Toothpick Squares Problem

(adapted from *Fostering Algebraic Thinking* by Mark Driscoll)

Figure 1

Figure 2

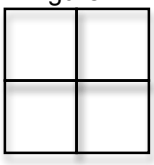
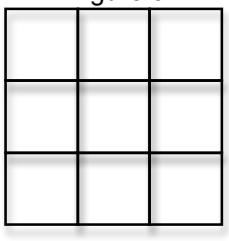


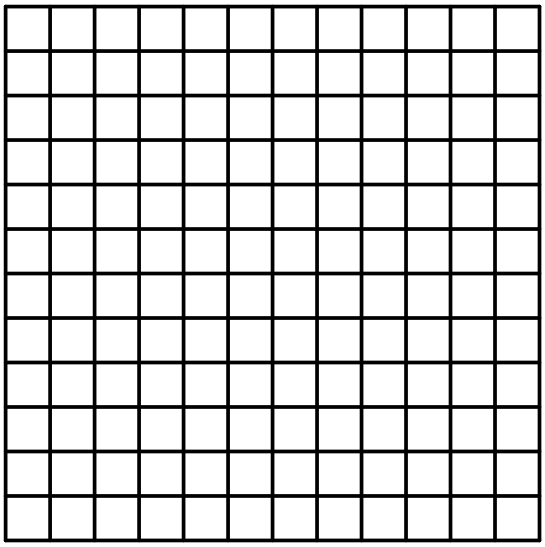
Figure 3

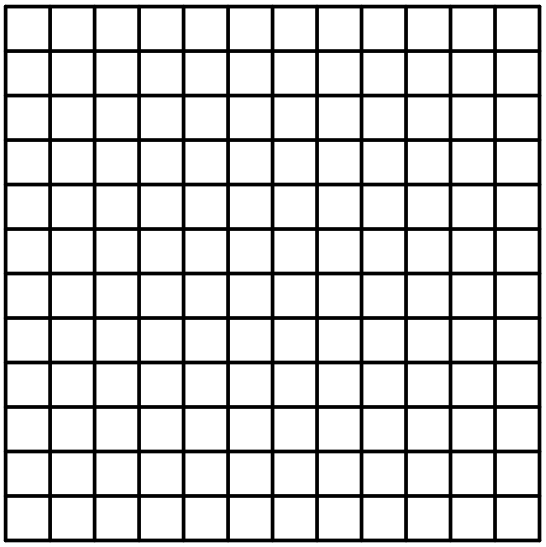


Assume that each side of the square in Figure 1 is one toothpick. Use the tables and graphs below and compare the results.

Figure #	# of Toothpicks in Perimeter		Figure #	Total # of Toothpicks
1			1	
2			2	
3			3	
4			4	
5			5	

Graph each of the tables above on the grids below.





What differences do you notice with the number of toothpicks in the perimeter and the total number of toothpicks? Make connections between the table and the graph. (Write your explanations on the back.)