| Name: Kevin Westrich |
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| Grade level(s)/Subject taught:  Math 10-12, Algebra 2 |
| Objectives:   Calculate the population standard deviation for a set of data. |

Please provide a rich **one-page, single-spaced**, description or a *vision* of your best thinking on a way or ways you might teach the planned lesson.  (approximately ½ page for the teacher role, ½ page for the student role).  Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

1.  *Write* the Mathematical Concept or "key idea" that modeling will be used to teach: (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

Students could use the lists in the TI graphing calculator as a spreadsheet to work through the steps of calculating the standard deviation.  This could reinforce the formula

Materials:      Class set of TI graphing calculators.
                Standard deviation worksheet.

"…a rich **one-page, single-spaced**, description or a *vision* of your best thinking…"

Prompts:
1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions
4. How will you assess the learning for the lesson?

Students have learned how to calculate mean, median and mode as measures of central tendency. They have drawn box-and-whisker plots so that they know how to calculate quartiles. On their worksheet they are presented with two sets of data with the same mean, median, and mode, but very different dispersion. Students can calculate the range and inter-quartile range to see how they can show the different dispersion of the data.

Next students will calculate the variance and standard deviation of one set of data. I know that the graphing calculator can compute the standard deviation, but I want students first to understand what the standard deviation really shows.

Using the lists on the graphing calculator, students can enter in one list of data and use the other lists as a spreadsheet. They will enter into the top of each column first in $L_2$ enter ($L_1$ – the mean), then in $L_3$ enter $(L_2)^2$. Then students can calculate the sum of $L_3$ and then divide by the number of items in the data set. After writing down the variance the square root of the variance would provide the standard deviation.

By calculating the standard deviation using the lists on the calculator it reinforces what steps you go through when calculating the standard deviation. While reinforcing the steps, it is also saving students from too many tedious calculations. After having students calculate several more standard deviations as a homework assignment, I would then show them how the calculator could compute the population standard deviation for them, so that they could check their homework.