# Mandms color distribution 

m\&ms color distribution $M \& M$ plain candies are designed in a variety of colors. These candies are button shaped and were first developed in American but are currently sold in over 100 countries. The shell is of different colours and inside the candy are filled with different ingredients such as the chocolate, peanut, almond, cinnamon, cherry, raspberry, gingerbread and candy corn among others. The unique distribution of colors adds to the overall appeal of the candy. Customers have over 23 different colors to choose from. The attractive colors found on the candy match the sweet taste that is contained in these candies. The color of the candies has changed over the years depending on the market demands and other issues. For instance, the red color had been eliminated in the year 1976 after it was believed that it contained components that could cause cancer. It was replaced by orange color but it was later returned to the shelves after it was discovered that it was not after all carcinogenic. Each flavor has different color and is made of different ingredients making it to have a distinctive taste and look. The color is distributed through certain percentages. M \& Ms color distribution has always been something that has intrigued different types of people. As a result, there are different people who have tried to analyze the colors. This article compares Josh Madison's analysis and that from Consumer Affairs Office.

According to the consumers' affair office, the following are the statistics for the distributions of the colors: $25 \%$ brown, $10 \%$ blue, $6 \%$ green, $7 \%$ orange, $17 \%$ red, $18 \%$ yellow and $17 \%$ purple. Josh Madison analyzed the color distribution of the candies using the random sampling method. He did not take several packages of the candies from different locations. Instead he analyzed the candies from a single case which had a total of 48 packages.

This would ensure that he was able to analyze packages that came from the same production store. He then took to counting all the candies with different colors in each package and compared it with the total number found in the whole sample as a way of checking the errors. These are results that were obtained from the analysis: 18. 36\% were blue, 14. 16\% brown 18. 44\% green, and 20. 76\% orange, 14. 20\% and $14 \%$ yellow. Blue was observed to be the most popular color but the statistics from the sampling were lower than the expected value of $24 \%$.

Comparing the statistics from the two analyses it can be observed that the distribution of the different colors is quite different. For instance, according to the consumers' affair office, distribution of the blue color is only 10\% percent while according to Madison's it is the most popular color with 18 36\% distribution. Moreover, according to consumers' affair brown color is the most popular with $25 \%$ in distribution while brown is only 14.14 \% according to the Madison report. Other colors analysis also showed a great discrepancy. This shows that it is possible that the M\& M colour distribution is a random affair with no formula followed to create the colors.

