$

$$180 + 130 = 310$$

Do you agree with Dhanu's answer? Explain why.

7. A delivery driver needs to travel 390 km. During the morning, she drives 150 km. In the afternoon, she drives 135 km more. How much further does she need to go?



Anwen

This is my method:

$$390 - 150 = 240$$

$$240 - 130 = 110$$

Do you agree with Anwen's answer? Explain why.

8. There are 250 children in the hall. They are joined by 95 more children. After 10 minutes, 310 children go out to play. How many children are left in the hall?



Alec

This is my method:

$$310 - 250 = 60$$

$$95 + 60 = 155$$

Do you agree with Alec's answer? Explain why.

9. 3,450 Everton fans arrive at the match. 2,260 Liverpool fans join them. 1,480 fans leave in disgust after the first half. How many people fans are left at the match?



Jack

This is my method:
 $3,450 + 2,260 = 5,710$
 $5,710 - 1,480 = 4,230$

Do you agree with Jack's answer? Explain why.

10. A librarian ordered 2,480 non-fiction books but had to send 755 of them back. He also ordered 3,270 fiction books. How many new books does he have now?



Kamal

This is my method:
 $2,480 - 750 = 1,730$
 $1,730 + 3,270 = 5,000$

Do you agree with Kamal's answer? Explain why.

11. At a charity event, £4,586 was raised on the night and £2,450 during the following days. £890 had been spent on prizes, so how much money was raised in total?



Lucy

This is my method:
 $£4,586 - £2,450 = £2,136$
 $£2,136 + £890 = £3,026$

Do you agree with Lucy's answer? Explain why.

12. There's 6,345 litres of water in a swimming pool. Staff add 3,456 more litres. 1,320 litres of rain fall into the pool that month. How much water is in the pool?



Rich

This is my method:
 $6,345 + 3,456 = 9,801$
 $9,801 - 1,320 = 8,481$

Do you agree with Rich's answer? Explain why.

Developing

1. No because John added 90 and 50, instead of subtracting them to get 40.
2. No because Hari did $80 - 50$, when he should have done $80 - 55$ to get 25.
3. No because Chen said that $30 - 25 = 15$, when it should total 5.
4. No because Jimmy has added and subtracted the wrong numbers. He should have done: $75 + 15 = 90$, then $90 - 60 = 30$.

Secure

5. No because Matt has said that $120 + 95 = 205$ instead of 215.
6. No because Dhanu should have subtracted 180 and 130 to get 50, instead of adding it.
7. No because Anwen did $240 - 130$, instead of $240 - 135$, which would have given her an answer of 105.
8. No because Alec used the wrong numbers to subtract. He should have done: $250 + 95 = 345$, then $345 - 310 = 35$.

Mastery

9. No because Jack has written down the answer incorrectly. He has recorded it as 4,203, when it should be 4,230.
10. No because Kamal has subtracted 750 from 2480, instead of 755.
11. No because Lucy has added and subtracted the wrong numbers. She should have added £4,586 and £2,450 to get £7,036. £890 then needs to be subtracted from this amount to give you £6,146.
12. No because Rich should have added 9,801 and 1320 to give him 11,121.