Walking the Hall Activity

Thinking about and collecting data NAME_____

1. If we all walked the same short distance in the hall (less than 30 seconds) and recorded the number of steps we took, predict what the graph (dotplot) will look like. Justify your answer.

2. If we all walked the same LONG distance in the hall (more than one minute) and recorded the number of steps we took, predict what the graph (dotplot) will look like. Justify your answer.

3. What if we created a scatterplot of everyone's short distance step count vs. their long distance step count. What would this look like? Justify your answer.

4. Let's go walk the halls! Two distances are already marked out, so use your normal walking pace and count the number of steps for both distances.

Short: _____ steps Long: _____ steps

Record these data pairs on the board or poster paper. Also include a column for each person's initials.

Create graphs to see if your predictions were correct!

5. What are some of the features of the dotplots of steps? Was there anything unexpected?

What would account for the variation in the number of steps?

6. Describe the association between number of steps in the short walk vs. the number of steps in the long walk (look at a scatterplot). Discuss anything unusual that appears.

7. What if we measure each person's approximate leg length (hip bone to floor is fairly easy to measure) and compare to the step counts of each walk. What would we expect to see? Explain.

Collect this data and add it to the previously collected step data.

Create two scatterplots, using leg length as the explanatory variable for each.

Compare what the scatterplots reveal compared to the predictions. Discuss any anomalies or unexpected results.

Solutions/Hints:

Let students THINK by themselves first…this is good for the introverts…
Then have them DISCUSS with a partner/group…

Have a whole-class discourse following these initial student discussions…
Use the principles of good discourse!

The weak relationship between leg length and step count lends itself to a discussion of what other variables might impact step count. Students usually identify that different people have different gaits (though they may not use the term gait, which means “stride length”). Gait/stride analysis can be used to assess deviations from normal, especially if a person’s baseline gait has changed due to an injury, students got distracted during the walk, they wore new shoes, etc.

Sample graphs: