Grade 3	Lesson: 4-3 The Communitative Property	Reference to English

Math Standard(s): 3.OA.5 also: 3.OA.1, 3.OA.3 **Domain: Operations and Algebraic Thinking**

Content objective(s):	**Language Objective(s):**
Students will write multiplication sentences for arrays, use arrays to find products, and use the Commutative Property of Multiplication.	Students will say multiplication sentences to their neighbor. *I can say multiplication sentences to my neighbor.*
Essential Understanding: Two numbers can be multiplied in any order and the product remains the same.	**Required Academic Vocabulary for Word Wall:** **Listen:** commutative property **Read:** **Write:** **Speak:** **Sentence Frame:**
Materials: • **Two-color counters (Teaching Tool 17)** • **Whiteboards, erasers, markers** • **Guided Practice and Independent Practice 104 and 105 (textbook)**	**Additional Lesson Vocabulary:** Shells, array, multiplication

Lesson: **Instructional Time: 35 minutes**

Opening: (5 minutes)

- Pass out whiteboards, erasers and markers.

T: "You have already learned how to use arrays to model multiplication facts. On your whiteboard please draw an array with 3 rows and 3 objects in each row."

S: *will draw an array.*

T: "Please show me your arrays."

S: *will show the teacher their arrays.*

T: "Please write down the multiplication sentence that goes with your array and read it to your neighbor."

- While the students are writing the multiplication sentence and telling their neighbor, invite one student to come up and draw their array on the board with the multiplication sentence.

T: "Help me read the multiplication sentence that goes with your array."

S: *will read the multiplication sentence with their teacher.*

T: Today, you will use arrays to model and learn a property of multiplication that will help you multiply more easily."

- Draw a diagram of the arrangement of the desks in the room on the whiteboard.

T: "If the desks in this room were rearranged, would the number of desks change? Tell your neighbor and explain why."

S: *will turn to their neighbor and say, "no, because no desks are taken away or added."*

T: "The number of desks will not change if what change the arrangement."

- If students still don't understand, draw a different arrangement of the desks on the board and show that the number of desks are the same, but the arrangement is different.

Introduction to New Material (Direct Instruction): (8 minutes)

T: "Cathy has arranged some shells in two different arrays. One array has 2 rows with 6 shells in each row. Please draw that array of shells on your white board."

S: *will draw an array that has 2 rows and 6 shells in each row.*

T: "Please show me your boards." (Please make sure the student wrote the array correctly)

T: "**The other array has 6 rows with 2 shells in each row. Please draw the 2nd array under the first."**

S: *will draw the second array under the first.*

T: "Please show me your boards." (Please check the student work to make sure the 2nd array was drawn correctly)

T: "Do both arrays have the same number of shells?"

S: *will say, "yes"*

T: "Tell you neighbor how many shells are in each array and write it on your board."

S: *will turn to their neighbor and say, "there are 12 shells." And will write 12 on their boards.*

T: "Show me your boards. Yes, there are 12 shells in each array. Now I would like you to write the multiplication sentence that goes with each array."

S: *will write each of the multiplication sentences under their arrays.*

T: "Please show me your boards."

S: *will show the teacher their boards.*

T: "Good job. I have also draw the arrays on the board. Our first array has 2 rows and 6 shells in each row. The multiplication

sentence for this array is 2 times 6 (write 2X6 on the board)**. Now let's look at the 2nd array. This one has 6 rows and 2 shells in each row. The multiplication sentence for this array is 6 times 2** (write 6X2 on the board)**."**
T: "Look at the two arrays and multiplication sentences. Although they look different, they have the same amount of shells. So, 6X2=2X6. This is an example of COMMUNITATIVE PROPERTY OF MULTIPLICATION. You can multiply numbers in any order and the product is the same as long as the numbers are the same."

Guided Practice: (8 minutes)
Use the modeling cycle:
Teacher Does:
T: "Now I want you to work with your neighbor and do a similar problem."
- Draw 2 arrays on the board using the same numbers. 5X3 and 3X5.

1 Students Does with Teacher:
T: "I need student to come up. I have draw two arrays on the board. I want you to write the multiplication sentence for one of them and I will write it for the other one."
S: *will write the multiplication sentence that goes with the first array.*
- Teacher will write the multiplication sentence that goes with the second array.

T: "Awesome, please read the multiplication sentence for me."
S: *will say, "five times three equals 15."*
T: "Yes, five times three equals 15 and three times five equals 15. Please sit down."

2 Students Do:
- Draw two more arrays on the board. 2X4 and 4X2.

T: "Now I want two for more students to come up and demonstrate the activity."
- Teacher will choose two more students.

S: *will each write a multiplication sentence on the board under the array and say the sentence to each other.*

All Students Do:
T: "Now it is your turn to do one more problem with your neighbor. I will draw the arrays on the board and you will write and say the multiplication sentence to your neighbor. I want to see your boards when your done."
- Teacher will draw 2 arrays on the board. 5X4 and 4X5.

S: *will work in partners to solve the problems.*
T: "10,9,8,7,6,5,4,3,2,1. Time is up. Please put your whiteboards away and return to your desk."

Independent Practice: (6 minutes)
T: "Now I want you to pull out your books and work on 5 more problems. Please do problems 2, 3, 9, 10, and 12."
S: *will open their books and work on the problems on page 104 and 105.*

Closing: (3 minutes)
- Draw two arrays on the board. 3X7 and 7X3

T: "Good job today. I have one last question. How do the arrays on the board show the Commutative Property of Multiplication?"
S: *will answer* (answer will vary).

Assessment:

Guided Practice and Independent Practice