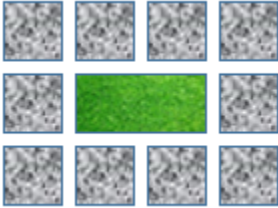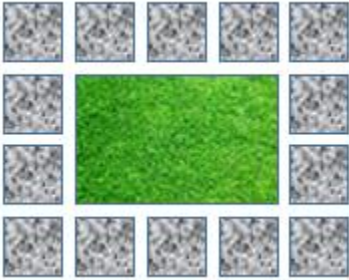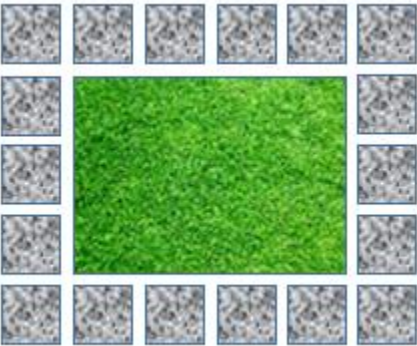Name_____Date_____

How Many Stones Will I Need?

The illustration below shows how a gardening company defines the sizes of its gardens as well as how it puts stepping stones around the outside of each.

size	pattern
1	
2	
3	

1.) Fill the table below with values for gardens of given sizes. Then, generalize by writing an algebraic expression that could be used to calculate the number of stones needed for a garden of size n.

Garden Size	# of Stones Wide	# of Stones Long	# of Stones Needed
1			
2			
3			
4			
5			
10			
n			

2.) Explain how the three algebraic expressions that you created in the bottom row relate to the gardens.

3.) Are your algebraic expressions in their simplest form? If not, simplify them in the space below.

4.) Use your simplified expression for the number of stones needed to evaluate and determine how many stones are required for a garden of size 100. Does the result make sense? Explain your reasoning.

Virginia Department of Education   2019

Virginia Department of Education   2019