

Name _____

Probability Investigation

Objectives: Create two carnival-style games of chance, make predictions of profits based on theoretical probabilities, then test your results.

Students will design their games of chance in partners, but all investigations must be written individually.

Requirements:

- Game One
 - Name
 - Rules & Description of Game, Including Cost & Pay-Out
 - Probability Tree Diagram
 - Theoretical Probability
 - Why the Game Should Make Money—Cost Analysis
- Game Two
 - Name
 - Rules & Description of Game, Including Cost & Pay-Out
 - Probability Tree Diagram
 - Theoretical Probability
 - Why the Game Should Lose Money—Cost Analysis
- Results
 - Game One
 - Number of Times People Played
 - Number of Times They Won & Lost
 - Experimental Probability
 - Profit or Loss
 - Game Two
 - Number of Times People Played
 - Number of Times They Won & Lost
 - Experimental Probability
 - Profit or Loss
 - Difference Between Experimental & Theoretical Probability
 - Why Was There a Difference?
 - Conclusion

Important Dates

Game Descriptions Due	Wednesday, March 30
Carnival Day	Friday, April 1
First Draft	Monday, April 11
Second Draft	Wednesday, April 27

Name _____

Probability Game Details

Game One

Games can use cards, dice, colored tiles, or any other supply you can bring in.

Game Title:

Rules & Description of Game:

Cost to Play:

Pay-Out (what you win):

Theoretical Probability of Winning Game _____

How you got the Theoretical Probability:

Why should this game win money?

Draw your Probability Tree Diagram on separate paper

Name _____

Probability Game Details

Game Two

Games can use cards, dice, colored tiles, or any other supply you can bring in.

Game Title:

Rules & Description of Game:

Cost to Play:

Pay-Out (what you win):

Theoretical Probability of Winning Game _____

How you got the Theoretical Probability:

Why should this game lose money?

Draw your Probability Tree Diagram on separate paper

Name _____

Probability Investigation Rubric

Category	Beginning	Approaching	Meeting	Exceeding
Completeness	Several Days late. Several sections from assignment are missing.	One day late. Not typed. One or two sections from assignment are missing.	On-time. Typed. Includes every section from assignment.	On-time. Includes extra sections not required.
Calculations	Many calculations are incorrect. Tree diagram is mostly incorrect. Cost analysis is mostly incorrect.	Some calculations are incorrect. Tree diagram is slightly incorrect. Cost analysis is slightly incorrect	Calculations are correct. Tree diagram is correct. Cost analysis is correct.	Meeting plus: Step-by-step calculations are shown.
Connections	Mathematical reasoning is incorrect or missing. Analysis of data is incorrect.	Mathematical reasoning is slightly incorrect, unclear, or incomplete. Analysis of data is unclear or slightly incorrect.	Mathematical reasoning is correctly explained. Analysis of data is reasonable.	Mathematical reasoning is though and shows deep thought. Analysis of data shows good critical thinking skills.
Communication	Writing is not in complete sentences or extremely unclear. Few or no mathematical terms are used appropriately.	Writing is slightly unclear or difficult to understand. Some mathematical terms are either missing or used inappropriately.	Writing is clear and concise in complete sentences. Mathematical terms are used appropriately.	Writing is easy to read and flows nicely. Mathematical terms are used appropriately and explained in great detail.

Draft Number _____

Overall Grade _____