



[Video Link](#)



TEACHER TIP

Shifting between the two photos on the screen might be difficult for students to compare the shapes. If the iPad is a newer version, you can display two photos at the same time on the screen. Otherwise, invite two students to place their iPads side-by-side to compare the images.

Order Doesn't Matter – Part B

Summary

Students continue to explore the idea of commutativity. Mathematical concepts frequently have multiple conceptualisations, each of which can be more suited to particular contexts—this is an important part of mathematics that may help students move away from the assumption that there is only one right answer or one right way of solving a problem.

Task

1. Explain to students that Claudia used ten fingers to produce twenty-one. Challenge them to show two different ways she could have done this and to take screenshots of their findings.
2. Have students make the product 24 by pressing 6 fingers along the left side and 4 fingers along the bottom. Then ask them find other ways to make twenty-four.

What to Watch For

- Students are given a restriction in this task (they must use exactly ten fingers). This restriction limits the answer to two solutions (3×7 and 7×3). Otherwise, students might come up with 21×1 and 3×7 as two ways to make 21 and this would prevent them from exploring commutativity.
- Some students may have difficulty getting started with this task. If that happens, ask them how they would produce 25. Once they have created 5×5 , prompt them to change the product by changing the location of their fingers until they make the product 21.

Questions to Ask

- *Did you get this right away? If not, what did you do first? How did you know that was incorrect?*
- *How did you decide which factors to use to make the product twenty-one? How did it help you to figure out another way to make the product twenty-one?*
- *How does the shape of the first product compare to the shape of the second product?*
- *How many horizontal lines are in the first photo and how many vertical lines are in the second photo?*

Extending Student Learning

Early finishers can be asked to find as many ways as they can to make 24, draw sketches of each and identify which sketches look the same.