

# PROBABILITY PROJECT

You are being assigned a probability project to be completed both in class, and at home. Each student will create a game that will be played in our **5<sup>th</sup> Grade Casino** on Wednesday and Thursday, January 30<sup>th</sup> and 31<sup>st</sup>. The project is designed to demonstrate why casinos make money, and why their guests lose money.

## **Information to consider when you are designing your game:**

Your game must involve some element of chance (this is the connection to probability).

You will need to provide supplies for your game. For example, if your game involves dice, you will need to bring dice when we play your game. You may borrow any items that you need to complete the project during class time.

Chips for the casino will be available in the following denominations:

Green = \$5

Blue = \$10

Yellow = \$20

Each game (called a "house") and each player will be given a supply of chips to begin the casino or practice session. Players and the house will be expected to count the amount of money with which they begin a session and the amount of money they have at the end of that session. Players will be given \$200 worth of chips to play with when we run the **5<sup>th</sup> Grade Casino**.

Each project should include the following:

- A game involving chance with rules that are clearly stated in writing. The rules should be available for players to read before they begin the game.
- A written statement about the role of probability in the game. This need not be lengthy, but it should be accurate and clear. Specific questions/guidelines will be provided separately.
- A "test record" for the game, detailing actual outcomes for at least twenty trials of your game.

Following the casino, each participant will be expected to participate in an evaluation of their game, and the casino experience overall. For example, you may be asked to discuss your winnings or losings as a house, any surprising outcomes, or what you might recommend for future casino game designers.

**Friday, January 11th:** DUE - The name of your game, and basic rules of the game.

**Tuesday, January 15th:** DUE - A complete explanation of your game, including detailed rules of the game.

**Wednesday, January 16th:** DUE - Statement of how probability is utilized in your game, including the anticipated results (winnings).

**Tuesday, January 29th:** Your complete game is due, with all of the supplies that will be needed to play your game.

**Tuesday, January 29th:** DUE - Test record of your game which should demonstrate that the house will make money. This will be done in class.