Blokus

1. Basic game info
    - Number of players
      1-4
    - Time to play
      10-20 minutes
    - Suggested ages
      8 and up
    - Description (goal and core mechanic in first line)
      Players take turns placing shapes on a board until they are no longer able to do so. Each shape must touch the corner of a previously played shape of the same color.
    - Genre/ Platform
      The game may be played online, but it has been ported to the psp. The online version allows for single-player mode. There is a also a board game version.
    - Links to forums, reviews, pictures
      http://www.blokus.com/
      http://www.blokus.com/online-game/

2. What is the core learning activity of the game?
   Players learn to problem-solve in a visual manner by recognizing and predicting shapes and spatial arrangements.

3. What integrated domains does this game align with? What pedagogy does it suggest?
   Integrated domain - 'Systems Based Thinking'
   Pedagogy - 'Systems Thinking', 'Tinkering' (to a lesser degree)

4. Does this game have a level editor?
   No.

5. What kinds of social interaction does this game create? What are the qualities of that interaction?
   This game is competitive and it has a nice buildup to the end of the game when there are fewer spaces of the board to occupy. In terms of strategy is seems similar to "Go" in that an early placement decision may steer the course of the game. Students could benefit by reflecting upon when that moment occurs and how play ensues afterwards.

6. What are the 6th grade math curriculum standards that this game aligns with? (include full path)
   - Problem Solving
     - Students will solve problems that arise in mathematics and in other contexts
       - Students formulate problems and solutions from everyday solutions.
         (e.g. Students may describe how and when they decide certain pieces down)
       - Students represent problem situations verbally, numerically, algebraically, and/or graphically.
         (e.g. Students may retell the story of game play in terms of patterns and 2D space)
     - Students will monitor and reflect on the process of mathematical problem solving.
       - Students explain the methods and reasoning behind the problem solving strategies used.
   - Communications
     - Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others
       (e.g. As part of reflection on game choices and strategies, students may

present different strategies based on offensive or defensive moves. They may use graphs or other visuals to demonstrate the strategies)

- Connections
  - Students will recognize and apply mathematics in contexts outside of mathematics in their daily lives.
    (e.g. Students may describe how the pieces and patterns related to area an the gameboard and how this may apply to other topics like architecture or urban planning)
- Geometry
  - Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.
    Shapes
    - Students determine the area of triangles and quadrilaterals (squares, rectangles, rhombi, and trapezoids) and develop formulas.
    - Students use a variety of strategies to find the area of regular and irregular polygons.
      (e.g. calculate area of regular and irregular shapes based on the pieces are that place on the gameboard)
  - Students will apply coordinate geometry to analyze problem-solving situations. Coordinate Geometry
    - Students calculate the area of basic polygons drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths.)
      (e.g. the gameboard could be mapped to a coordinate system)

7. Is the game simulating or modeling something? (real scenario, imagined scenario, predictive scenario, system)
   The game simulates a system of area. All players are given the same pieces, but not all pieces will end up being placed. Students may look at the game with the different patterns created to deduce ways in which area may be calculated.

8. What are the data sets that can be gathered through play of this game?

- Gameplay may be tracked to determine strategy with regards to order of shapes.
- Another type of tracking could relate the pieces played to total area occupied as described in 7.

9. How can these data sets be analyzed and manipulated?
   - **Puzzle quest:** goal is to solve a problem.
     (e.g. create a "finished board" of a single player and ask the students to re-create the board with their colored pieces. This exercise is very similar to playing Lonpos)

10. Tags

    math, area, geometry, multiplication, addition, subtraction