

Subtraction

Students are encouraged to use **mental math strategies** to subtract 2-digit numbers **in their head**.

Strategies students may use in their head:

$$37-25$$

Take away tens, then take away the ones

(30-20 is 10, now 7-5 is 2, so my answer is 12)

Friendly Numbers

(change the 37 to 40, now 40-20 is 20, -5 more is 15—now I must -3 since I added 3 to make 37 40)

Matching strategy

(some students may match the ones to make subtracting easier

35-25= 10, now I must + 2 more since I was took 2 away from my starting point)

Balancing strategy

(to make my question easier begin at 40, but since I add 3 to get to 40, I add 3 more to my other number so the question becomes 40-28 / 40-20 is 20-8 is 12)

Students choose the strategy that best fits the question, as well as the strategy that best fits their thinking. Many students will only use the first two strategies above and that's okay—it's what works best for them.

Subtraction

Students are encouraged to use a variety of strategies to subtract 2-digit and 3-digit numbers on paper.

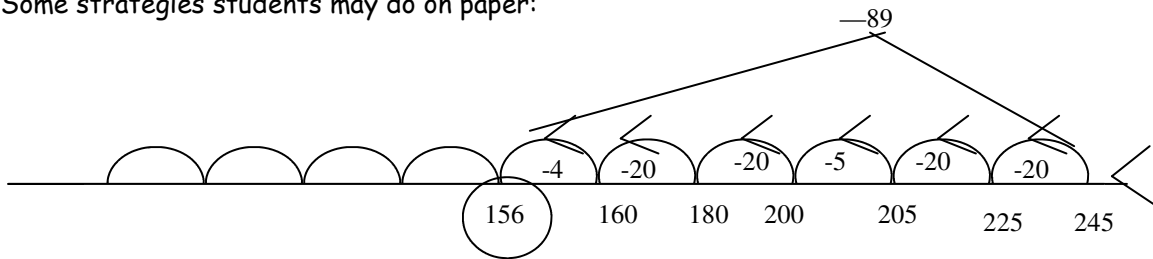
Students are encouraged first to look at the numbers and decide on a reasonable answer (ie. $45-38$, can't possibly be 20—it's about $50-40$ —it will be around 10, probably a bit lower than 10).

Students are encouraged to use efficient and accurate strategies. For example if your child is asked to do the following question:

$$245-89$$

Let them think what would a reasonable answer be—Oh its about $245-100$ —so my answer is for sure a little bigger than 145! If they get the answer 200 they know they must have made an error.

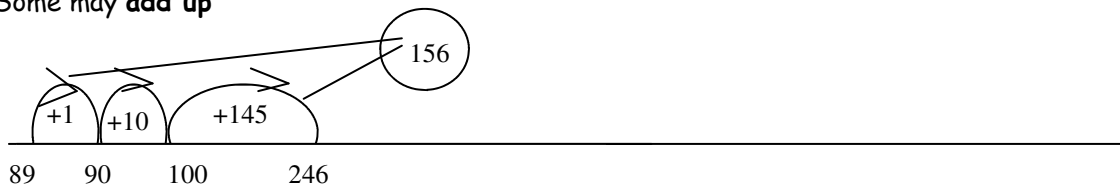
Some strategies students may do on paper:



Some students will take away 10, 10, 10, 10, 10, 10, 10, 10, 9 on a **numberline**

Still others may -80, then 9

Some may **add up**



Still others will:

$$245-89$$

$$245-45=200, 200-40=160, 160-4=156$$

-89

Students need to be able to compose and decompose numbers—put numbers together and take numbers apart.

As well, students need to know the standard algorithm.

It's important that they clearly understand what they are doing when they do the standard algorithm.

At times many learn the process of starting at the ones, borrowing if need be, moving to the next column etc...but when they get their answer they haven't thought about what the numbers mean and they can make errors and not know that their answer is not reasonable. We encourage students to use a variety of strategies when solving math problems to help them build their understanding of number.

Here's the standard algorithm.

245-89

I now need to put this vertically instead of horizontally.

$$\begin{array}{r}
 1 \ 13 \\
 \overline{) 245} \\
 - 89 \\
 \hline
 1 \ 5 \ 6
 \end{array}$$

1. I cannot take 9 away from 5 (5-9) so I must borrow from my tens column.

2. I move one ten to my ones and I now have 15 ones. I've taken a ten away from my tens so I now have 3 tens left.

3. 15-9= 6

4. I cannot take 8 tens away from 3 tens so I must borrow 1 hundred. Now I have 1-hundred left

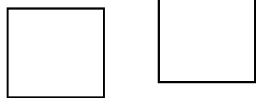
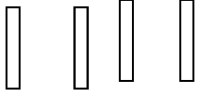
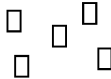
5. Now I can take 8 tens away from 13 tens, which leaves me with 5 tens (50)

6. One hundred—0 = one hundred.

7. My answer is 156

Many students make the error by always subtracting the largest number from the smallest. So...when they look at the ones they go 9-5=4 This is where understanding the value of each number is important. We only have 5 ones, can we take 9 ones away?

If your child is experiencing this, showing the number using place value blocks would be helpful.

hundreds	tens	ones
		

Can I take 9 away?
So...what should I do?