

Paper Pool Game (continued)

Part 1: Investigate Two Questions

Investigate these two questions. Each question is asking you to find out what happens to a ball as it travels on the Paper Pool Tables.

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

The Paper Pool tables on the Labsheets will help you start thinking about the questions. You may need to draw more tables on grid paper to test your ideas about where the ball will stop and how many hits will have occurred. Review "How to Play 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 number of hits and the ending corner for the ball.

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 in your report:

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 one new Paper Pool table (not from the labsheets) for each rule that demonstrates that the rule accurately predicts what will happen.
3. Your drawings of the ball's path on each Paper Pool Table on the labsheets as well as any other Paper Pool tables you constructed to help you derive your rules.
4. Any tables, charts, or other schemes or tools you used to organize your information and look for patterns.
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 the same basic course? On which tables does the design created by the ball's path look the same?)

Extension Question

Can you predict the length of the path the ball will travel on any size Paper Pool table? Each time the ball crosses a square, the distance it travels is 1 diagonal unit. How many diagonal units will the ball's path cover? For example, in the 5 x 3 table to the right, the path length is 15 diagonal units.

