Video Link

Order Doesn't Matter - Part A

Summary

In Zaplify, the order of the factors doesn't matter and students can focus on how the product of two numbers is the same, whether they are made with 3 horizontal lines and 2 vertical ones or the other way around. In this task, students explore the commutative property of multiplication by creating the same product in two different ways and by comparing the shapes of the products.

Tasks

1. Say, *One partner will place two fingers along the left side and three on the bottom to produce six. The other partner will make a sketch of what Zaplify is showing.* [Alternatively, students could take a screen shot.] *Now, place three fingers along the left side and two fingers on the bottom.*
2. Make the product 6 by pressing six fingers along the side and one finger along the bottom and project this on the board. Ask students to compare the three shapes.

What to Watch For

- Some students may only focus on the products. If this happens, prompt students to compare the general shape of the lines or the number of horizontal lines to the number of vertical lines sketches.

Questions to Ask

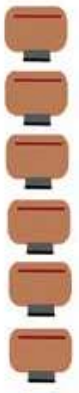
- *What is the new product? How does it compare to the sketch that you made?*
- *How many horizontal lines are in this sketch* (point to their first sketch) *and how many vertical lines are in this sketch* (point to their second sketch)*?*
- *Which sketch seems different than the other two? Why is it different than the others?*
- *Do you see any connection between the first and the second sketch?*
- *What should I do to the second sketch so that it would look exactly like the first sketch?* **This question would prompt students to rotate their sketches.**
- *When we rotate the sketch, we change the orientation of the lines. Can you come up with a multiplication rule about the order of the factors?*

Extending Student Learning

Early finishers can be asked to make another product in two different ways. When students are asked such open-ended questions, some of them may not create the products based on the commutativity property. For example, they can produce 12 either as 3 x 4 or as 2 x 6. If this happens, direct them back to their drawings and ask them to compare how they produced 6 in two different ways and how they produced 12 in two different ways. Prompt them to come up with a rule to make their drawings the same. This might prompt them to rotate one of their sketches.

Assessment

The desks in Selin's classroom are organised in rows like the picture below. There are four rows of desks organised this way. One day Selin's class had to move to another room. However, the new room was smaller and could only fit four desks in each row. How many rows of desks will be in the new room? Draw how you can model this situation in Zaplify.



TEACHER TIP

We want students to understand that the product of two factors will be the same, regardless of their horizontal or vertical placement.