

YR4 ADDITION AND SUBTRACTION KNOWLEDGE ORGANISER

Key Concepts

- Add and subtract 1s, 10s, 100s and 1,000s
- Add and subtract numbers mentally
- Add and subtract numbers using formal written methods
- Estimate answers

Key Vocabulary

- add/addition
- subtract/subtraction
- calculate/calculation
- mental calculation
- written method
- operation
- total
- amount
- exchange
- regroup



Addition and Subtraction Vocabulary

add total combined more
increase plus altogether sum



minus take away reduce less than
difference decrease fewer than



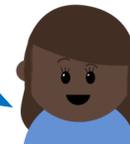
Add and Subtract 1s, 10s, 100s, and 1,000s

TH	H	T	O
2	6	3	8



If I add ones to a number, I need to add it to the digit in the ones column.

The same applies if you are adding tens, hundreds or thousands - you add to the digit in that place value column.

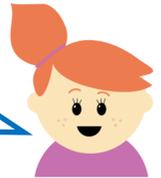


If I add a multiple of 100 to the number above, the tens and ones will not change. The thousands will only change when the hundreds totals more than 9.

Estimate Answers

Estimating means to get a rough idea of an answer. We can use estimation to help us check if an answer to a calculation is correct.

I am calculating $3,478 + 2,983$.
I think the answer is 4,461.

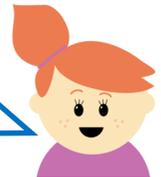


I am also calculating $3,478 + 2,983$.
I think the answer is 6,461.

Millie and Darcey could check their answers by doing the calculation again. However, if they have made a mistake, they may just make the same mistake again.

Instead, they could use **rounding** to check if their answer is correct.

We can round the numbers to the nearest hundred. So $3,478 + 2,983$ becomes $3,500 + 3,000$.



$3,500 + 3,000 = 6,500$.

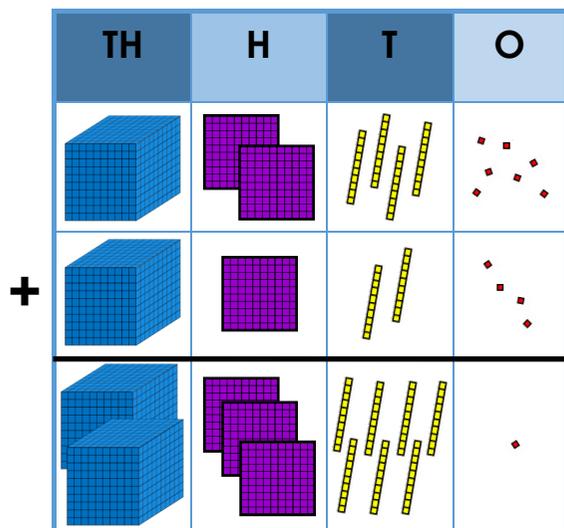
Now we compare our estimate to the actual answers given. The answer 6,461 is very close to the estimate of 6,500 so that tells us it is more likely to be correct.



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Addition - Formal Written Methods

Using base 10 to show column addition:



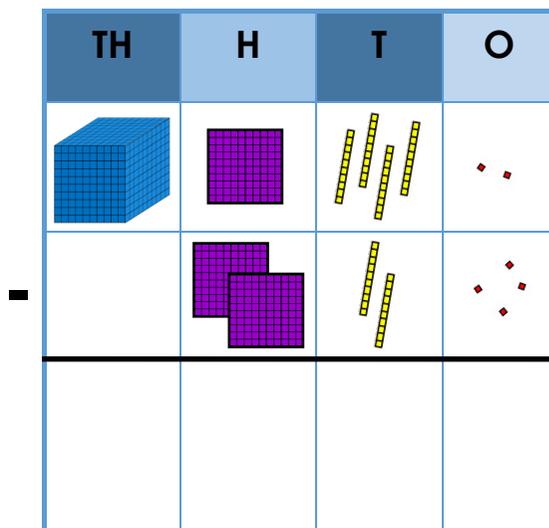
	1	2	4	7
+	1	1	2	4
	2	3	7	1

1

With column addition and subtraction, you must always start the calculation with the column on the right. $7 + 4$ is 11. We can not put 11 in the ones column so a ten is placed under the tens column and the one is placed in the ones column. We then add the extra ten when we add that column.

Subtraction - Formal Written Methods

Using base 10 to show column subtraction:



	1	1	4	2
-		2	2	4

In the ones column, we don't have enough ones to subtract 4 from 2. To complete the calculation, we need to exchange a ten for ten ones.

To show this, the 4 is changed to a 3 because we now have 3 tens. The 2 becomes a 12. 42 is the same as $30 + 12$. We still have the same amount, but it has been regrouped. Now, we can start subtracting.

$12 - 4 = 8$ so 8 is written in the ones column.

In the tens column, $3 - 2 = 1$ so 1 is written in the tens column.

			³ 4	¹ 2
-		2	2	4
			1	8

Looking at the hundreds column, we do not have enough to subtract 2 from 1. We need to exchange the thousand for ten hundreds. To show this, the 1 (thousand) is changed to a 0 as we now have 0 thousands. The 1 (hundreds) becomes an 11. 11 hundreds is the same as 1 thousand and 1 hundred. Now, we can finish the subtraction. $11 - 2 = 9$.

	⁰ 1	¹ 1	³ 4	¹ 2
-		2	2	4
		9	1	8

