**Telling the Tale**

**Grade 6 (SOL 6.12)**

|  | Structure 1 | Structure 2 | Structure 3 |
| --- | --- | --- | --- |
| Structure 0 | Structure 1 | Structure 2 | Structure 3 |

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| What do you notice? | What do you wonder? |
| Create a story that might have produced the series of structures presented above. | |

|  | structure 1 | structure 2 | Structure 3 | Jack Prism works in a warehouse at Amazon Composite. His job is to prepare boxes for transport. When he arrives at work, there are no boxes ready to transport. As the day progresses, he arranges the boxes as shown.  Consider the number of boxes in each structure. |
| --- | --- | --- | --- | --- |
| Structure 0 | Structure 1 | Structure 2 | Structure 3 |

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| Complete the table below:   | Structure # (*x*) | Number of Boxes (*y*) | | --- | --- | | 0 |  | | 1 |  | | 2 |  | | 3 |  | |  |  | |  |  | |  |  | |  |  | |  |  | | Create a graph to represent the relationship between the structure number (*x*) and number of boxes (*y*):  ***y***  Quadrant 1 of coordinate plane  ***x*** |
| If this pattern were to continue, determine the number of boxes in:  Structure 4: \_\_\_\_\_\_ boxes  Structure 6: \_\_\_\_\_\_ boxes  Structure 12: \_\_\_\_\_\_ boxes | If this pattern were to continue, determine the structure number of the number of boxes is:  20 boxes: Structure \_\_\_\_\_\_  32 boxes: Structure \_\_\_\_\_\_  100 boxes: Structure \_\_\_\_\_\_ |
| In this relationship, how much does the number of boxes change each time the structure number increases by 1? | Is the relationship between the number of boxes and the structure number a proportional relationship? Justify your answer. |
| Create a double number line to represent this relationship. | |