

How to Make a Multiplication Table

Improving your mental arithmetic skills will take practice, and one of the best ways to practice is to write out similar calculations and look for patterns. You can use a multiplication table to improve your multiplication skills and perform multiplication and division quickly without a calculator.

Start With an Empty Multiplication Table

- Start with a new blank table for each homework assignment so that you can practice!
- Use a template or draw your own on scratch paper. Graph paper works well.
- Ask your instructor if you can use a blank table on tests; if you practice filling out tables as you do your homework, you will soon be able to fill them out quickly!
- If you don't have time to complete the entire table first, fill it in as you need it.

Fill in Easy Calculations First

- Start with the entries that you know right away, skip the ones you don't know.
- You may not know very many at first, but that's ok! With practice you will find more of them.
- Save the most difficult entries for last, see if you can use the easier calculations to find these.

Find Patterns and Strategies

- Think of the table like a puzzle; if you can find patterns and pieces that are the same, it will be easier to remember how to fill it in next time. The patterns you find yourself are the easiest to remember!
- Think about the area of a rectangle, this is a multiplication problem! Look at the rectangles formed when you multiply two numbers on the table, now count up the squares inside. What do you notice?
- Remember that multiplication is the same in either order. For example: $4 \times 2 = 2 \times 4$
Where can you see this on the multiplication table? Fill out row 2 and column 2 and compare them. How about row 5 and column 5? Other rows and columns?
- Think about similar numbers and see how they are related on the table. How is 4 related to 2? How is 6 related to 3? Compare these rows and see if you can find a pattern. Now see if you can find similar patterns for different rows.
- Pick an entry. How is the entry above it related? How about the entry below? On either side?
- A perfect square is the same number multiplied by itself. Where can you find these on the table?

Use What you Know About Multiplication

- Remember that when you multiply by 2, you double. Can you fill in this row?
- When you double 2, you get 4. What happens when you double row 2? Can you find other rows that you can double?
- When you multiply by 10, you add a 0 to the end of the number. Can you fill out this row?
- Do you know how to multiply by 5 quickly? If you multiply an odd number by 5, the result will end in 5. If you multiply an even number by 5, the result will end in a 0. What else do you notice about these numbers? Can you fill in this row?
- What happens if you multiply a single digit number by 11? See what happens when you fill in this row.
- Look at the digits when you multiply by 3. Add up the digits, do you get a multiple of 3?
- Now look at the digits when you multiply by 9. When you add these digits, do you get a multiple of 9? Do you see a pattern in this row?

x	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

x	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												