Paper Pool Project

NAME _____

Part 1: Investigate Two Questions

The two questions below ask you to find out what happens to a ball as it travels on Paper Pool tables. Investigate each question.

1. In what corner will the ball stop?
2. How many hits will have occurred by the time the ball stops?

The tables on the "Paper Pool Tables" activity sheet will help you to think about these questions. You may need to draw additional tables on grid paper to test your ideas about where the ball will stop and how many hits will occur. If necessary, review the rules of paper pool before you start.

When you think you can predict the outcomes, write rules that you could use to determine what will happen to the ball as it travels on a table of any size. Your rules should tell you, without drawing the path, the corner at which the ball will stop and the number of hits that occurred.

Part 2: Write a Report

When you have explored several sizes of Paper Pool tables and have reached some conclusions, write a report on your work. Include the following:
1. A summary of the rules you found, why you think your rules are correct, and anything else you discovered. You might discuss what you noticed as you examined the paths for the different tables and what helped you to arrive at your rules.
2. A drawing of at least one new Paper Pool table (not that is not on the "Paper Pool Tables" activity sheet) for each rule you identified. The drawing should demonstrate that your rule accurately predicts what will happen.
3. Your drawings of the ball's path on each Paper Pool Table on the "Paper Pool Table" activity sheet as well as any other Paper Pool tables you constructed to help you derive your rules.
4. Any tables, charts, or other tools you used to organize your information.
5. An explanation of any other patterns you found or ideas you have about Paper Pool tables and the path of the ball. (For example, on which tables does the ball's path follow similar paths? On which tables does the path of the ball look the same?)

Extension Question

Can you predict the length of the ball's path on any size Paper Pool table? Each time the ball crosses a square, it travels 1 diagonal unit. How may diagonal units will the ball's path cover? In the 6×4 table to the right, the entire path covers 12 diagonal units.