

Varied Fluency

Step 8: Efficient Subtraction

Teaching Note:

This step explores different methods of subtraction. Children may find some methods more efficient than others and these can vary between children. Ensure discussion takes place to explore why children find various methods more efficient than others.

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](#)

Mathematics Year 4: (4C3) [Estimate and use inverse operations to check answers to a calculation](#)

Mathematics Year 4: (4C4) [Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why](#)

Differentiation:

Developing Questions to support comparing two methods of subtraction. Two 3-digit numbers with no exchanging.

Expected Questions to support comparing methods of subtraction. Includes two 4-digit numbers, with exchanges.

Greater Depth Questions to support comparing methods of subtraction. Includes 3-digit numbers from a 4-digit number or two 4-digit numbers, with exchanges. Includes some multi-step subtractions.

More [Year 4 Addition and Subtraction](#) resources.

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Efficient Subtraction

Efficient Subtraction

1a. Circle the most efficient way of solving the following calculation.

$$390 - 310 = \boxed{}$$

column method

count on in tens



VF

1b. Circle the most efficient way of solving the following calculation.

$$965 - 342 = \boxed{}$$

column method

count on in tens



VF

2a. True or false? Counting on in hundreds to find the difference would be an efficient method of solving this calculation.

$$845 - 345$$



VF

2b. True or false? Adding one to both numbers before using a mental method would be an efficient method of solving this calculation.

$$799 - 399$$



VF

3a. 285 people are on the beach. 132 of them leave. How many people are left?

- Count on in twos.
- Use a column method.

Which is the most efficient method?



VF

3b. There are 845 trees in a forest. 820 are chopped down. How many trees are left?

- Use a column method.
- Find the difference by counting in fives.

Which is the most efficient method?



VF

4a. Write each subtraction next to an efficient method in the table below.

$$896 - 351$$

$$782 - 732$$

Counting On	
Column Method	



VF

4b. Write each subtraction next to an efficient method in the table below.

$$247 - 147$$

$$582 - 370$$

Partition	
Counting On	



VF

Efficient Subtraction

5a. Circle the most efficient way of solving the following calculation.

$$6,000 - 4,584 = \boxed{}$$

partition

take one
off both

count on



VF

6a. True or false? Adding five to both numbers would be an efficient method of solving this calculation.

$$5,350 - 1,295$$



VF

7a. There are 3,427 cars in the car park. 1,046 cars leave. How many cars are left?

- Use a number line.
- Use a column method.

Which is the most efficient method?



VF

8a. Write each subtraction next to an efficient method in the table below.

$$5,682 - 3,999$$

$$2,025 - 1,850$$

$$8,294 - 3,523$$

Counting On	
Column Method	
Add on to both	



VF

Efficient Subtraction

5b. Circle the most efficient way of solving the following calculation.

$$1,530 - 1,470 = \boxed{}$$

count
on

column
method

take one
off both



VF

6b. True or false? Adding three to both numbers would be an efficient method of solving this calculation.

$$4,746 - 2,997$$



VF

7b. A factory makes 7,540 teacups. 2,990 are chipped. How many are perfect?

- Add 10 to both numbers.
- Use a column method.

Which is the most efficient method?



VF

8b. Write each subtraction next to an efficient method in the table below.

$$3,735 - 1,616$$

$$1,397 - 1,187$$

$$8,269 - 2,599$$

Counting On	
Column Method	
Add on to both	



VF

Efficient Subtraction

9a. Circle the most efficient way of solving the following calculation.

$$5,789 - 399 = \boxed{}$$

take one
off both

add one
to both

count on



VF

Efficient Subtraction

9b. Circle the most efficient way of solving the following calculation.

$$1,025 - 995 = \boxed{}$$

count
on

column
method

partition



VF

10a. True or false? Adding one to both numbers would be an efficient method of solving this calculation.

$$7,523 - 499$$



VF

10b. True or false? Adding ten to both numbers would be an efficient method of solving this calculation.

$$3,440 - 990$$



VF

11a. 2,150 fans attend a game. At half-time, 192 fans leave. A further 1,658 fans leave just before the final whistle. How many stayed behind?

Use an efficient method to solve the word problem.



VF

11b. A shop has 9,564 bags of flour. By the end of the day, 5,089 bags of white flour and 910 bags of wholemeal flour are sold. How many bags of flour are left?

Use an efficient method to solve the word problem.



VF

12a. Write each subtraction next to an efficient method in the table below.

$$2,082 - 1,071$$

$$3,495 - 2,995$$

$$1,149 - 949$$

$$8,334 - 675$$

Counting On	
Column Method	
Partitioning	
Add on to both	



VF

12b. Write each subtraction next to an efficient method in the table below.

$$4,526 - 337$$

$$1,023 - 923$$

$$7,000 - 5,654$$

$$2,594 - 2,011$$

Counting On	
Column Method	
Partitioning	
Take off both	



VF

Varied Fluency Efficient Subtraction

Developing

1a. Count on in tens as both numbers are multiples of ten. $390 - 310 = 80$.

2a. True

3a. $285 - 132 = 153$. Use a column method as only one number is a multiple of two and they are too far apart.

4a. Various answers, for example:

Counting On	$782 - 732$
Column Method	$896 - 351$

Expected

5a. Take one off both numbers, then use the column method. This eliminates the need to exchange. $5,999 - 4,583 = 1,416$.

6a. True

7a. $3,427 - 1,046 = 2,381$. Children may find a column method may be more efficient as the numbers are not close together.

8a. Various answers, for example:

Counting On	$2,025 - 1,850$
Column Method	$8,294 - 3,523$
Add on to both	$5,682 - 3,999$

Greater Depth

9a. Adding one to both numbers eliminates the need to exchange. $5,790 - 400 = 5,390$ could then be completed mentally.

10a. True

11a. Various methods used to achieve an answer of 300.

12a. Various answers, for example:

Counting On	$1,149 - 949$
Column Method	$8,334 - 675$
Partitioning	$2,082 - 1,071$
Add on to both	$3,495 - 2,995$

Varied Fluency Efficient Subtraction

Developing

1b. Column method as neither number is a multiple of 10 and they are too far apart to count in tens. $965 - 342 = 623$.

2b. True

3b. $845 - 820 = 25$. Both numbers are close together and are multiples of five, so finding the difference by counting on in fives would be efficient.

4b. Various answers, for example:

Partition	$582 - 370$
Counting On	$247 - 147$

Expected

5b. Counting on, as the numbers are close together and it would be possible to count on in tens. $1,530 - 1,470 = 60$.

6b. True

7b. $7,540 - 2,990 = 4,550$. By adding 10 to both numbers, it should be easier to calculate $7,550 - 3,000$. A column method would require 2 exchanges.

8b. Various answers, for example:

Counting On	$1,397 - 1,187$
Column Method	$3,735 - 1,616$
Add on to both	$8,269 - 2,599$

Greater Depth

9b. Counting on in tens would eliminate the need to exchange. $1,025 - 995 = 30$.

10b. True

11b. Various methods used to achieve an answer of 3,565.

12b. Various answers, for example:

Counting On	$1,023 - 923$
Column Method	$4,526 - 337$
Partitioning	$2,594 - 2,011$
Take off both	$7,000 - 5,654$