

The 11 times tables. Stg 6 x/÷

Name: _____

Are you serious? These ones are so easy you don't even have to memorise them right? Everyone knows, you just put the number you are multiplying down twice, then violà, hey presto you're done! For example $11 \times 3 = 33$, $11 \times 7 = 77$ and so on. It's true, and it works **because** $11 = 10 + 1$. It works until 11×9 anyway. Then 11×10 is in your $10 \times$ tables, which of course is easy too ($11 \times 10 = 110$). Then all you have to do is memorise the two nasty ones at the end: (Actually memorising them is a good idea)

So, $11 \times 10 = 110$, $11 \times 11 = 121$, $11 \times 12 = 132$.

(Alright, that's it, finished, done, let's go home). Hold your horses there cowboy. What if I told you that you could multiply any two digit number by 11, in your head, by the end of this worksheet? You could impress your friends and family with your mental agility or win fame and fortune as the human calculator!

OK, here's a couple of tricks. Take the number that you are multiplying by 11. Say 12. (Yes. I know you know the answer, just bear with me). All you do in your mind is karate chop the 12 apart so there's a space between the 1 and 2

Like this $1 \ 2$. Then add $1 + 2$ and put the sum in the space.

$$\begin{array}{r} 1 + 2 = 3 \\ \swarrow \\ 1 \ 3 \ 2 \end{array}$$

There you have it. (You must be joking, that's too cool to be true!)

OK then, try it for yourself:

$$11 \times 15 = ???$$

$$\begin{array}{r} 1 + 5 = _ \\ \swarrow \\ 1 \ _ \ 5 \end{array}$$

You got 165, right? Check it on a calculator.

Now try these ones:

$$\begin{array}{r} \text{a.} \quad 3 + 4 = _ \\ \swarrow \\ 11 \times 34 = 3 \ _ \ 4 \end{array}$$

$$\begin{array}{r} \text{b.} \quad 7 + 2 = _ \\ \swarrow \\ 11 \times 72 = 7 \ _ \ 2 \end{array}$$

$$\begin{array}{r} \text{c.} \quad 5 + 3 = _ \\ \swarrow \\ 11 \times 53 = 5 \ _ \ 3 \end{array}$$

$$\begin{array}{r} \text{d.} \quad 6 + 2 = _ \\ \swarrow \\ 11 \times 62 = 6 \ _ \ 2 \end{array}$$

$$\begin{array}{r} \text{e.} \quad 2 + 7 = _ \\ \swarrow \\ 11 \times 27 = 2 \ _ \ 7 \end{array}$$

$$\begin{array}{r} \text{f.} \quad 1 + 6 = _ \\ \swarrow \\ 11 \times 16 = 1 \ _ \ 6 \end{array}$$

You can probably do some of these in your head already! Have a go:

g. $11 \times 41 =$ _____

h. $11 \times 32 =$ _____

i. $11 \times 43 =$ _____

j. $11 \times 52 =$ _____

k. $11 \times 23 =$ _____

l. $11 \times 17 =$ _____

m. $11 \times 25 =$ _____

n. $11 \times 33 =$ _____

o. $11 \times 44 =$ _____

p. $11 \times 71 =$ _____

...But what if the number in the middle comes to **more than 9**? Well, it's much the same, but you just carry and add the leftover. (What?) I'll show you. Look at this one:

11 x 67 = ??? 1st, split it 6_7, then add 6 + 7 = 13. Then pop the 3 in the middle as usual. Lastly put the leftover 1 in the hundreds column with the 6. 6 + 1 = 7 (hundred). Total **737**

Look at it this way:

e.g. $7 + 4 = 11$
 $11 \times 74 = \begin{array}{r} 714 \\ 714 \\ \hline \end{array}$
 = 814

Still easy, just another little step.

e.g. $6 + 7 = 13$
 $11 \times 67 = \begin{array}{r} 67 \\ 67 \\ \hline \end{array}$
 = __7

Try: $5 + 6 = 11$
 $11 \times 56 = \begin{array}{r} 56 \\ 56 \\ \hline \end{array}$
 = ____

Try: $7 + 8 =$
 $11 \times 78 = \begin{array}{r} 78 \\ 78 \\ \hline \end{array}$
 = ____

This is very cool, now you can multiply any 2 digit number by 11! Try some:

q. $5 + 9 =$
 $11 \times 59 = \begin{array}{r} 59 \\ 59 \\ \hline \end{array}$
 = ____

r. $3 + 8 =$
 $11 \times 38 = \begin{array}{r} 38 \\ 38 \\ \hline \end{array}$
 = ____

s. $1 + 9 =$
 $11 \times 19 = \begin{array}{r} 19 \\ 19 \\ \hline \end{array}$
 = ____

t. $9 + 9 =$
 $11 \times 99 = \begin{array}{r} 99 \\ 99 \\ \hline \end{array}$
 = ____

u. $8 + 8 =$
 $11 \times 88 = \begin{array}{r} 88 \\ 88 \\ \hline \end{array}$
 = ____

v. $8 + 4 =$
 $11 \times 84 = \begin{array}{r} 84 \\ 84 \\ \hline \end{array}$
 = ____

OK, it seems like you're ready to fly solo now. Try these:

- w. $11 \times 55 =$ _____ x. $11 \times 68 =$ _____ y. $11 \times 98 =$ _____
 z. $11 \times 95 =$ _____ aa. $11 \times 79 =$ _____ bb. $11 \times 94 =$ _____

Well done, you are now officially a smarty-pants. The more curious among you will be wondering now if there's a trick to multiply 11 by any number at all. Why yes. Yes there is. Check out this brilliant You Tube clip that explains it:

Look up: "Math trick - Multiply any number by eleven instantly!" on the tecmath channel

<https://www.youtube.com/watch?v=7GRv84cRkzU>

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ANSWERS (Don't print this bit)

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Like this $1 \ 2$. Then add $1 + 2$ and put the sum in the space.

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h. $11 \times 32 = 352$

i. $11 \times 43 = 473$

j. $11 \times 52 = 572$

k. $11 \times 23 = 253$

l. $11 \times 17 = 187$

m. $11 \times 25 = 275$

n. $11 \times 33 = 363$

o. $11 \times 44 = 484$

p. $11 \times 71 = 781$

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Try: $5 + 6 = 11$
 $11 \times 56 = \begin{array}{r} 56 \\ 56 \\ \hline 616 \end{array}$

Try: $7 + 8 = 15$
 $11 \times 78 = \begin{array}{r} 78 \\ 78 \\ \hline 858 \end{array}$

This is very cool, now you can multiply any 2 digit number by 11! Try some:

q. $5 + 9 = 14$
 $11 \times 59 = \begin{array}{r} 59 \\ 59 \\ \hline 649 \end{array}$

r. $3 + 8 = 11$
 $11 \times 38 = \begin{array}{r} 38 \\ 38 \\ \hline 418 \end{array}$

s. $1 + 9 = 10$
 $11 \times 19 = \begin{array}{r} 19 \\ 19 \\ \hline 209 \end{array}$

t. $9 + 9 = 18$
 $11 \times 99 = \begin{array}{r} 99 \\ 99 \\ \hline 1089 \end{array}$

u. $8 + 8 = 16$
 $11 \times 88 = \begin{array}{r} 88 \\ 88 \\ \hline 968 \end{array}$

v. $8 + 4 = 12$
 $11 \times 84 = \begin{array}{r} 84 \\ 84 \\ \hline 924 \end{array}$

OK, it seems like you're ready to fly solo now. Try these:

w. $11 \times 55 = \underline{\quad} \mathbf{605}$

x. $11 \times 68 = \underline{\quad\quad} \mathbf{748}$

y. $11 \times 98 = \underline{\quad} \mathbf{1078}$

z. $11 \times 95 = \underline{\quad} \mathbf{1045}$

aa. $11 \times 79 = \underline{\quad\quad} \mathbf{869}$

bb. $11 \times 94 = \underline{\quad} \mathbf{1034}$

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