

Name: \_\_\_\_\_  
Date: \_\_\_\_\_

# Data Collection Sheet

## *1 Step Race Car Game*

Play 5 games where player 1 moves on roles of 1, 2, and 3 and player 2 moves on roles of 4, 5, and 6. Record who wins each game.

# of times Player1 wins:

# of times Player 2 wins:

1. What is the experimental probability that player 1 will win?
2. What is the experimental probability that player 2 will win?
3. What is the theoretical probability that player 1 will win?
4. What is the theoretical probability that player 2 will win?
5. Were your theoretical results exactly the same as your experimental results?

Play 5 games where player 1 moves on roles of 1, 2, 3, and 4, while player 2 moves on roles of 5 and 6. Record who wins each game.

# of times Player1 wins:

# of times Player 2 wins:

1. What is the experimental probability that player 1 will win?
2. What is the experimental probability that player 2 will win?
3. What is the theoretical probability that player 1 will win?
4. What is the theoretical probability that player 2 will win?

5. Were your theoretical results exactly the same as your experimental results?

***2 Step Race Car Game:***

Play 5 games where player 1 moves on roles of 1, 2, and 3 while player 2 moves on roles of 4, 5, and 6. Record who wins each game.

# of times Player 1 wins:

# of times Player 2 wins:

1. What is the experimental probability that player 1 will win?
2. What is the experimental probability that player 2 will win?
3. What do you think the theoretical probability should be and why?
4. Did your experimental results concur with what you thought the theoretical probability should be?

Play 5 games where player 1 moves on roles of 1, 2, 3, and 4 while player 2 moves on roles of 5 and 6. Record who wins each game.

# of times Player 1 wins:

# of times Player 2 wins:

1. What is the experimental probability that player 1 will win?
2. What is the experimental probability that player 2 will win?
3. What do you think the theoretical probability should be and why?

***Marble Bag:***

Place 10 white marbles and 5 red marbles in a bag. Draw a marble out of the bag, record if the marble is red or white, and then replace the marble back into the bag. Draw 20 marbles from the bag using the draw and replace method described above.

# of red marbles drawn:

# of white marbles drawn:

1. What is the experimental probability that you will draw a red marble?
2. What is the experimental probability that you will draw a white marble?
3. What is the theoretical probability that you will draw a red marble?
4. What is the theoretical probability that you will draw a white marble?

Place 15 white marbles and 5 red marbles in a bag. Draw a marble out of the bag, record if the marble is red or white, and then replace the marble back into the bag. Draw 20 marbles from the bag using the draw and replace method described above.

# of red marbles drawn:

# of white marbles drawn:

1. What is the experimental probability that you will draw a red marble?
2. What is the experimental probability that you will draw a white marble?
3. What is the theoretical probability that you will draw a red marble?
4. What is the theoretical probability that you will draw a white marble?

***Deck of Cards:***

1. Mix the cards, draw a card, record if it is a spade, and replace it back into the deck. Do this 20 times.

Spade:

Not a Spade:

2. What is the experimental probability of drawing a spade?
3. What is the theoretical probability of drawing a spade?

***Spinner:***

# of times that the spinner stopped on red:

# of times that the spinner stopped on green:

# of times that the spinner stopped on blue:

1. What is the theoretical probability that the spinner will stop on red?
2. What is the theoretical probability that the spinner will stop on blue?
3. What is the theoretical probability that the spinner will stop on green?
4. What is the experimental probability that the spinner will stop on red?
5. What is the experimental probability that the spinner will stop on blue?
6. What is the experimental probability that the spinner will stop on green?
7. Were your theoretical and experimental results the same? Why do you think your results differed from the theoretical probabilities?

***Penny Flip:***

# of coins with heads facing up:

# of coins with tails facing up:

1. What is the theoretical probability that the coin will land with the head side upward?
2. What is the theoretical probability that the coin will land with the tails side facing upward?
3. What was your experimental probability for the coin to land heads side up?
4. What was your experimental probability for the coin to land tails side up?

***Monty Hall Game:***

# of wins when player switched cards:

# of wins when player chose to stay with his/her original card:

# of losses when player switched cards:

# of losses when player stayed with his/her original card:

1. Do you think it should make a difference if the player chooses to switch cards? Why?
2. Did there seem to be an advantage to switching cards or staying with the originally chosen card? Why do you think you got these experimental results?