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Title: Statistics of M & M’s

Subject Area: Probability and statistics

Learning Activity Description: Read the statement from the M & M/ Mars company and discuss what you would expect to see in a bag of M & M’s if the statement is true.

Lesson Activity Objective: Introduce the class to the concept of a “Goodness of Fit” test in which we can test how well an entire distribution fits a hypothesized distribution.

Lesson Activity Outcomes: Introduction to a hypothesis test to see how marketing departments can utilize the information to come out with new products or to make changes to existing products.

Materials/Supplies Listed: Bag of M & M’s for each student, paper towel, calculator, markers and paper

Teacher Procedures: Instruct students to count each color and report these values to the students to enter on their tables for their groups. Divide the frequencies by the total to get the frequency distribution. Have students to discuss how their distribution varies from the one provided by the Mars company. Have students construct either a bar chart or a pie chart to show the distribution visually. Also have students discuss the marketing of the product and to connect the concept of frequency distributions, probability and future predictions

Preparation Time for Learning Activity: 30 minutes

Room set-up: Put groups of 4 – 5 students together at a round table. Have tables around the room. Have poster board up on the walls for students to make their frequency distribution and pie chart
Group Strategies (example, group size, expected time for groups, etc.): Opening 10 minutes, group activity 20 minutes, closing 10 minutes

Student Products/Artifacts/work pages:

Assessment Criteria/Rubric:

Closing/Transition to next activity: Summarize why we did the activity and have a couple of students come up with how they could use this sort of activity in their own lives right now.