

Analyzing Data for Evidence of Method Deviations

Objective: Students should understand that the methods used during experimentation need to be constant with little variations.

Activities:

- Students (in groups of 2-3) will be given a sheet with two sets of data. The data are both from pull-off tests, but each set of data is drastically different from one-another.
- Students will only be told that the two sets are from different trials on two different days.
- They then are to compare /contrast the data. Students may use their knowledge of statistics to accomplish this. (bar graphs, standard deviation, mean, median, etc.) Each group must produce at least two means of comparison, graph, calculation, etc.
- Then the teacher will gather the class back together and discuss the results as a class.
- Once the class comes to the conclusion that the data are very different, the teacher will tell the students to go back to their groups.
- Students are then instructed to figure out why the data are so different. They are to write down five questions they have regarding the methods used during experimentation. The teacher will walk around the room and answer *only* the five questions each group writes down.
- The group that comes the closest to the actual reason the data were different will report to the class and receive a little prize.

Note: The reason for the variation is that the method used while preparing the samples was different. Two different people prepared the first set of samples.