Probability Lesson- Diamond Draw

1.  NCTM Standard(s):

* Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them:
  + collect data using observations, surveys, and experiments;
* Understand and apply basic concepts of probability
  + describe events as likely or unlikely and discuss the degree of likelihood using such words as certain, equally likely, and impossible;

2.         Launch:

Describe a game or activity and manipulate the rules so fairness is questioned. For example: Four Corners where the number caller can peek. Is this game fair? Why or why not? How often do you think the number caller get the majority of people out if he or she can peek?

3.         Explore:

Students will get in pairs and play Diamond Draw. Split the deck between the two partners. Students will draw cards; if they draw a diamond they win that round. Continue playing until all the cards are gone. Record wins on the record sheet. If both students draw a diamond they have to continue drawing until one draws a diamond. After students finish this round the game with get more unfair. Instead of just diamonds they need the A, K,Q, J of diamonds. Record results, same rules apply. Is this game more or less unfair then the previous? Why? Finally, students try to find a fair game using a deck of cards.

4.         Share:

Students will present their “fair” games. A pair of students will play their game in front of the class. The rest of the students will decide if the game is in fact fair or not. If it is not, what could we do to make it fair?

5.         Summarize:

Through this game student will be collecting data though the results of their game. Describe the likelihood or unlikelihood of winning each round of Diamond Draw. By the end of the lesson students will be able to use I can statements?

I can collect data

I can predict the outcome of a fair and unfair game

I can create a fair card game.