

How to Add and Multiply Fast

Overview: Want a peek under the "hood" of my brain when I do a mental math calculation? This lesson includes steps that take a slow-motion, step-by-step snapshot of what goes on when I add numbers in my head. The first thing you need to learn is how to look at the *whole* problem when adding, and also learning how to multiply from LEFT to RIGHT, both of which are opposite from most math techniques out there. I'll show you how to do this. It's easy, and essential to working bigger numbers in your head.

Materials

- Pencil
- Paper

Activity

Let's take a look at the following problem: $123 + 372 = ?$

First think about the hundreds place. I know this isn't the way most folks teach, but as I mentioned, try learning to add from left to right, because it's a lot faster to do in your head. So the first step is to get a general idea of the answer before even calculating it. For this problem, it looks like I am going to add about 100 (rounding down from 123) to 400 (rounding up) to get roughly 500.

Now look for patterns and shortcuts. I can add 25's a lot easier than oddball numbers like 123 and 372. So I adjust the math problem a little like this: 123 is close to 125, while 372 is close to 375. If we add these two, we get: $125 + 375 = 500$. So we can expect the answer to be a little less than 500.

How much did I add to 123 to get it to 125? Just 2.

How much did I add to 372 to get it to 375? Just 3.

Add these two together to get $2 + 3 = 5$. Subtract 5 from 500 to get the answer: 495.

Here's another problem: $576 + 93 = ?$

93 is really close to 100. In fact, it's only 7 less, so I already see something I can use. Since it's easier to add 100 than 93, I can solve the problem like this: $576 + 100 - 7 = 676 - 7 = 669$, which is a lot easier to do than the original program.

The answer is: $576 + 93 = 669$

What about $432 + 79 = ?$

Take a look at the tens place: there's a 3 and a 7, which sums to 10, so we can break 79 into $70 + 9$. So the problem changes a bit: $432 + 79$ becomes $432 + 70 + 9 = 502 + 9 = 511$.

Now let's shift over to multiplication. This is where you'll learn how to multiply from left to right. Are you ready?

We're going to do a really simple one to get started: $300 \times 126 = ?$

Look at it like this: $300 = 3 \times 100$. First multiply 126 by 3 then multiply the result by 100.

Don't forget that $126 = 100 + 20 + 6$. So now the problem becomes:

$$3 \times 126 = (3 \times 100) + (3 \times 20) + (3 \times 6)$$

$$3 \times 100 = 300$$

$$3 \times 20 = 60$$

$$3 \times 6 = 18$$

Add all the numbers together to get 378. Multiply this by 100 by placing two zeros at the end so the final answer is: 37,800.

$$300 \times 126 = \underline{37,800}$$

Now it's your turn! Work out the exercises below. (You'll find answers at the back of this book.)

Exercises

1. $23 + 74$
2. $48 + 169$
3. $627 + 192$
4. $799 + 5692$
5. $562 + 658$
6. 20×236
7. 400×41
8. 300×344
9. 50×239
10. 203×456

Answers to Exercises: How to add and multiply fast in your head

1. 97
2. 217
3. 819
4. 6491
5. 1220
6. 4720
7. 16,400
8. 103,200
9. 11,950
10. 92,568