WAYNE STATE UNIVERSITY

LESSON PLAN

M&M'S PROBABILITY AND STATISTICS

SUBJECT AREA: MATHEMATICS AND STATISTICS

DESCRIPTION: Are all M&M's represented equally? Students will investigate the claim that Mars Inc. has previously made that green M&M's make up 16% of all milk chocolate M&M's produced.

LESSON OBJECTIVE: Students will make a hypothesis based on the claim Mars Inc. has made about the color proportions of green M&M's by collecting and analyzing a sample population of colors in a package of M&M's. Students will learn how to chart and graph their results while constructing a viable argument that their claim is true or false.

MATERIALS/SUPPLIES:

- Bag of M&M's (regular full-size packages work best, but this can be done with fun size)
- Paper towel
- Printed handout
- Markers

ACTIVITY PROCEDURES:

1. Introduce the activity to students. Have each student write down a hypothesis.

   Hypothesis examples could include answering: Will one color be the most predominant? Will the color green be found more or less than 16% of the packages? What colors will be the most or least frequently found in the packages?
2. Have each student open their package of M&M's and begin counting the colors of the individual candies on the paper towel. No eating the M&M's for now — but have students wash their hands if they plan to eat the candy afterward. Have students tally their results on the printed handout.
   a. If students are working with fun-size packages, pair them up into groups of three or four and have them tally their results together.
3. Complete the handout by finding the frequency of each of the M&M's colors. To find the frequency, divide the number of each color by the number of M&M's.
4. Have each student use the back of the handout to create a bar or pie chart of their results.
5. Bring class together to report and discuss results.

DISCUSSION AREA AND QUESTIONS:

- Were any bags of M&M's or groups off target compared to the rest of the class?
- Configure all data to make one large data set. Compare those statistics with the Mars Inc. claim about green M&M's.
- Based on the data we have found today, does the data match up with the Mars Inc. claim about green M&M's?
- How did your personal hypotheses match up with what you found?
- How do companies use data for marketing purposes? What are the advantages and disadvantages of this?

Adapted from Patricia Michno, WSU Mike Ilitch School of Business

M&M'S PROBABILITY AND STATISTICS

STUDENT NAME: _____

STUDENT HYPOTHESIS: _____

_____

_____

_____

_____

_____

CHART FOR M&M'S COLORS:

TOTAL NUMBER OF M&M'S IN PACKAGE: _____

OBSERVED COUNTS: Brown _____ Blue _____ Orange _____ Green _____ Red _____ Yellow _____

FREQUENCY: _____ _____ _____ _____ _____ _____