Subject: Mathematics Grade: Sixth

Standard: # 7 Statistics and Probability

Key Concept: Given a problem or situation involving the likelihood of an event happening, students determine the probabilities associated with the various outcomes.

Generalization: Students calculate the probabilities associated with a game.

Background: This lesson would be appropriate after the introduction of probability and a discussion of what is probability. In addition, the whole class should have completed at least one lesson which involves calculating the probabilities associated with a game involving cards and/or dice.

Students choose a tier according to interest in the game. Students should work in pairs to analyze the probabilities associated with their game. Hence, you will have multiple pairs calculating the probabilities for each game. You may want to increase or decrease the number of games depending on the abilities of your students.

All tiers are to calculate all probabilities associated with the game, show how they determine the probabilities, give a written explanation of their thinking, and determine if the game is fair. An extension of the activity would be to have students who analyzed the same game make a comparison of their results.

Note: The tiers listed here are according to broad categories. You may decide to specify the games by name. Keep in mind that the only way to determine the probabilities for some games may be by simulation.

This lesson is tiered in ***content*** according to ***interest***.

Tier I: ***Favorite Board Game, e.g. Monopoly.***

Tier II: ***Favorite Skills Game, e.g. Darts.***
Tier III: ***Favorite Dice Game, e.g. Down and Out (Parker Brothers).***
Tier IV: ***Favorite Spinner Game, e.g. some carnival game.***

Assessment:

Teacher observation of the pairs, accurate calculation of the probabilities and fairness of the game, correct written descriptions, and correct comparisons of results if this extensions is used should all be assessed.

This lesson could also easily be tiered by readiness by varying the complexity of the games.