



Everyday Mathematics

Trade-First Subtraction (Focus Algorithm)



Trade-First Subtraction Algorithm

Trade-first subtraction involves:

- Figuring out the place value of digits,
- Making decisions about where trades are necessary,
- Trading first before doing any subtraction, and
- Focusing on the subtraction in one place-value column at a time.

Trade-First Subtraction Algorithm

The **trade-first subtraction** algorithm looks very similar to the “traditional” method of subtracting. The key difference is that *all* trades are completed before any subtracting.

You can perform the trades beginning from the right or the left. When first introduced to the algorithm, children may prefer to draw vertical lines separating the columns.

Solve $9,231 - 4,557$ using the **trade-first subtraction** algorithm.

Trade-First Subtraction Algorithm

Solve $9,231 - 4,557$.

Set up the problem.

Write the numbers in their place-value columns.

	thousands	hundreds	tens	ones
	9	2	3	1
–	4	5	5	7

Trade-First Subtraction Algorithm

Solve $9,231 - 4,557$.

Decide where trades need to be made.

The **hundreds** require a trade.

Go to the thousands place and break one of the 9 [1000s] into 10 [100s]. We now have 8 [1000s] and 12 [100s].

thousands	hundreds	tens	ones
8	12		
9	2	3	1
– 4	5	5	7

Trade-First Subtraction Algorithm

Solve $9,231 - 4,557$.

Decide where trades need to be made.

The **tens** require a trade.

Go to the hundreds place and break one of the 12 [100s] into 10 [10s]. We now have 11 [100s] and 13 [10s].

thousands	hundreds	tens	ones
	11		
8	12	13	
9	2	3	1
—	4	5	7

Trade-First Subtraction Algorithm

Solve $9,231 - 4,557$.

Decide where trades need to be made.

The **ones** require a trade.

Go to the tens place and break one of the 13 [10s] into 10 [1s]. We now have **12** [10s] and **11** [1s].

	thousands	hundreds	tens	ones
		11	12	
	8	12	13	11
	9	2	3	1
—	4	5	5	7

Trade-First Subtraction Algorithm

Solve $9,231 - 4,557$

Now we're ready to subtract.

At this point, the order in which the steps are completed will not matter.

Subtract in the thousands, the hundreds, the tens, and the ones column.

thousands	hundreds	tens	ones
	11	12	
8	12	13	11
9	2	3	1
– 4	5	5	7
4	6	7	4

Trade-First Subtraction Algorithm

$$9,231 - 4,557 = 4,674$$

Note that when children use **the trade-first subtraction** algorithm to solve an subtraction problem, they have an opportunity to practice a variety of skills related to developing number sense and algebraic reasoning.

These skills include:

- *Writing numbers according to the place value of the digits,*
- *Breaking a hundred as 10 [10s]; breaking a ten as 10 [1s], and*
- *Renaming numbers after shifting a group of 10 [10s] or a group of 10 [1s] to the column on its right.*

Trade-First Subtraction Algorithm

$$9,231 - 4,557 = 4,674$$

With the **trade-first subtraction** method, children easily talk about the place-value columns within which they are working. Because all trades are completed first, the procedure itself is simplified.

Finally, if children trade where it is not necessary, they can adjust their final answer by regrouping. See the column-addition method for more information about regrouping the answer.