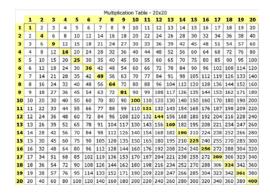# Multiplication Tables

Overview: If you haven't memorized your multiplication table yet, I am going to show you how to you need to memorize only *three* of the 400 numbers on a 20 times table in order to know your table.

What to Learn: Math isn't about solving problems on any one particular way, but rather it's about puzzling the solution out multiple ways! The times table is essential to doing math in your head, but you don't need to know every cell on the table by heart. With a couple of quick tips and tricks, you'll be able to know your table up to 20 without a lot of memorization simply by being clever about the way you go about it.

Lab Time:

1. Fill in the upper 1-10 multiplication table by the following:
   a. Fill in the ones row and column.
   b. Double the number to fill in the two's column and row.
   c. Count by threes to fill in the three's row and column.
   d. Count by fours to fill in the four's row and column.
   e. The fives column and row either ends in five or zero, so fill those in.
   f. Fill in the tens row and column by adding a zero to the original number.
   g. Use the fun facts about nine to fill in the nines row and column. (The answer to 9 x *any number* is one less than that number for the tens digit, plus the remainder to make the two digits add up to 9. For example, 9 x 5 = 45, because the tens digit 4 is one less than the number we're multiplying by 9, and you need a 5 to add to the 4 to make the sum equal 9.)
   h. Fill in the squares of the numbers 6, 7, and 8. Most people know these already. If you don't, you'll need to memorize those also!
   i. Did you notice that 6x7 gives the same result as 7x6? Before you answer that, look at step 2 below…
2. There are only three multiplication facts left that you have to memorize. Which are they?

   _____

   _____

   _____

3. You did it! You should have one table completely filled out. Now, onward to the next one…!
4. You already know how to multiply by 11. Use this to fill in the 11's column of the Multiplication Table on the next page.
5. How do you think you can fill out the 20 row and column? Can you double the number and add a zero to the end? Do that now.
6. The rest of the table is simply multiplying two numbers together that are both between 12 and 19. To do this quickly, follow these steps:
   a. Take the first number, and add the ones digit from the second number to it. Add a zero to the end of this number (or multiply by ten). Save this in your head. Now multiply the ones digits of the two original numbers together. Add this result to the saved number to get the final answer.
   b. This trick takes practice to master… which is good because you've got a table to fill out!

Multiplication Tables

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