Standard:

TSWBAT…

- Identify, describe, extend and create geometric and numeric patterns.
- Analyze a geometric pattern and express the results numerically.
- Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graphs.

Title: Working Backward With Pattern Tiles

Task: Teacher will use hands-on manipulatives and worksheets to show how patterns are formed. Once the concept is grasped students will create their own patterns with graphs to show how they arrived at their particular design.

Directions for students:

Today you will be investigating number patterns using tiles. You will begin using student worksheet # 1. There is a pattern started on this sheet. Your job is to continue the pattern. After you have continued the pattern up to the 9th step, you will need to complete the two graphs on this page. The graphs are line plots so be careful when plotting your coordinates. Also, pay careful attention to the type of data that the graph is asking you to plot. One graph asks you to plot the step number and the number of new tiles. The other graph asks you to plot the step number and total number of tiles.

Continue through the entire packet in the same fashion. Feel free to use the pattern blocks or Unifix cubes to help you. When you are finished, be prepared to share the pattern that you developed at the end of the packet. You will be the teacher so have questions ready to guide your group into decoding your pattern.
Criteria:

- Correctly identify patterns and be able to effectively continue the pattern up to nine steps.
- Correctly plot data on both types of line graphs.
- Be able to accurately identify the type of pattern and its process of growth.
- Create own pattern and quiz classmates to assist them in identifying and continuing the pattern.

Rubric:

5 points- Patterns are correctly identified and continued to nine or more steps.
3 points- Patterns are identified and continued from 6-8 steps.
1 point- Patterns are minimally identified and continued only to 1-5 steps.

5 points- Data is correctly plotted on both types of graphs.
3 points- Data is correctly or incorrectly plotted on one and/or both types of graphs.
1 point- Data is incorrectly plotted on one or both types of graphs.

5 points- Pattern type and the process of growth is accurately identified.
3 points- Pattern type and/or the process of growth is not clearly identified.
1 point- Pattern type and/or the process of growth is not identified at all.

10 points- Unique pattern and quiz is fully completed for fellow classmates.
7 points- Unique pattern and quiz is not fully completed for fellow classmates.
4 points- Unique pattern and quiz is not completed for fellow classmates.