**M & M’s and Probability Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

You and your partner are going to do some “testing” of probability today. DO NOT EAT any M&M’s until the worksheet says you can. If you do, your data will be wrong.

One person will be the M&M selector, and the other person will be the Recorder. Pick who will have each job and record it below.

M&M selector \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Recorder \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Here are the steps you are going to take:

1. The M&M selector reaches into the bag without looking and picks out one M&M.
2. The Recorder tallys on the chart which color M&M was picked.
3. The selector puts the M&M back in the bag.
4. Repeat steps 1-3 forty-nine more times. (You will make 50 different picks total.)

The Recorder will record the data below.

|  |  |  |
| --- | --- | --- |
| **Color** | **Tally of Times Picked** | **Total # of Times Picked** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

After the Recorder has tallied the number of picks, add the tally marks and record the total number in the column “Total # of Times Picked”.

The M&M selector needs to copy the data for the “Total # of Times Picked” only.

Now you can complete the back of this worksheet together.

**M&M’s and Probability – *Calculations***

1. Count the total number of M&M’s in the bag. Record the number here: \_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| ***Actual Results (Experimental)*** |
| **Color** |  | **Probability** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. Calculate the *actual* results that you obtained for each color. Use the “Actual Results” table to the right. You will need to record the equation for each probability. (Experimental Probability)
2. Count the # of each color of M&M’s in the bag. Record your answers in “# of M&M’s” column in the “Theoretical Probability” table below.
3. Now we are going to calculate the *theoretical* probability using the equation we learned about in class. Write your calculations in the “Theoretical Probability” table below, and record the probability of pulling each color out of the bag.
4. (NOW you can eat the M&M’s ☺)

|  |
| --- |
| ***Theoretical Probability*** |
| **Color** | **# of M&M’s** |  | **Probability** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Record the probability in the Experimental Probability table and the probability in the “Theoretical
 Results” table for each color. Compare the results. Are they the same or are they close?

|  |  |  |
| --- | --- | --- |
| **Color** | **Experimental Probability** | **Theoretical Probability** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

2. Should the #’s for the “Experimental Probability” be close to the “Theoretical Probability”? Why?