

Title - The Commutative Property

Subject - Math, Art

Grade Level - 3

Tennessee State Standards:

Math 0306.3.3

Materials

- Cans
- Flashcards
- Blank bulletin board
- Small bags of buttons
- Grid paper
- Construction paper
- Crayons
- Small stickers

Anticipatory Set

I will begin with an array of cans (4 x 6) stacked on the table at the front of the room. I will ask the students if they have ever seen something similar to this. Where? I will explain that this is called an 'array': an arrangement of items in a number of equal-sized rows. I will ask the students where else they have seen arrays of items. I will challenge the students to identify arrays that are in the classroom (I will make sure that there are a number of possibilities before beginning the lesson). Finally, I will point out a blank bulletin board and tell the students that they will be making their own bulletin board with the work they do today.

Guided Practice

1. I will call the students' attention to the array of cans at the front of the room, again. I will ask them how many rows across there are of the cans. How many cans in each row? I will write "4 rows of 6 cans" on the board. How many cans in all? I will write " $= 24$ " next to the existing sentence. Is there another way that I can write this? I will write " $4 \times 6 = 24$."
2. I will have the students get into pairs and I will pass out bags of small buttons to each group. I will tell the class that we are going to practice making arrays with the buttons.
3. I will use a set of flashcards (making sure that the "0" facts are taken out) to pick multiplication problems at random. I will write the problem in large print on the board, and I will ask the students how I could make an array to show this problem. I will use buttons on an overhead to show the students.
4. I will continue to pick cards at random, having the pairs of students make arrays with their buttons. I will call on volunteers to demonstrate what they have done at their desks, using the buttons on the overhead.
5. I will ask if any pair of students has done the problems in a different way. In a perfect situation, the students will have discovered the Commutative Property on their own. If not, I will turn the page on the overhead so that it is sideways. I will ask if this is the same problem. Why or why not? We will discuss how this problem is written and why it is the same.
6. We will repeat this activity, but each group needs to show the two arrays that yield the same answer. Again, students will come up to the overhead to show their work.
7. When I feel that the students have a handle on the subject, I will collect the buttons and separate the pairs of students.
8. Next, I will use an overhead to show how arrays can be drawn on a grid. We will practice doing this together, and I will be sure to point out the fact that a 2 x 3 array yields covers the same space as a 3 x 2 array. I will also be sure to label each array appropriately.

Individual Practice

1. I will pass out grid paper to each student. I will mix up the flashcards, hold them facedown, and have each child pick one. I will give each student the corresponding card as well (i.e. if a student picks 8×4 , then I will give him/her 4×8).
2. I will tell the children that they are to outline and color each array on the grid paper. Then they should cut out each array.
3. While the students are working on this, I will pass out one piece of construction paper to each student. When they are finished, they will need to glue each array onto the construction paper. I will show the students an example that I have already made.
4. As I walk around I will check to see if any students have labeled their arrays, and I will point this out to the other students. If no one has done so, then I will explain to the students why it is important that we do this.
5. Last, I will hand out small stickers that the students can place in each small box of their arrays.

Closure

When all of the students have finished making and labeling their arrays, I will point to the bulletin board and explain that this is where we will be hanging up our arrays. I will put up the title, "Array for Multiplication!" (Kind of like 'hooray!'). Then, I will have the students come up one by one. Each student should show his/her array to the class, tell us what multiplication sentences that each one illustrates, and then I will hang it up on the board.

Assessment

- I will observe the students to see that they are actively participating in the guided instruction.
- I will check to see that they have completed the array projects with 100% accuracy. If I see that a child is not doing his/hers correctly, I will have him/her work with an early finisher, who can help the student to understand the concept.