# My New <br> 10 math Ir. 

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## Math

This book is intended for any youngster (or maybe adult) who wants to overcome the challenge of the basic Times 9 Table or wants to be able to multiply two-digit numbers by 11 in their head. Yes, it takes a little practice but there are a couple of tricks to make it easier. Now, in 5 seconds, without the use of a calculator, or pencil and paper, what does 11 times 98 equal? The trick, using simple addition, is in this book.

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Hi! My name is Mathew.
That's Math__ as is mathematics and _ ___ ew as in you are going to learn some multiplication tricks.


Before I share the new tricks let's just review some other things to remember when multiplying.


Remember 0 times anything is always equal to 0.

$$
2 \times 0=0
$$

Now it's your turn, quick! What is $4 \times 0$ ?
That's right it's 0, good job

Remember 1 times anything is always equal to the "anything."

$$
1 \times 6=6
$$

Now it's your turn, quick! What is $1 \times 9$ ?
Great work, you are correct it's 9 .

And of course you remember that 10 times anything is the "anything" with a 0 added at the end.
$10 \times 3=30$

## What is $10 \times 5$ ?

That's right. It is 50 .

Now here is a trick you can use to help you with the Times 9 multiplication table for $9 x$ 0 through $9 \times 10$.


First write down the table:
$9 \times 0=$
$9 \times 1=$
$9 \times 2=$
$9 \times 3=$
$9 \times 4=$
$9 \times 5=$
$9 \times 6=$
$9 \times 7=$
$9 \times 8=$
$9 \times 9=$
$10 \times 9=$

Next complete the table with the easy answers for Times 0,1 , and 10.
$9 \times 0=0$ ( 0 times anything always equals 0 ).
$9 \times 1=9$ ( 1 times anything always equals the anything).
$9 \times 2=$
$9 \times 3=$
$9 \times 4=$
$9 \times 5=$
$9 \times 6=$
$9 \times 7=$
$9 \times 8=$
$9 \times 9=$
$10 \times 9=90$ (10 times anything equals the anything with 0 added to the end).

Simple enough, right?


Next, pretend you don't know the answers to $9 \times 2$ through $9 \times 9$ and starting at the top $(9 \times 2)$ write the numbers 1 through 8 next to each.

$$
\begin{array}{r}
9 \times 0=0 \\
9 \times 1=9 \\
9 \times 2=1 \\
9 \times 3=2 \\
9 \times 4=3 \\
9 \times 5=4 \\
9 \times 6=5 \\
9 \times 7=6 \\
9 \times 8=7 \\
9 \times 9=8 \\
10 \times 9=90
\end{array}
$$

$$
\begin{array}{ll}
9 \times 0=0 & 9 \times 6= \\
9 \times 1=9 & 967= \\
9 \times 2=1 & 9 \times 8= \\
9 \times 3=2 & 99= \\
9 \times 4=3 & 10 \times 9=90 \\
9 \times 5= &
\end{array}
$$

That was easy. Now do the same thing but start at the bottom $(9 \times 9)$.

$$
\begin{array}{r}
9 \times 0=0 \\
9 \times 1=9 \\
9 \times 2=18 \\
9 \times 3=27 \\
9 \times 4=36 \\
9 \times 5=45 \\
9 \times 6=54 \\
9 \times 7=63 \\
9 \times 8=72 \\
9 \times 9=81 \\
10 \times 9=90
\end{array}
$$

Success! You can easily write down the Times 9 multiplication table for 0 through 10.

Times 11 everybody. Yes, that is what I said.
TIMES 11, it's SCARY!

## Or is it?



First, look at 1-digit numbers multiplied by 11.
It is much like multiplying by 1 except there are two places in the answer. (One times anything is anything

- or in this case anything-anything).
$11 \times 0=0$ (Remember, 0 times anything is always 0 ).
$11 \times 1=11$
$11 \times 2=22$
$11 \times 3=33$
$11 \times 4=44$
$11 \times 5=55$
$11 \times 6=66$
$11 \times 7=77$
$11 \times 8=88$
$11 \times 9=99$
Wow! That was easy.
But can you easily multiply 2-digit numbers by 11 ?



## Yes - And here is the trick!

These are big numbers but don't get scared.
Let's look at $11 \times 15$.


Take the number you want to multiply by 11 (in this case 15) and imagine a space between the 2-digits.

$$
1 \_5
$$



Now add the two numbers together.

$$
1+5=6
$$



If the answer is a single-digit (1, 2, 3, etc.) put the sum in the space to get your answer.

165
So ... $11 \times 15=165$

## Go ahead and try a few.

$11 \times 12=$
The answer equals $1(1+2) 2$ or 132 .

$$
11 \times 26=
$$

The answer equals $2(2+6) 6$ or 286 .

$$
11 \times 81=
$$

The answer equals $8(8+1) 1$ or 891 .
You didn'† know you were so smart, did you.

Oh-oh ... What do you do if the numbers in the space add up to a two-digit number like 10 or 17 ?

Well it's a little tricky ... But not hard.
$11 \times 12=1(1+2) 20 \vee 132$
$11 \times 26=2(2+6) 60 \vee 286$
$11 \times 81=8(8+1) 10 \vee 891$

## Let's take a look at $11 \times 77$.

Imagine that space between the 7 and 7 .

$$
7 \_7
$$

Add the two numbers together $(7+7=14)$
Put the second number into the space (in this case it is 4)

$$
747
$$

Then add the number 1 to the first number.

$$
(7+1) 47 \ldots \text { or }
$$

Let's do a little more practice.


## The challenge: $11 \times 29=$ ?

$$
\begin{gathered}
2-9 \\
2(2+9) 9 \\
2(11) 9
\end{gathered}
$$

Keep the second space number in the space and add 1 to the first number.

## $(2+1) 19$

 319$$
\text { So ... } 11 \times 29=319
$$

Let's do another great big one just for fun.

$$
11 \times 98=?
$$

$$
\begin{gathered}
9-8 \\
9(9+8) 8 \\
9(17) 8
\end{gathered}
$$

Keep the second space number in the space and add 1 to the first number.
( $9+1$ )78
1078
So $. . .11 \times 98=1078$

## Wow! You catch on fast.

With a little practice, you will be able to multiply 2-digit numbers by 11 in your head.

Practice and challenge your friends (or maybe your teacher) to a 2-digit times 11 contest.

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My Nrww
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T. Albert, a story teller and author, cannot forget the excitement he saw in his children and grandchildren as they looked at, scribbled in, and later read their favorite book; allowing their "minds eye" to take them on a magical journey. Nor can he forget the pleasure in having a special time and reading to, and with them, sharing a wondrous time of fascination, learning, and a building of memories.

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