Skip Counting - Part A

Summary

Students focus on how changing the number of lines affects the composition of all the perpendicular lines. This is a more transformational approach to multiplication than repeated addition and focuses on how the intersection points are spreading across every perpendicular line in both directions.

Task

1. Project Zaplify onto a screen for the class to view. Create two horizontal lines and model skip counting by two by placing one finger at a time on the screen to create vertical lines. Point out to students that the product is changing. Students will likely recognise this as skip counting. Challenge students to skip count by five by changing the number of horizontal lines.
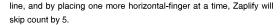

2. Starting with a product of twenty-four, ask students to figure out how to skip count backwards by only changing the horizontal lines so that they end up with a product of twelve. This can be done in several ways. Student can skip count backwards by:

Skip Counting by:	Start With:		Skip Counting Pattern
	Horizontal Lines	Vertical Lines	
12	2	12	24-12
6	4	6	24-18-12
4	6	4	24-20-16-12
3	8	3	24-21-18-15-12
2	12	2	24-22-20-18-16-14-12

What to Watch For

- Skip counting by 5 by changing the number of horizontal lines will require students to place 5 fingers on the bottom of the screen and 1 finger on the side of the screen. This creates 5 points on the horizontal line, and by placing one more horizontal-finger at a time, Zaplify will skip count by 5.

- If students persist with skip counting by changing the vertical lines, ask them to make 5 in a different way. This may prompt them to start by making five vertical lines and one horizontal line.

- You may also want to ask students to record the successive products that they discover in their notebooks. They could also draw pictures to show what each product looks like in Zaplify.

Questions to Ask

- How can you skip count up to 25 by five-ples?
- How will the product will change when you lift (or remove) a finger?
- How could you skip count backwards by 5?
- How did you figure out how to make the product twenty-four? Which factors did you use? 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 lines to use for counting backwards?
- What is the name of that m-ple that you were lifting?

Extending Student Learning

- As you walk around and see that some students have succeeded in skip counting by fives by changing the number of horizontal lines, you can invite them to try skip counting by 3, 7 or 10. You might also invite the students to skip count by a larger number that they are not as familiar with, and to record the products in their notebooks

- Challenge early finishers to make a product of fifteen and skip count backwards by three by only changing the number of horizontal lines. Students will first need to decide how to make the product - 3 vertical lines, 5 horizontal lines, not the other way around.

Assessment

Project the image to the right and ask students to complete the following:

1. Sanna used Zaplify to skip count to twelve. Describe each of the steps that she did if she was skip counting by changing the horizontal lines. If students need a hint, Sanna started with just four vertical lines.

2. Imagine that Sanna placed another finger on the bottom of the screen. Draw what we would see on her screen.

WHAT TO WATCH FOR

Ensure that students are skip counting by adding horizontal lines. We are intentionally holding the number of vertical lines constant and seeing what happens by adding more horizontal lines.