

The
MULTIPLICATION
STATION

SHELLEY GRAY

**STRATEGY
BASED**

**SELF
PACED**

**FACT
FLUENCY**

FOR MULTIPLICATION FACT MASTERY



STRATEGIC ● CONCEPTUAL ● PROGRESSIVE

Do your students struggle with the basic multiplication facts?



Do you want to implement a strategic approach to teaching multiplication, but you don't know where to start?

Do you wish you had a way to ensure that every student is being appropriately challenged and working to their full potential?

I taught a Grade 3-4 combined class during my first year as a teacher. When it came time to teach multiplication, I didn't know what I was going to do. Some of the students had already been doing multiplication for a year, while others didn't even know what it meant.

How was I going to appeal to all the students and ensure I was targeting each of their unique needs?

That's when The Multiplication Station was born (a much less sophisticated version back then). I developed a self-paced program where students could work through a series of multiplication activities at their own pace. I integrated principles of student engagement such as power, fun, and choice. **The result was amazing.** I had students begging me to keep doing multiplication.



The Multiplication Station has evolved since then. But it still includes those same basic principles that will **engage, motivate, and ensure success** for all students in your classroom.

How Does It Work?

It's quite simple. Students work through a series of multiplication activities for each level. They complete the activities, **self-check** using the prepared answer keys, and **keep track of their progress** using their personal tracker. At the end of each level, the student asks the teacher for a quick, informal oral quiz and they move to the next level.

The process is entirely student-run. After the first week of the program, you will notice your role switching from teacher to facilitator.

Why do students love this so much? It's easy! **They have power! They have freedom!** They are truly in control of their learning. **And THAT results in highly motivated students who love to learn.**



Add to that **an effective order of teaching the facts** that makes practical sense, and you will have students who feel smart, successful, and engaged. It's just that simple.

This is the best resource that I purchased for 3rd grade! **All of my students mastered their multiplication facts** using this method! Great resource!

This was exactly what I was looking for! I am so happy I came across this resource. I taught 3/4 and this was perfect for the other group to work on while I was teaching the opposite group. This went through all of the strategies I wanted to cover, in a sequence that made sense! **I saw INCREDIBLE growth in my student's multiplication skills this year!**

Conceptual Understanding

Conceptual understanding is KEY in The Multiplication Station. We want our students to **truly understand multiplication** rather than simply memorize the facts. Here are some samples of the activities that you can expect to find inside.



x 10 **Groups of 10** **2-C**

Solve each multiplication problem by thinking of **groups of 10**.

Example: 3×10 \Rightarrow Think: 3 groups of 10 \Rightarrow 10, 20, 30

$2 \times 10 =$ _____ $5 \times 10 =$ _____ $10 \times 3 =$ _____ $4 \times 10 =$ _____
 $10 \times 10 =$ _____ $7 \times 10 =$ _____
 $10 \times 9 =$ _____ $8 \times 10 =$ _____
 $1 \times 10 =$ _____ $10 \times 5 =$ _____
 $9 \times 10 =$ _____ $10 \times 8 =$ _____

What problems do these

Draw a picture to represent

©Shelley Gray

x 10 **10 Times a Number** **2-D**

Let's focus on what happens with place value when we multiply by 10.

When we multiply by 10, the digits move one place to the left. Look at the place value charts below:

H	T	O
		9

 $\times 10 =$

H	T	O
	9	0

In this example, we multiplied 9×10 . The 9 moves from the ones place to the tens place and a 0 is added to the ones place.

Try it!

$4 \times 10 =$	$6 \times 10 =$	$3 \times 10 =$																		
<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O			
H	T	O																		
H	T	O																		
H	T	O																		
$7 \times 10 =$	$2 \times 10 =$	$9 \times 10 =$																		
<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O			
H	T	O																		
H	T	O																		
H	T	O																		
$1 \times 10 =$	$5 \times 10 =$	$8 \times 10 =$																		
<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O				<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O			
H	T	O																		
H	T	O																		
H	T	O																		
$10 \times 10 =$																				
<table border="1"><tr><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td></tr></table>	H	T	O																	
H	T	O																		

Now that you know how to multiply by 10, could you solve problems like these?

$10 \times 12 =$ _____	$10 \times 75 =$ _____	$10 \times 15 =$ _____
$10 \times 90 =$ _____	$10 \times 14 =$ _____	$10 \times 87 =$ _____

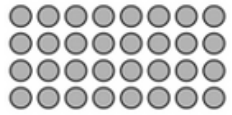
©Shelley Gray www.ShelleyGrayTeaching.com

x 4

Making Connections

6-C

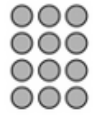
Let's use arrays and other pictures to make connections.



This array shows ___ groups of 4 or ___x___.
Add another row of 4.
Now the array shows ___ groups of 4 or ___x___.
Draw a picture:



Karen is holding 2 bags with 4 candies in each. This can be represented by ___x___.
She picks up another bag of 4 candies.
Now she has ___ bags of 4 candies. This can be represented by ___x___.



This array shows ___ groups of 4 or ___x___.
Double this array.
Now the array shows ___ groups of 4 or ___x___.

For each fact below, draw a picture and then write two related facts.

EXAMPLE

3x4



Related Facts:

6x4 is a related fact because it is the double of 3x4.
4x4 is a related fact because it is just one more group of 4.

10x4

Related Facts:

- ___x___ is a related fact because _____
- ___x___ is a related fact because _____

5x4

Related Facts:

- ___x___ is a related fact because _____
- ___x___ is a related fact because _____

8x4

Related Facts:

- ___x___ is a related fact because _____
- ___x___ is a related fact because _____

©Shelley Gray

www

x 4

Putting It All Together: x2, x5, x10, x1, x0, Squares, x4

6-E

Write a greater than (>), less than (<), or equal (=) symbol in each box.

2×9 <input type="text"/>	4×3	3×3 <input type="text"/>	8×2	10×6 <input type="text"/>	7×7
10×10 <input type="text"/>	5×5	6×6 <input type="text"/>	4×7	4×4 <input type="text"/>	5×3
7×0 <input type="text"/>	6×0	10×3 <input type="text"/>	5×6	1×8 <input type="text"/>	4×2
2×10 <input type="text"/>	4×5	5×9 <input type="text"/>	5×10		
2×8 <input type="text"/>	5×2	0×5 <input type="text"/>	1×1		

Fill in the missing factors:

$6 \times$ <input type="text"/>	$= 36$	$8 \times$ <input type="text"/>	$= 80$
$2 \times$ <input type="text"/>	$= 18$	$6 \times$ <input type="text"/>	$= 30$
$5 \times$ <input type="text"/>	$= 40$	$4 \times$ <input type="text"/>	$= 16$
$7 \times$ <input type="text"/>	$= 49$	$2 \times$ <input type="text"/>	$= 18$

Write four multiplication sentences that have an EVEN product.

©Shelley Gray

x 4

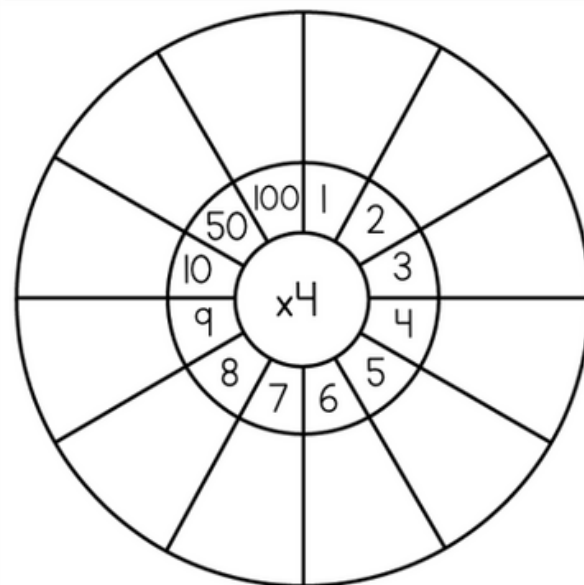
Practicing the 4's

Solve:

$4 \times 9 =$ _____	$5 \times 4 =$ _____	$4 \times 7 =$ _____
$4 \times 3 =$ _____	$2 \times 4 =$ _____	$4 \times 1 =$ _____
$4 \times 8 =$ _____	$4 \times 10 =$ _____	$4 \times 4 =$ _____
$0 \times 4 =$ _____	$4 \times 0 =$ _____	$7 \times 4 =$ _____
$3 \times 4 =$ _____	$1 \times 4 =$ _____	$9 \times 4 =$ _____
$4 \times 2 =$ _____	$6 \times 4 =$ _____	$4 \times 6 =$ _____

How would you explain the "double the double" strategy to someone who is learning it?

Complete the multiplication wheel:



©Shelley Gray

www.ShelleyGrayTeaching.com

CHALLENGE

Now that you understand how to double the double, figure out any numbers you can. Try it below with numbers of your choice.

x 3

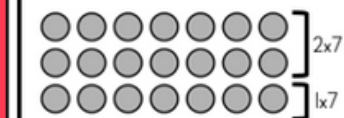
Making Connections

7-C

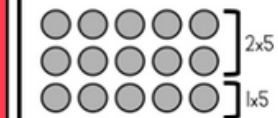
Let's make connections between x2 facts and x3 facts.

Explain how you could use the fact 2×9 to solve 3×9 .

Draw a diagram to show how you could use 2×8 to solve 3×8 .



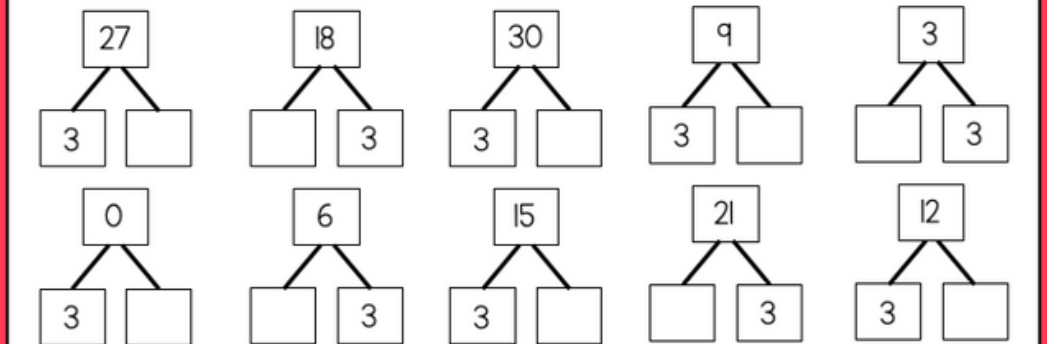
This diagram shows that:



This diagram shows that:

Draw a diagram to prove that 3×10 is the same as 2×10 plus one more group of 10.

Fill in the missing factors:



©Shelley Gray

www.ShelleyGrayTeaching.com



BIG Ideas

The **big ideas** that shape this program are:

- Conceptual understanding of multiplication is more effective for long term fact fluency than rote memorization.
- Although automaticity (knowing a fact within 3 seconds) is the end goal, we must teach strategies in order to get there.
- Strategies must build on each other so that students can make connections between what they already know and new learning.
- An effective order of teaching the facts will make multiplication easier to learn.
- Problem-solving is an important part of conceptualizing multiplication and should not be left for the end of the unit.
- When students experience success and know that they are capable, motivation is high.
- Students should be encouraged to think beyond 10x10. Once they possess effective strategies, these strategies can be used to solve bigger problems.

This set is AMAZING! I teach a 3rd grade special education math class. In my experience children have the most difficulty learning their multiplication facts which impacts them for a long time. **This system is incredible and my students even ask to do it during their break!** I wasn't sure they'd be able to handle the independent work they'd be required to do, but they work so hard! Thanks so much for this product!!!

Materials

The Multiplication Station is an **extensive resource**. Here is a quick run-down of what you can expect to find:

- There are twelve levels in all. Each level focuses on a different set of facts. For example, in Level One students will master the x2 facts. In Level Two they will work with the 10's facts.
- In each level, the strategies are slowly built upon and integrated with previous strategies and facts.
- The strategies that are included are not "tricks" that only work with certain facts. They are true mental math strategies that will enable students to solve any problem.
- Hands-on activities are included after every few levels. These are typically activities that incorporate subitizing or reflection.

This kit is wonderful. I have a group of 6th graders who are all over the place in their multiplication learning, many of which do not have basic fact fluency. This resource filled in so many missing strategies. And because multiplication in general is not a new concept for them, they were able to be quite independent as they moved through the levels and gained strategies. **I saw great improvement in fluency, efficiency and confidence. I wholeheartedly recommend this resource for anyone with students struggling with their multiplication math facts.**

More Samples So You Know EXACTLY What To Expect

x 9 **Multiplying By Nine** **8-B**

When we multiply by nine, we use what we know about multiplying by 10.

$9 \times 4 = \underline{\quad}$

- First, think of TEN groups of 4. What is 10×4 ? _____
- Now take away one group of 4. How many are left? _____

$9 \times 2 = \underline{\quad}$

- First, think of TEN groups of 2. What is 10×2 ? _____
- Now take away one group of 2. How many are left? _____

$9 \times 5 = \underline{\quad}$

- First, think of TEN groups of 5. What is 10×5 ? _____
- Now take away one group of 5. How many are left? _____

$9 \times 6 = \underline{\quad}$

- First, think of TEN groups of 6. What is 10×6 ? _____
- Now take away one group of 6. How many are left? _____

Write two multiplication sentences for each array.

$\begin{array}{c} \bullet \bullet \bullet \bullet \bullet \bullet \\ \bullet \bullet \bullet \bullet \bullet \bullet \\ \bullet \bullet \bullet \bullet \bullet \bullet \\ \bullet \bullet \bullet \bullet \bullet \bullet \end{array}$ _____ \times _____ = _____

$\begin{array}{c} \bullet \bullet \bullet \bullet \\ \bullet \bullet \bullet \bullet \end{array}$ _____ \times _____ = _____

$\begin{array}{c} \bullet \bullet \bullet \bullet \bullet \bullet \\ \bullet \bullet \bullet \bullet \bullet \bullet \end{array}$ _____ \times _____ = _____

©Shelley Gray

x 7 **What Do You Already Know?** **10-C**

Did you know that you already know a lot of the 7's facts? Write the facts you know in the chart.

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

Choose a 7's fact that you don't yet know (or one that feels difficult). Draw a picture to represent that fact.

_____ \times _____ = _____

Write two 7's facts in each box.

Two facts with a product between 13 and 30	Two facts with an odd product
_____ \times _____ = _____	_____ \times _____ = _____
_____ \times _____ = _____	_____ \times _____ = _____

©Shelley Gray

x 9 **The 9's Facts**

Figure it out!
Is the product of 9×3 the same as the product of 3×9 ? Prove it!

Solve these related problems:

$10 \times 3 = \underline{\quad}$	$10 \times 10 = \underline{\quad}$	$10 \times 7 = \underline{\quad}$	$10 \times 4 = \underline{\quad}$
$9 \times 3 = \underline{\quad}$	$9 \times 10 = \underline{\quad}$	$9 \times 7 = \underline{\quad}$	$9 \times 4 = \underline{\quad}$
$10 \times 1 = \underline{\quad}$	$10 \times 8 = \underline{\quad}$	$10 \times 5 = \underline{\quad}$	$10 \times 9 = \underline{\quad}$
$9 \times 1 = \underline{\quad}$	$9 \times 8 = \underline{\quad}$	$9 \times 5 = \underline{\quad}$	$9 \times 9 = \underline{\quad}$

Explain how you can use a 10's fact to solve a 9's fact:

Now that you know a strategy for multiplying by 9, could you solve a prob

$99 \times 9 = \underline{\quad}$

How could you solve it? _____

Reflect:

x 10 **Putting It All Together: x2, x10** **2-E**

1.										
								2.		3.
		3.				1.				
2.										
4.		4.						5.		
										6.
									5.	
							8.	7.		
										7.
6.										

ACROSS:

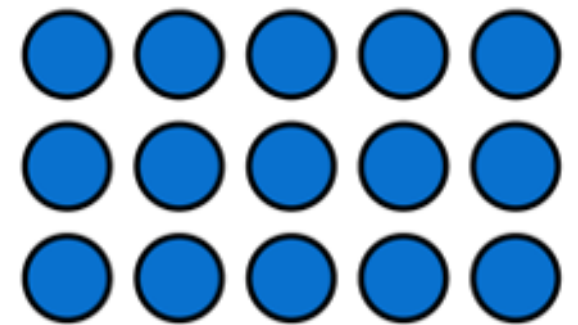
1. Nine times ten	6. Seven times ten
2. Ten times six	7. Two times five
3. Two times nine	8. Five times ten

DOWN:

1. Two times ten	6. Eight times two
2. Ten times four	7. Two times two
3. Six times two	

ARRAY

An array is an arrangement of objects in rows and columns.



This array shows 3 groups of 5 or 5 groups of 3 representing 3×5 .

PRODUCT

PRODUCT is the answer to a multiplication problem.

$$2 \times 3 = 6$$



This is the product.

FACTOR

FACTOR is the number being multiplied.

$$2 \times 3 = 6$$

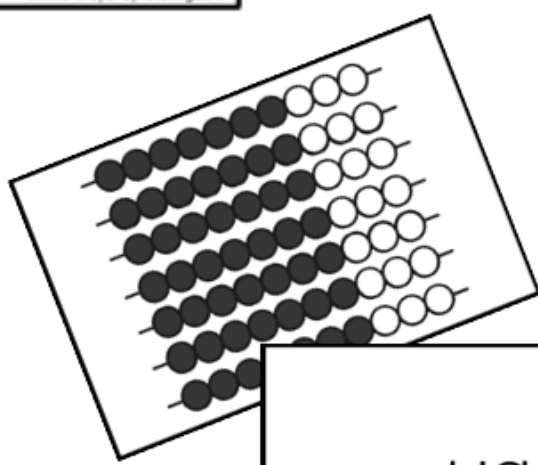


the FACTORS.

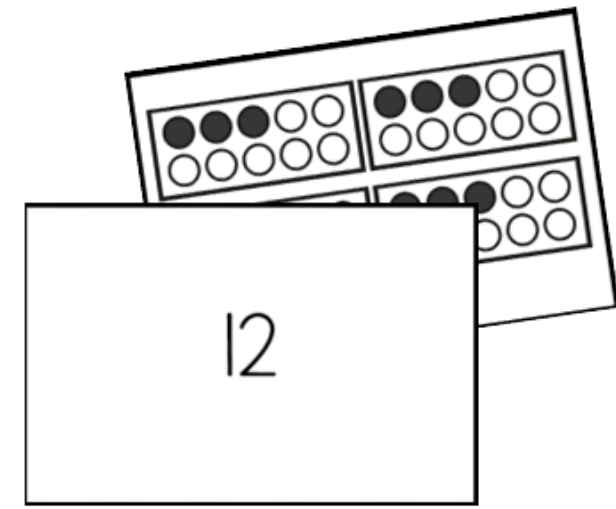
PLUS

- Classroom reference posters
- Hands on activities
- Parent Support Resources
- AND MORE!

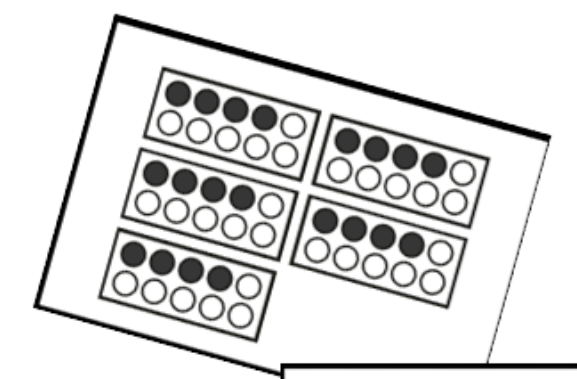
It is outstanding! **So many connections made** for students who really weren't enjoying math. I can't wait for next year!



49



12



20



Still not sure?

Be sure to read through the thousands of TpT reviews from teachers just like you to see if this program is the right fit.

