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

**The Great M&M Experiment**



**QUESTION: What percentage of milk chocolate M&M candies are orange?**

The purpose of this activity is to introduce you to the basic concepts we will be encountering in Statistical Reasoning. Your goal is to answer the question above using only a “Sample” of M&M candies. You must justify your conclusion by organizing, plotting, and referencing data collected by the entire class.

**I. Collecting the Data:**

Scoop out a sample of M&M candies. Count the total number of M&Ms in your sample. You will need EXACTLY 25 M&Ms, so if you need more, RANDOMLY choose a few more to add to your sample. If you have too many, you must RANDOMLY choose M&Ms to discard. ***DO THIS WITHOUT LOOKING SO THAT IT IS RANDOM! NO PEEKING!***

**II. Organizing the Data**

Calculate the percentage of each of the colors in your sample using the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Color** | **Percentage** | **Color** | **Percentage** |
| Blue |  | Brown |  |
| Green |  | Orange |  |
| Red |  | Yellow |  |

a. Write the percentage of ***orange*** M&Ms in your sample: \_\_\_\_\_\_\_\_\_\_\_

b. Record the class data using the following chart:

|  |  |  |  |
| --- | --- | --- | --- |
| **Group #** | **Percentage of Orange Candies** | **Group #** | **Percentage of Orange Candies** |
| 1 |  | 9 |  |
| 2 |  | 10 |  |
| 3 |  | 11 |  |
| 4 |  | 12 |  |
| 5 |  | 13 |  |
| 6 |  | 14 |  |
| 7 |  | 15 |  |
| 8 |  | 16 |  |

**III. Displaying the Data: Display the data using a dot plot.**



**IV. Analyzing the Data:**

* 1. Describe some general features of the data.
	2. What would you consider a “normal” or a “typical” percentage of orange M&Ms? Why?
	3. Does our data reveal the true percentage of orange M&Ms?

If so, what is the true percentage?

If not, what DOES it reveal about the true percentage?

**CONCLUSION: How confident are you in your conclusion? Why?**