

Reasoning and Problem Solving

Step 11: Add 2-Digit and 3-Digit Numbers

National Curriculum Objectives:

Mathematics Year 3: (3N3) [Recognise the place value of each digit in a three-digit number \(hundreds, tens, ones\)](#)

Mathematics Year 3: (3C1) [Add and subtract numbers mentally, including three-digit number and tens](#)

Mathematics Year 3: (3C2) [Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction](#)

Mathematics Year 3: (3C4) [Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Find a calculation to make the answer provided when adding a 2-digit to a 3-digit number, with exchanging in one place value column and using Base 10.

Expected Find 3 possible calculations to make the answer provided when adding a 2-digit to a 3-digit number, with exchanging in up to two place value columns. Using pictorial representations.

Greater Depth Find 3 possible calculations to make the answer provided when adding a 2-digit to a 3-digit number, with exchanging in up to two place value columns. Using only words within the question.

Questions 2, 5 and 8 (Problem Solving)

Developing Use digit cards to complete the calculation, two digits already given. Includes exchanging in one place value column.

Expected Use digit cards to complete the calculation. Includes exchanging in one place value column.

Greater Depth Use digit cards to complete the blank calculation, using given parameters. Includes exchanging in two place value columns.

Questions 3, 6 and 9 (Reasoning)

Developing Explain if a given statement is correct or not. With exchanging in one place value column.

Expected Explain if a given statement is correct or not. With exchanging in up to two place value columns.

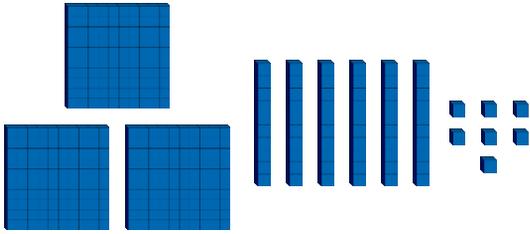
Greater Depth Explain if a given statement is correct or not. Multiple answers possible. With exchanging in up to two place value columns.

More [Year 3 Addition and Subtraction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Add 2-Digit and 3-Digit Numbers

1a. I have added a 2-digit number and a 3-digit number. My calculation has one exchange. This is the answer:



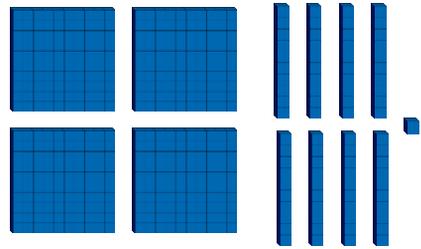
What is the calculation?



PS

Add 2-Digit and 3-Digit Numbers

1b. I have added a 2-digit number and a 3-digit number. My calculation has one exchange. This is the answer:



What is the calculation?



PS

2a. Use 3 digit cards to complete the calculation below.



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



PS

2b. Use 3 out of the 6 digit cards to complete the calculation below.



$$\begin{array}{r} \square \quad \square \quad 7 \\ + \quad 9 \quad \square \\ \hline 6 \quad 5 \quad 9 \end{array}$$



PS

3a. Karolina is adding a 3-digit number to a 2-digit number.

- The 3-digit number has a 4 in the ones column.
- The 2-digit number has a 6 in the ones column.

Karolina thinks the answer will have a 9 in the ones column.

Is she correct? Explain your answer.



R

3b. Filip is adding a 3-digit number to a 2-digit number.

- The 3-digit number has a 6 in the ones column.
- The 2-digit number has a 3 in the ones column.

Filip thinks the answer will have a 9 in the ones column.

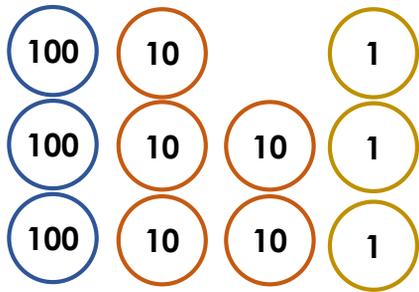
Is he correct? Explain your answer.



R

Add 2-Digit and 3-Digit Numbers

4a. I have added a 2-digit number and a 3-digit number. My calculation has one exchange. This is the answer:



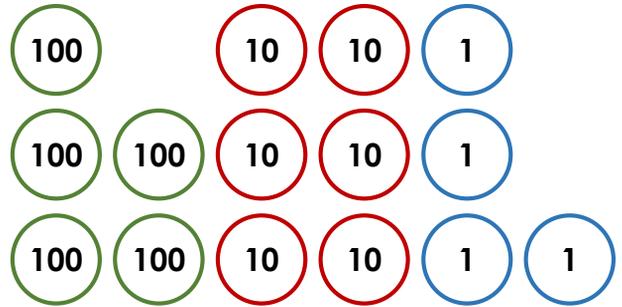
What is the calculation?



PS

Add 2-Digit and 3-Digit Numbers

4b. I have added a 2-digit number and a 3-digit number. My calculation has one exchange. This is the answer:

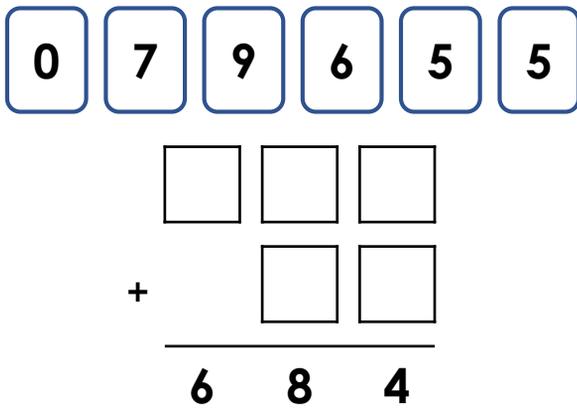


What is the calculation?



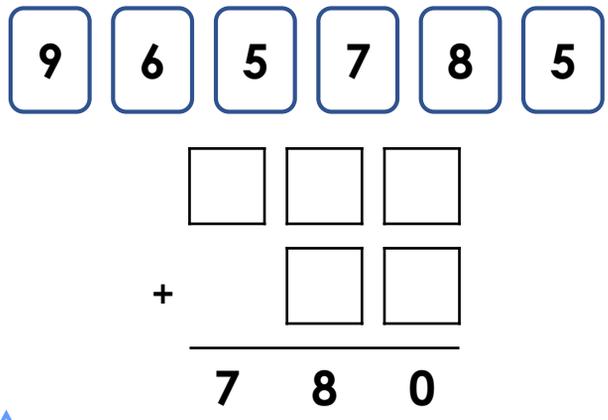
PS

5a. Use 5 digit cards to complete the calculation below. Use one exchange.



PS

5b. Use 5 digit cards to complete the calculation below. Use one exchange.



PS

6a. Zara is adding a 3-digit number to a 2-digit number.

- The 3-digit number has a 6 in the tens column and a 5 in the ones column.
- The 2-digit number has a 7 in the tens column and a 9 in the ones column.

Zara thinks the answer will have a 4 in the tens column and a 4 in the ones column.

Is she correct? Explain your answer.



R

6b. Harvey is adding a 3-digit number to a 2-digit number.

- The 3-digit number has a 5 in the tens column and a 5 in the ones column.
- The 2-digit number has a 9 in the tens column and a 8 in the ones column.

Harvey thinks the answer will have a 4 in the tens column and a 3 in the ones column.

Is he correct? Explain your answer.



R

Add 2-Digit and 3-Digit Numbers

Add 2-Digit and 3-Digit Numbers

7a. I have added a 2-digit number and a 3-digit number. My calculation has two exchanges. This is the answer:

six hundreds, three tens and six ones

What is the calculation?



PS

7b. I have added a 2-digit number and a 3-digit number. My calculation has two exchanges. This is the answer:

three hundreds, five tens and eight ones

What is the calculation?



PS

8a. Use 5 digit cards to complete the calculation below. Use two exchanges. The answer is between 600 and 650.



$$\begin{array}{r} \square \quad \square \quad \square \\ + \quad \square \quad \square \\ \hline \\ \hline \end{array}$$



PS

8b. Use 5 digit cards to complete the calculation below. Use two exchanges. The answer is between 500 and 550.



$$\begin{array}{r} \square \quad \square \quad \square \\ + \quad \square \quad \square \\ \hline \\ \hline \end{array}$$



PS

9a. Heather is adding a 3-digit number to a 2-digit number.

- The 3-digit number has an 8 in the tens column.
- The 2-digit number has a 7 in the ones column.

Heather thinks the answer will have a 0 in the tens column.

Is she correct? Explain your answer.



R

9b. Matthew is adding a 3-digit number to a 2-digit number.

- The 3-digit number has a 9 in the tens column.
- The 2-digit number has a 5 in the ones column.

Matthew thinks the answer will have a 3 in the tens column.

Is he correct? Explain your answer.



R

Reasoning and Problem Solving Add 2-Digit and 3-Digit Numbers

Developing

- 1a. Various answers, for example: $339 + 28$
2a. $491 + 81$
3a. Karolina is incorrect because 4 ones added to 6 ones equals 10 ones, so there would be a 0 in the ones column (the ten would be added to the tens column) (e.g. $12\bar{4} + 3\bar{6} = 1\bar{6}0$).

Expected

- 4a. Various answers, for example: $319 + 34$
5a. $589 + 95$, $599 + 85$
6a. Yes, Zara is correct because 5 ones added to 9 ones equals 14 ones, meaning there will be a 4 in the ones and a ten exchanged. 6 tens added to 7 tens (plus the exchange) equals 14 tens. (e.g. $1\bar{6}5 + \bar{7}9 = 2\bar{4}4$).

Greater Depth

- 7a. Various answers, for example: $599 + 37$
8a. Various answers, for example: $583 + 49$
9a. Heather could be correct because if the digits in the ones column total 9 or below and the tens total 10, there will be a 0 in the tens column (e.g. $3\bar{8}2 + \bar{2}7 = 4\bar{0}9$). If the digits in the ones and tens columns total 10 or above, this means that the tens column will not have a 0 (e.g. $3\bar{8}3 + \bar{2}7 = 4\bar{1}0$).

Reasoning and Problem Solving Add 2-Digit and 3-Digit Numbers

Developing

- 1b. Various answers, for example: $391 + 90$
2b. $567 + 92$
3b. Filip is correct because 6 ones added to 3 ones equals 9 ones (e.g. $21\bar{6} + 4\bar{3} = 25\bar{9}$).

Expected

- 4b. Various answers, for example: $490 + 74$
5b. $695 + 85$, $685 + 95$
6b. No, Harvey is incorrect because 5 ones added to 8 ones equals 13 ones, meaning there will be a 3 in the ones and a ten exchanged. 5 tens added to 9 tens (plus the exchange) equals 15 tens, not 14 tens (e.g. $1\bar{5}5 + \bar{9}8 = 2\bar{5}3$).

Greater Depth

- 7b. Various answers, for example: $299 + 59$
8b. Various answers, for example: $476 + 58$
9b. Matthew could be correct because if the digits in the ones column total 9 or below and then tens total 13, there will be a 3 in the ones column (e.g. $3\bar{9}4 + \bar{4}5 = 4\bar{3}9$). If the digits in the ones column total 10 or above and the digits in the tens total 13 or above, this means that the tens column will not have a 3 (e.g. $3\bar{9}5 + \bar{4}5 = 4\bar{4}0$).