

Is It Center or Is It Variability?

Task

Statistical questions are questions that can be answered by collecting data and where we anticipate that there will be variability in that data. The data collected can be summarized in a distribution that can then be described in terms of center and in terms of spread. For some statistical questions, to answer the question you need to consider center. For other questions you might need to consider spread.

For each of the five statistical questions below, decide if you would answer the question by considering center or considering variability in the data distribution.

Example 1: The records office at an elementary school keeps daily attendance records.

Question 1: For students at this school, what is a typical number of school days missed in the month of April?

Example 2: Suppose that third graders at your school took both a math test and a social studies test. Scores on both tests could be any number between 0 and 100.

Question 2: On average, did the students score better on the math test or the social studies test?

Question 3: Were the students' scores more consistent (more similar to one another) on the math test or on the social studies test?

Example 3: Bags of M&Ms don't all have exactly the same number of candies in each

bag. Suppose you count the number of candies in each of 25 bags of plain M&Ms and in each of 25 bags of peanut M&Ms, and make two dot plots—one for the number of candies in the plain M&M bags and one for the number of candies in the peanut M&M bags.

Question 4: If you wanted to give each student in your class a bag of M&Ms and you wanted to try to make sure that each student got the same number of candies, should you give them bags of plain M&Ms or bags of peanut M&Ms?

Question 5: If you wanted to give each student in your class a bag of M&Ms and you wanted to try to give students bags with the greatest number of candies, should you give them bags of plain M&Ms or bags of peanut M&Ms?



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