

M&Ms Introduce Students to Statistics

This two-day introductory lesson engages students in the data analysis process and develops their statistical thinking with a data gathering activity, a pre-reading anticipatory set of questions, a reading assignment, and a post-reading lecture with guided notes. Students in my college business statistics course gathered data by weighing packages of M&Ms and counted the number of each color. Students entered the data into an online survey and analyzed the results in a spreadsheet. The applications of this student-collected data included discussions and activities about cleaning data, calculating numerical summaries, creating graphs, calculating probabilities, and determining independence.

When I first did this activity, I used only plain M&Ms. If you have enough students (to gather a large enough sample for analysis), I recommend using both plain and peanut M&Ms. I had my students gather data on peanut M&Ms during another class period but the novelty had worn off by then. Gathering data on both types of M&Ms allows you to explore more concepts than with just one type.

Objectives

After these lessons, students will be able to...

- Gather and record data
- Define basic statistical terminology
- Apply terminology to the context of the activity

Materials

- Kitchen scale that measures to at least two decimal places
- Fun size packages of plain and peanut M&Ms (enough for each student to have at least 1 package)
- Copies of the anticipatory set of questions and post-reading guided notes (one set per student)

Note: I also have Hershey Kisses on hand for students who cannot eat M&Ms due to allergies. Eating the M&Ms is a perk of the activity.

Data Gathering Activity (Day 1)

This data gathering activity engages students in the data analysis process on the first day of class. Students will weigh the package contents and count the number of M&Ms of each color. The worksheet has a table for recording the data. Students can also enter the data into a survey or spreadsheet. I set up a survey in StatCrunch designed to record the weight and color distribution of one package of M&Ms. With this survey, students can submit more than once if they have more than one package of M&Ms. [Click here to check out how I set it up](#) and design your own using StatCrunch or another survey platform. StatCrunch creates a table with the variables Type, Weight in Ounces, Brown, Yellow, Red, Orange, Green, and Blue. Each record (row) stores the data of one package of M&Ms.

Pre-reading Anticipatory Set of Questions (Day 1)

The pre-reading questions introduces basic statistical terminology from the context of the activity.

Reading Assignment (Homework to be completed before Day 2)

The terminology is from the first chapter of *Business Statistics: Communicating with Numbers* by Jaggia/Kelly. The homework I assigned was to read chapter 1 using the LearnSmart technology by the publisher McGraw-Hill.

Post-reading Lecture with Guided Notes (Day 2)

On day 2, I discussed the terminology using the M&M activity and other examples. I projected the key on the board but encouraged students to fill in their guided notes with whatever they thought would help them remember the definition. Writing the definition word for word is not necessarily effective.