

Dear Parents/Guardians,

We will be having our Math Multiplication Unit test on _____. Students will be expected to

- Demonstrate their knowledge of basic multiplication facts up to 9×9
- Understand how to multiply with multiples of 10
- Solve multiplication problems with 2 digits by 1 digit
- Solve multiplication problems with 2 digits by 2 digits
- Solve word problems using multiplication

Please have them complete this study guide and return it by **Tuesday** for some Classroom Money.

Attached are some guides to help you practice.

Mrs. McIntyre & Mr. Ostapowich

1. Understand how to multiply with factors of 10.

annexing zeros

- a multiplication or division strategy that annexes (adds) extra zeros to assist in mental or written calculations.

EXAMPLES:

annexing zeros

Annexing zeros or adding extra zeros is a strategy used in multiplication and division.

Eg: If you need to do 30×60 , you can just do $3 \times 6 = 18$, but then add the 2 zeros you "ignored" on to the final answer.

$30 \times 60 = 1800$ < The product (answer) gets 2 zeros, because the factors had one zero each.

They will need to understand that we can make a digit larger by multiplying it by a multiple of 10 (10, 100, 1000, etc)

For example, if we want to make the product of 4×6 bigger, we need to increase one of our factors by a multiple of ten. We can change it to 4×60 which gives us a larger product, but is essentially doing the same math in our head.

Understanding multiplication with multiples of 10.

a) $7 \times 10 =$ _____

b) $8 \times 100 =$ _____

c) $70 \times 10 =$ _____

d) $40 \times 80 =$ _____

e) $20 \times 100 =$ _____

f) $2 \times 70 =$ _____

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 9 \\ \hline \end{array}$$

Lesson Eight - Multiplying 2 digit by 2 digit numbers

To multiply 2 digit by 2 digit numbers, you're going to start with the same steps as multiplying 2 digit by 1 digit numbers. However, once we've multiplied everything by the number in the ones place on the bottom, we're going to move over to the tens place on the bottom and multiply everything by that number as well.

Step 1:
Multiply the smallest place values first (the ones place).

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 5 \end{array}$$

Think: $5 \times 7 = 35$

If your answer is more than one digit, then carry the tens place.

Step 2:
Multiply the ones place value on the bottom with the tens place on the top.

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 135 \end{array}$$

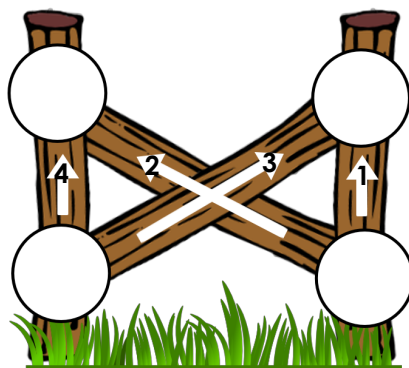
Think: $5 \times 2 = 10$

Check to see if there are any carried numbers to add.

$$10 + 3 = 13$$

Write the answer in front of the other digit you placed from the previous step.

Next, we're going to multiply the number in the tens place on the bottom with both of the numbers on top, starting with the ones place.



You can use the fence to help you remember the steps.

Step 3:

Add a 0 below the number in the ones place of our answer. Cross out any carried numbers we've used so you don't get confused in the next steps.

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 135 \\ 0 \end{array}$$

The 0 you have placed is because your answer will be a multiple of 10 (you are multiplying from the tens place)

Step 4:

Multiply the bottom tens place with the top ones place.

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 135 \\ 70 \end{array}$$

Think: $1 \times 7 = 7$

Put this number to the left of your 0.

Check to see if there are any carried numbers to add.

(In this case there aren't, but if there were, you'd just carry the number and put it beside the carried number you crossed out.)

Step 5:

Multiply the bottom tens place with the top tens place.

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 135 \\ 270 \end{array}$$

Think: $1 \times 2 = 2$

Put this number to the left of your last answer.

Step 6:

Now, add the two parts of your answer together.

$$\begin{array}{r} 3 \\ 27 \\ \times 15 \\ \hline 135 \\ +270 \\ \hline 405 \end{array}$$

Don't forget, you might still need to carry numbers!

Yay, you've found your answer!

2 digit by 1 digit multiplication

$$\begin{array}{r} 27 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 48 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 23 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 72 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 58 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 54 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 48 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 95 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 28 \\ \times 2 \\ \hline \end{array}$$

2 digit by 2 digit multiplication

1. Multiply.

a)
$$\begin{array}{r} 46 \\ \times 32 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 74 \\ \times 23 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 14 \\ \times 18 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 53 \\ \times 22 \\ \hline \end{array}$$

2. Find each product.

a)
$$\begin{array}{r} 64 \\ \times 23 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 94 \\ \times 12 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 82 \\ \times 26 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 34 \\ \times 33 \\ \hline \end{array}$$

1. On the Garcia's trip to New York they averaged 28 miles per gallon of gasoline. Their car has 17 gallons of gas. How many miles can they travel before having to fill up on gasoline?
2. If Alandra's heart beats 84 times per minute, then how many times does it beat in 45 minutes? In one hour? In one full day of 24 hours?
3. John has a cell phone payment of \$72 dollars per month. How much will this cost him in a year?
4. If Maria reads 23 pages a day for her book club and there are 99 words per page, then how many words does she read each day? If she finishes the book in 26 days, then how many words are in the book.