

Goals:

- To see variation as a measure of the degree to which data deviate from their “centre”
- To develop an index that will allow for measuring the degree to which data deviate from their “centre”—that is, determining a measure of spread
- To use your index in making fair comparisons between data sets
 - The data sets involve measuring the same variable/attribute (e.g., measuring the heights of students in same grade-level classes)

Key Terms:

- *Index*
 - “A statistic which assigns a single number to several individual statistics in order to quantify trends” (Wolfram Math World).
 - Current example: measures of central tendency (mean, median and mode)
- *Variation*
 - “The extent to which data points in a statistical distribution or data set diverge from the average or mean value. Variability also refers to the extent to which these data points differ from each other” (Investopedia).

Instructions:

“The ‘X’ represents the target, and the black dots show where different pitches landed. Your task is to invent a procedure that computes a “quality” index for determining which of the pitching machines is best. There is no single way to do this, but you have to use the same procedure for each machine so that your comparison of the machines is fair. Write your procedure and the index value that you compute for each pitching machine.”

Crites, T., & Thomas, S. L. (2015). *Putting essential understanding of statistics into practice in grades 9-12*. Reston, VA: NCTM.

References:

Index Number. (n.d.). Retrieved April 18, 2016, from <http://mathworld.wolfram.com/IndexNumber.html>

Variability Definition | Investopedia. (2003). Retrieved April 18, 2016, from <http://www.investopedia.com/terms/v/variability.asp>

Pitching Machines

