

# Measures of Spread

## Summary

Students use standard deviation to distinguish between two different production methods. Their goal is to determine which method would be better for production of pain killer tablets.

## Main Core Tie

Secondary Mathematics I

[Strand: STATISTICS AND PROBABILITY - Interpreting Categorical and Quantitative Data \(S.ID\) Standard S.ID.2](#)

## Life Skills

Thinking & Reasoning

## Materials

In order to complete this assignment, students will need the worksheets and data attached to this assignment. A graphing calculator or computer spreadsheet will help with the larger calculations, but a simple calculator is all that is necessary.

The files titled 'MeasuresOfSpread' have the problem and data for the problem. The .doc and .pdf files are the same. The .doc file is provided to allow teachers to adjust the wording or lesson to better meet their students' needs. The 'StdDevExcelInstructions' files contain instructions for using Microsoft Excel to calculate the standard deviation of a data set. The two files have the same information. The .doc file is provided to allow teachers to adjust the material for better use in their classroom.

## Background for Teachers

In order to approach this lesson, the teacher needs to be familiar with the worksheets that are included. Teachers should also be familiar with data entry for their calculators and/or spreadsheet software. Instructions are provided for how to set up the calculations for Microsoft Excel.

## Student Prior Knowledge

Students are expected to be able to calculate the mean, median, and mode of a set of data prior to beginning this lesson.

## Intended Learning Outcomes

Upon completion of this assignment students will be able to calculate the standard deviation of a set of data. They will be able to use the standard deviation as a tool to analyze and describe a set of data.

## Instructional Procedures

### **Teacher:**

- Review with students the steps to finding the mean of a set of numbers.
- Hand out worksheet and allow students to work through the problems.
- Answer questions and/or hold a follow-up discussion once students have finished the worksheet.

### **Student:**

- Work through the worksheet.
- Create a presentation/report that outlines the reasons a particular production method is better than another method.
- Present/Participate in a final discussion on the use of measures of spread, such as standard deviation.

### Extensions

The 'ProbSimTI84' files are instructions on running the probability simulation application on a TI-84 or TI-83 calculator. The Probability Simulation application can be used to generate a set of data similar to that used in the main lesson.

### Authors

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