

## Tile Pattern Team Challenge

Your team's task is to create a poster showing every way you can represent the pattern below and highlighting all of the connections between the representations that you can find. For this activity, finding and showing the connections are the most important parts. Clearly presenting the connections between representations on your poster will help you convince your classmates that your description of the pattern makes sense.

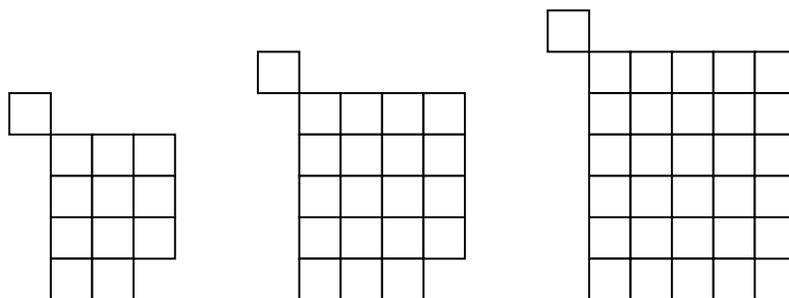


Figure 1

Figure 2

Figure 3

### Pattern Analysis:

- Extend the pattern: Draw Figures 0, 4, and 5. Then describe Figure 100. Give as much information as you can. What will it look like? How will the tiles be arranged? How many tiles will it have?
- Generalize the pattern by writing a rule that will give the number of tiles in any figure in the pattern. Show how you got your answer.
- Find the number of tiles in each figure. Record your data in a table and a graph.
- Demonstrate how the pattern grows using color, arrows, labels, and other math tools to help you show and explain. Show growth in each representation.
- What connections do you see between the different representations (graph, figures, and  $x \rightarrow y$  table)? How can you show these connections?

### Presenting the Connections:

As a team, organize your work into a large poster that clearly shows each representation of your pattern, as well as a description of Figure 100. When your team presents your poster to the class, you will need to support each statement with a reason from your observations. Each team member must explain something mathematical as part of your presentation.

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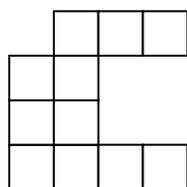


Figure 1

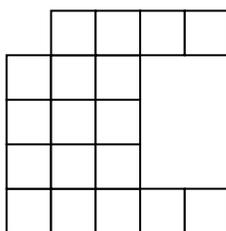


Figure 2

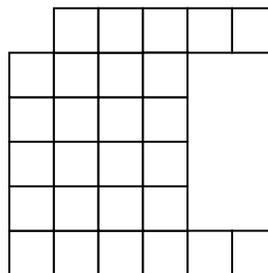


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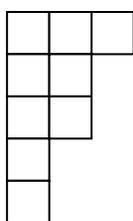


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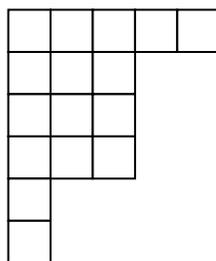


Figure 2

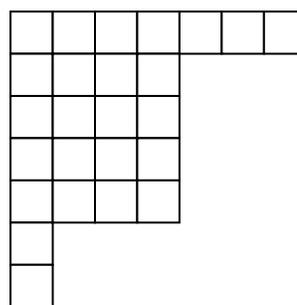


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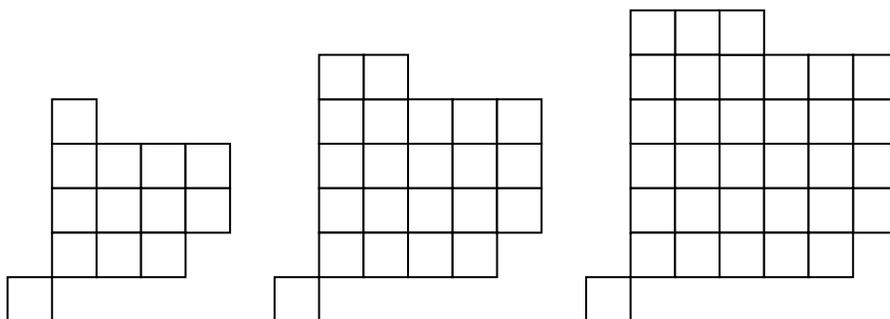


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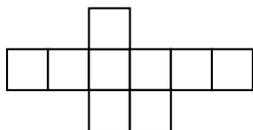


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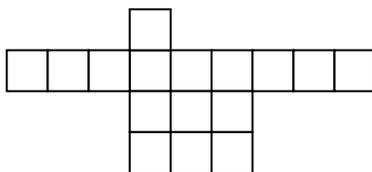


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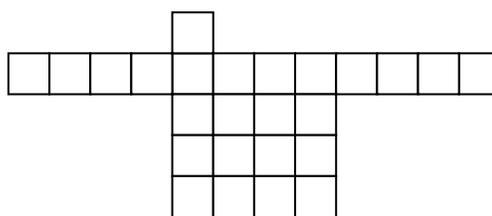


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