

M&M Counting

Activity (15 min)	Activity Task
How many M&Ms are in a 1.69oz bag of M&Ms? Do all 1.69oz bags have the same number of M&Ms? Do all bags have the same distribution of colors?	BEFORE YOU OPEN YOUR BAG OF M&Ms: 1. Write the following labels on the bottom of your sheet of paper leaving room above each color to stack the appropriate M&Ms: Red, Yellow, Orange, Green, Brown and Blue. The image below shows the bottom of your sheet of paper. You might want to also put your name above "My Estimate". 2. Write an estimate as to how many of each color you think will find in your bag as My Estimate below each color name. Do not let the example below influence your estimate. 3. Open your bag of M&M's and sort them by color on your paper creating a graph on the paper by stacking your M&Ms by color. Do not do this if you have not written your estimates for each color!  Red Yellow Orange Green Brown Blue My Estimate: My Actual Count: 4. Count your totals by color and write your totals on your sheet of paper for each color under the color name and next to the Actual Count label you wrote on the paper. 5. You might want to take a picture of your "graphed" M&Ms and then put your M&Ms into the ziplock bag provided or back into the package if you would rather. The candy is yours to keep & eat!! Keep your paper - you will need it for the reflection activity. ADD YOUR ACTUAL M&M COUNTS TO THE CSTA 2019 COUNTING M&Ms GOOGLE SHEET:

	Open the Google Sheet at bit.ly/csta2019mm and follow the directions below: 1. Find your name on the spreadsheet and add your actual counts for each color to the spreadsheet on the row with your name. If you worked in pairs, change the name cell to reflect both names; please do not add the information twice to the spreadsheet. 2. If your name is not on the spreadsheet, see Bill or Vicky!
Reflection (10 min)	Reflection Task
Can you use the charts and graphs created from the M&M Counting Activity to support an idea?	Go to Seesaw and complete Activity <i>Data & Analysis: M&M Counting Reflection</i> answering the following questions using the data collected by those counting M&Ms: 1. How did your original estimate compare to what was actually in your package? Did this surprise you in any way? Based on information from 2017, M&Ms are packaged in two different locations with two different distributions of colors: • Cleveland, TN: 20.7% Blue, 20.5% Orange, 19.8% Green, 13.5% Bright Yellow, 13.1% Red, 12.4% Brown • Hackettstown, NJ: 25% Blue, 25% Orange, 12.5% Green, 12.5% Bright Yellow, 12.5% Red, 12.5% Brown 2. Given the information above about the packaging plants and the data collected by the group from counting M&Ms, where do you think the M&Ms you counted were packaged and why?
Additional Information	
Where did the information about color distribution come from? Check out the blog post, The distribution of colors for plain M&M candies. There's some interesting information in the post and the comments on the post. Video: Watch How Mars Makes M&Ms & How M&Ms Are Made	

I (Vicky) primarily did this with 5th graders but have at times done a modified version in 3rd & 4th grade. After the students have entered their counting data into a collaborative spreadsheet, each student gets a copy in Google Classroom. In 3rd grade, the spreadsheet includes all of the formulas charts they will need to work with the data that was collected. The spreadsheet for 4th graders includes the formulas for sample size, class totals, and percentages and they create their own charts & graphs, for their data and for the entire class. 5th graders add all of the formulas and create their own charts & graphs, both for the entire class and for their data, individually. [Here's a 5th grade student post](#) about this from a few years ago.

Students can use the M&M data to explore data analysis with programming by importing the data into Scratch and working with it there. An example can be seen [here](#).