

3-D Patterns

Goal

Create a 3-D pattern and make predictions about its growth.

You will need linking cubes.

Look at the stack of boxes in Lesson 3 Question 3.

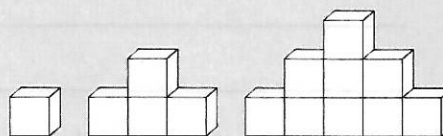
1. Make the first three stacks in the table using linking cubes. Determine how each stack is made from the one before. Then complete the table to show how many layers of boxes there will be if there are 210 boxes in total.

Number of layers	Number of new boxes	Total number of boxes
1	1	1
2	2	$2 + 1 = 3$
3	3	$3 + 3 = 6$
4		

At-Home Help

A 3-D pattern has a length, a width, and a height.

For example, these cubes form a 3-D pattern.



Organizing numbers in a table helps you see patterns.

For example:

Number of layers	Number of new boxes	Total number of boxes
1	1	1
2	3	$3 + 1 = 4$
3	5	$5 + 4 = 9$
4	7	$7 + 9 = 16$

total number of boxes
 = number of new boxes
 + total number of boxes
 in the line above

2. Explain what pattern you used to calculate your answer.
