Reasoning and Problem Solving
Step 1: 1s, 10s, 100s, 1,000s

National Curriculum Objectives:

Mathematics Year 4: (4C2) Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Use addition/subtraction of 1s, 10s, 100s or 1,000s to calculate a start number. No exchanging.
Expected Use addition/subtraction of 1s, 10s, 100s and 1,000s to calculate a start number. Some exchanging in one column.
Greater Depth Use addition/subtraction of 1s, 10s, 100s and 1,000s to calculate a start number. Some exchanging in two columns.

Questions 2, 5 and 8 (Reasoning)
Developing Find the mistake in the addition/subtraction calculation and explain the error when calculating 4-digit numbers.
Expected Find the mistake in the addition/subtraction calculation and explain the error when calculating 4-digit numbers (including some exchange in one column).
Greater Depth Find the mistake in the addition/subtraction calculation and explain the error when calculating 4-digit numbers, identifying when exchanging is needed (including exchanging in two columns).

Questions 3, 6 and 9 (Reasoning)
Developing Complete a sequence and explain what the sequence is increasing by each time and explain how they know. Addition of 1s, 10s, 100s or 1,000s with no exchanging.
Expected Complete a sequence and explain what the sequence is increasing/decreasing by each time and explain how they know. Addition/subtraction of 1s, 10s, 100s and 1,000s with some exchanging in one column.
Greater Depth Complete a sequence and explain what the sequence is increasing/decreasing by each time and explain how they know. Addition/subtraction of 1s, 10s, 100s and 1,000s with some exchanging in two columns.

More Year 4 and Year 5 Addition and Subtraction resources.

Did you like this resource? Don't forget to review it on our website.

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1s, 10s, 100s, 1,000s

1a. Chuan thinks of a number.

I add 1,000 to it and subtract 300 from it. My answer is 8,428.

Chuan

What number did he start with?

D

4 PS

1s, 10s, 100s, 1,000s

1b. Hafsa thinks of a number.

I subtract 200 from it and add 20. My answer is 2,539.

Hafsa

What number did she start with?

D

4 PS

2a. Complete the sequence.

6,391	6,491		6,691	

What is the sequence increasing by each time?
Explain how you know.

D

4 R

2b. Complete the sequence.

1,847	2,847			5,847

What is the sequence increasing by each time?
Explain how you know.

D

4 R

3a. Gabriel says,

When I add 200 to 3,552, I get 5,552.

Gabriel

Correct Gabriel's answer and explain his mistake.

D

4 R

3b. Lucy says,

When I subtract 50 from 4,659, I get 4,654.

Lucy

Correct Lucy's answer and explain her mistake.

D

4 R

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1s, 10s, 100s, 1,000s

4a. Josh thinks of a number.

I add 1,000 to it, subtract 50, add 5, then subtract 400. My answer is 6,497.

Josh

What number did he start with?

E

4 PS

4b. Sinead thinks of a number.

I add 3,000 to it, subtract 70, add 4, then subtract 200. My answer is 5,099.

Sinead

What number did she start with?

E

4 PS

5a. Complete the sequence.

1,040	1,440			2,640

What is the sequence increasing by each time?
Explain how you know.

E

4 R

5b. Complete the sequence.

6,893	6,863			6,773

What is the sequence decreasing by each time?
Explain how you know.

E

4 R

6a. Cian says,

Cian

When I subtract 80 from 3,150, I get 3,230.

Correct Cian's answer and explain his mistake.

E

4 R

6b. Kelly says,

Kelly

When I add 600 to 2,799, I get 8,799.

Correct Kelly's answer and explain her mistake.

E

4 R

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1s, 10s, 100s, 1,000s

7a. Anna thinks of a number.

I add 1,000 to it, subtract 30, add 8, then subtract 200. My answer is 2,925.

Anna

What number did she start with?

GD

4 PS

7b. Jan thinks of a number.

I add 2,000 to it, subtract 10, add 3, then subtract 200. My answer is 2,901.

Jan

What number did he start with?

GD

4 PS

8a. Complete the sequence.

8,996		9,156		9,316

What is the sequence increasing by each time?
Explain how you know.

GD

4 R

8b. Complete the sequence.

5,412		5,394		5,376

What is the sequence decreasing by each time?
Explain how you know.

GD

4 R

9a. Haider says,

Haider

When I subtract 700 from 5,352, then add 50, I get 4,652.

Correct Haider's answer and explain his mistake.

GD

4 R

9b. Daniella says,

Daniella

When I add 60 to 4,673, then subtract 800 I get 3,813.

Correct Daniella's answer and explain her mistake.

GD

4 R

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Reasoning and Problem Solving
1s, 10s, 100s, 1,000s

Developing

1a. 7,728

2a. 6,591, 6,791 The sequence is increasing in steps of 100, because only the hundreds digit increases by 1 each time.

3a. 3,752. Gabriel has added 2,000, not 200.

Expected

4a. 5,942

5a. 1,840, 2,240 The sequence is increasing in steps of 400, because 1,040 + 400 = 1,440.

6a. 3,070. Cian has added 80, not subtracted 80.

Greater Depth

7a. 2,147

8a. 9,076, 9,236 The sequence is increasing in steps of 80, because 9,156 – 8,996 = 160 ÷ 2 = 80.

9a. 4,702. Haider has subtracted 700 but has not added 50.

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Developing

1b. 2,719

2b. 3,847, 4,847 The sequence is increasing in steps of 1,000, because only the thousands digit increases by 1 each time.

3b. 4,609. Lucy has subtracted 5, not 50.

Expected

4b. 2,365

5b. 6,833, 6,803 The sequence is decreasing in steps of 30, because 6,893 – 30 = 6,863.

6b. 3,399. Kelly has added 6,000, not 60.

Greater Depth

7b. 1,108

8b. 5,403, 5,385 The sequence is decreasing in steps of 9, because 5,412 – 5,394 = 18 ÷ 2 = 9.

9b. 3,933. Daniella has subtracted 60 and 800, rather than adding 60 and subtracting 800.

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