

Introduction to AP Statistics  
M&M Lab



Objective: The M&M web site says that each package of M&M's should contain 24% blue, 14% brown, 16% green, 20% orange, 13% red, 14% yellow M&M. We are going to compare your bag of M&M's with the expected values to see if your sample matches the advertised values in order to determine if the Mars Company is using false advertising.

1. Make a hypothesis about your bag of M&M's in comparison to the expected amounts.

Color	Observed	Expected
Blue		
Brown		
Green		
Orange		
Red		
Yellow		

2. Are the two columns equal? Why or why not?

2. Find the residuals for each color.

Color	Observed	Expected	Residual
Blue			
Brown			
Green			
Orange			
Red			
Yellow			

3. Interpret the meaning of the residuals.

4. How does your data compare to your hypothesis?

5. Do you think we could submit this data to the Mars Company to prove that they are using false advertising? Why or why not?

*Calculator Required*

6. In your Stats List, type the observed amounts in L1 and expected in L2.

7. Compute a Chi-Square Test to find the p-value: the probability that the null hypothesis of the your bag of M&M's matching the expected percentages.

8. What does your p-value tell you about your bag of M&M's?