



Make it Linear

Grade 3

Number Patterns

Skip Counting and Addition

3 levels

Probing Questions

- What do you notice about the numbers?
- How does each stack of blocks change?
- How do you know how tall the missing tower will be?

Helping Struggling Students

Use blocks to represent the numbers and stack them next to each other. Facilitate the student to help him/her to see the consistent growth between the numbers.

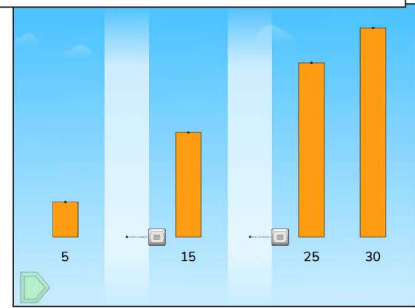
The Bigger Picture

Showing skip counting geometrically sets the foundation for graphing linear patterns in algebra.

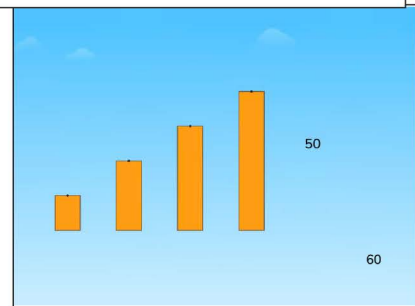
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Levels 2 and 3 sometimes ask for two blanks.



The animation changes numerals to a bar model to show linearity.



Number Patterns - 1



Hundreds Pit

Grade 3

Number Patterns

Skip Counting and Addition

5 levels

Probing Questions

- How do you know which number to choose next?
- What pattern do you notice in the numbers?

Classroom Connection

Let students replicate skip counting patterns on a blank 100s chart, using chips or coloring in the squares. Discuss the patterns shown. Repeat the activity filling in the multiples of two different numbers (e.g. 5 and 2) What patterns do you see?

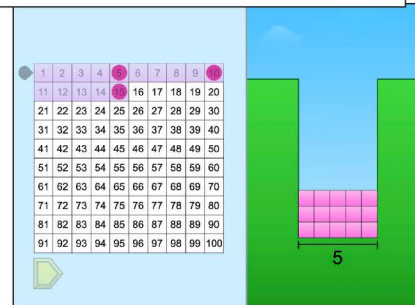
Pause the Animation

Stopping the animation as JiJi starts across the screen allows students to focus on the visual patterns created by the multiples. Stop to discuss the patterns. Ask students to extend the patterns.

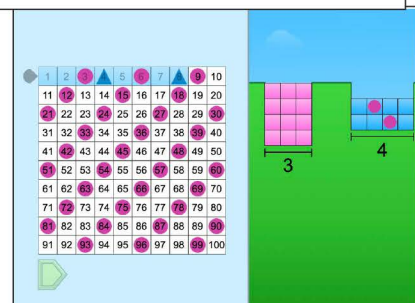
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Levels 1-3 show multiples of 2, 3, 4, 5, or 10.



Levels 4 and 5 show the multiples of two different numbers.



Number Patterns - 2



Multiplication Table Parts

Grade 3

Number Patterns

Skip Counting and Addition

3 levels

Probing Questions

- How do you know where to put the square(s)?
- Will that work for both squares?
- Where else could the square be?

Helping Struggling Students

You may be tempted to give out multiplication charts to assist. Instead have students find different factors of the given number and find where those will line up on the chart. They can then test out the different possibilities.

What's Important Here?

This game requires students to look at multiple facts that have the same product. Level 1 helps students find all of the possible combinations and sets the stage for the work in levels 2 and 3.

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Level 1 requires all of the combinations to be shown.

×	1	2	3	4	5	6	7	8	9	10
1						6				
2										
3										
4										
5										
6										
7										
8										
9										
10										

6 = 2 × 3

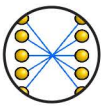
In Levels 2 and 3 students must place two or more squares simultaneously.

×	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

16

56

Number Patterns - 3



Multiplication Pattern Strings

Grade 3

Number Patterns

Skip Counting and Addition

4 levels

Probing Questions

- What do you need to do first?
- What patterns do you see?
- Can you predict where the next number will be using the pattern?

Classroom Connection

Students may enjoy creating these patterns on paper. Discuss the patterns they create. Compare the different patterns to find similarities. Do any of the patterns help students create shortcuts for finding products?

The Bigger Picture

To help students generalize, ask them to extend these patterns using grid paper.

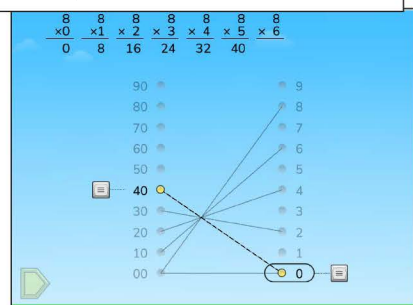
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Students must first select the number of tens. Remember to start at 0!



Look for patterns: ×8 can be add 10 subtract 2.



Number Patterns - 4