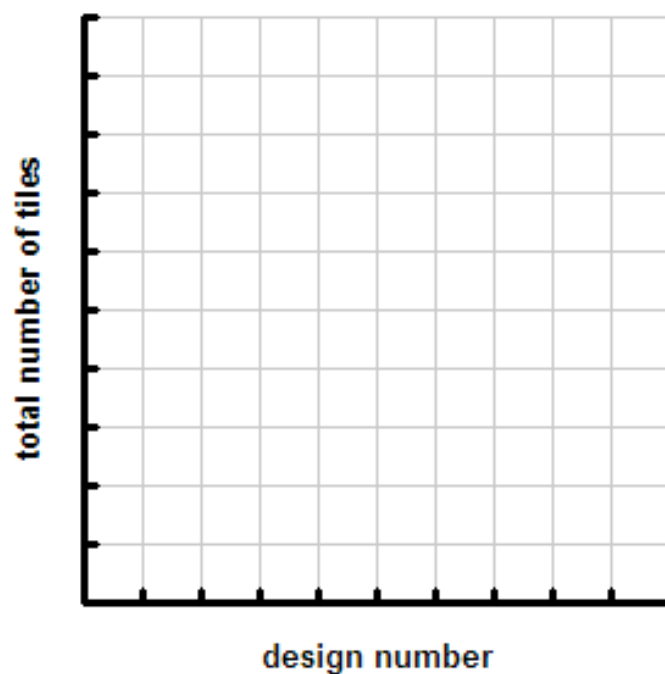


**TASK 1.1.6: FROM FUNCTIONS TO GRAPHS****Solutions**

1. Given the rule  $2x + 6$ , use tiles to generate a sequence of figures that fits the function. Fill in the table, sketch the figures, and plot the graph.

Design number	Visual	Written Description	Process Column	Total Number of Tiles
1			$2(1) + 6$	8
2			$2(2) + 6$	10
3			$2(3) + 6$	12
4			$2(4) + 6$	14
n			$2n + 6$	



*Algebra I: Strand 1. Foundations of Functions; Topic 1. Identifying Patterns; Task 1.1.6*

*Students' patterns may vary. Trainers need to ensure that students have correctly matched the starting point and the rate of change for each algebraic expression. Trainers need to be sure students are interpreting the differences in rate of change and starting point correctly and noting the differences in the equations.*

2. What is the domain and range for your pattern?

*Solutions will vary.*

3. Below are two functions. The  $t$  stands for the total number of tiles and the  $n$  stands for the design number. Using tiles create the first three figures for each function. Explain the differences in the patterns and how you determined the differences.

Sketch the graphs.

$$t = 2n + 3$$

$$t = 4n + 3$$

*Solutions will vary.*

Compare the domain and range for each situation.

4. Below are two functions. The  $t$  stands for the total number of tiles and the  $n$  stands for the design number. Using tiles create the first three figures for each function. Explain the differences in the patterns and how you determined the differences. Sketch the graphs.

$$t = 2n + 3$$

$$t = 2n + 1$$

*Solutions will vary.*

Compare the domain and range for each situation.

### **Math notes**

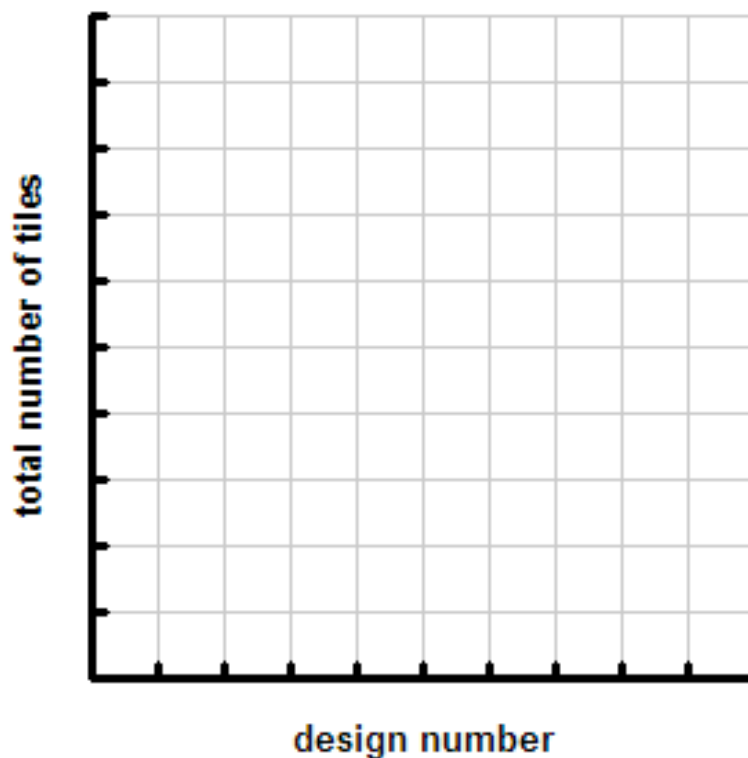
This is another step in the **doing and undoing** process. Typically students are asked to look at a pattern and derive the algebraic expression and scatter plot. The last exercise asked students to analyze a scatter plot and produce the pattern. This exercise requires the student to interpret the information from the algebraic expression and create a sequence of figures that fit a pattern.

This requires the student to recognize the starting point and rate of change from the expression.

**TASK 1.1.6: FROM FUNCTIONS TO GRAPHS**

1. Given the rule  $2x + 6$ , use tiles to generate a sequence of figures that fits the function. Fill in the table, sketch the figures, and plot the graph.

Design number	Visual	Written Description	Process Column	Total Number of Tiles
1				
2				
3				
4				
n				



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$$t = 2n + 3$$

$$t = 2n + 1$$

Compare the domain and range for each situation.