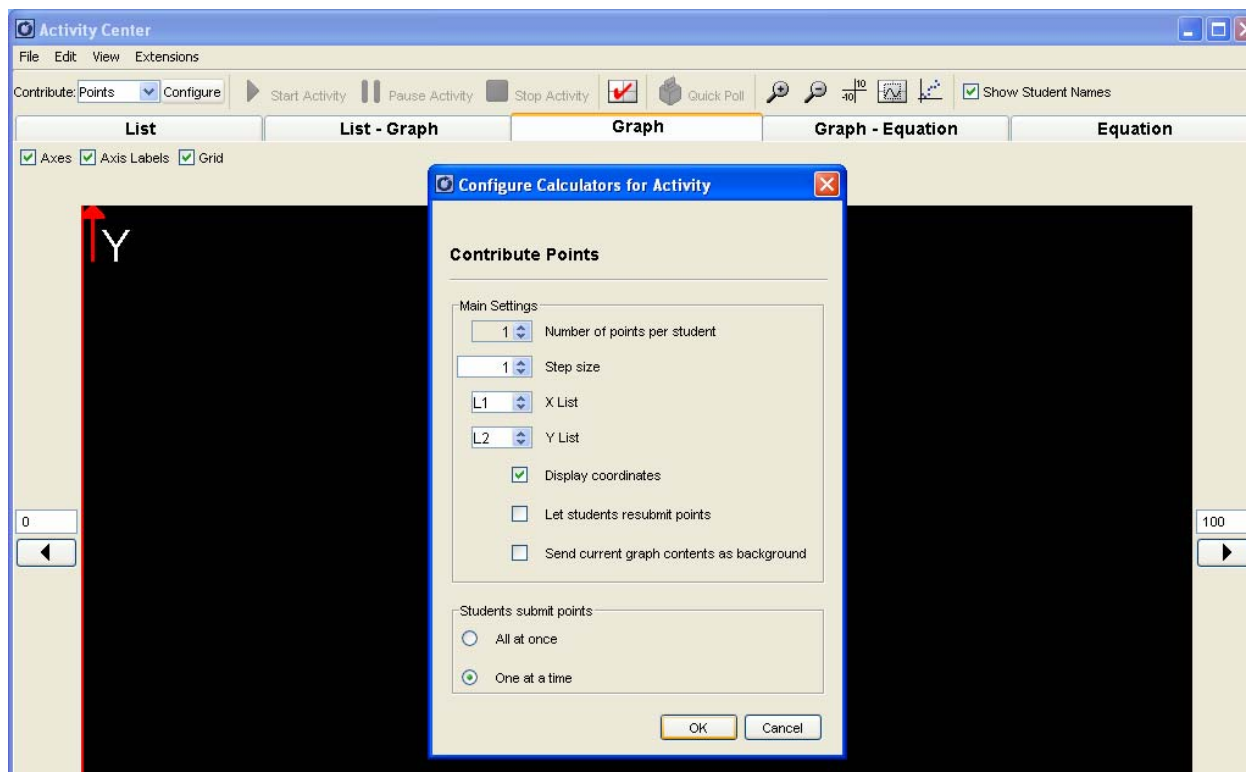


Algebra 2

Teacher Handout for Identifying Types of Correlation from a Graph and Calculator

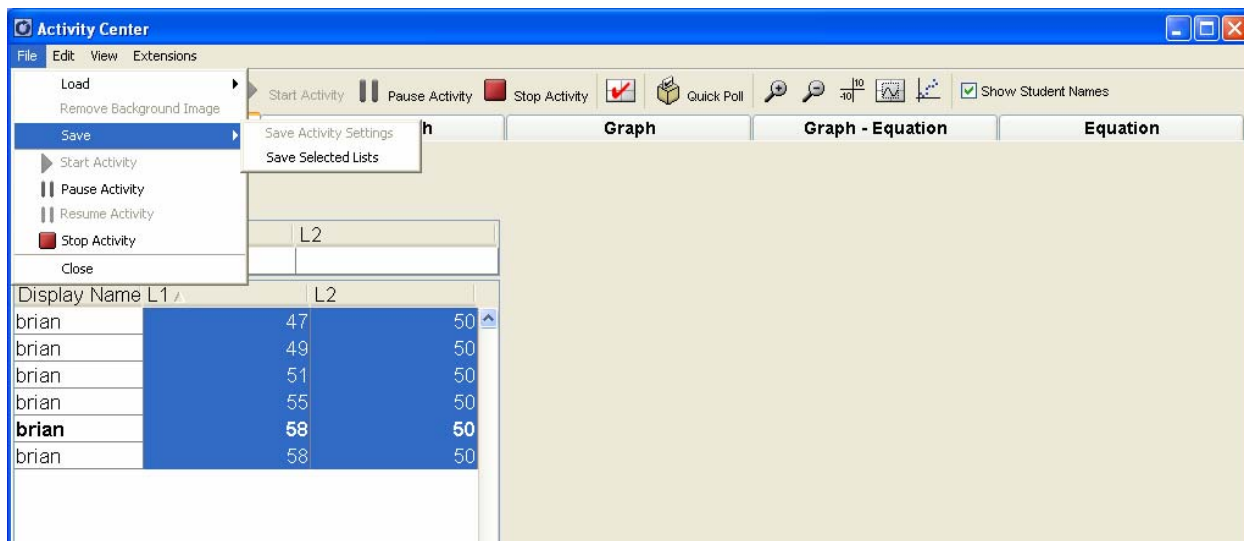
Presented by Brian T. Austin

1. Set up classes in TI Navigator and save the 'Activity Settings' for the 'Apples and Oranges' task. The scale for the graph is 0 to 100 on the x -axis and y -axis. To do this, the teacher will need to start TI Navigator and click on the 'Activity Center' icon. Change the scale at the end of each axis, then save the settings by clicking on FILE, SAVE, and SAVE ACTIVITY SETTINGS. This will allow the teacher to access the setting quickly when the class begins.
2. By following the same directions, the teacher may choose to setup the same graphical settings for the next task which may be named 'Grade Level and Age.' For this assignment, the x -axis is set from 0 to 12 (for the grade level) and y -axis is set from 0 to 20 (for the age of the student).
3. Choose the option BEGIN CLASS while still on the main Navigator window.
4. Prior to starting the PowerPoint, open the 'Activity Center' and load the previously saved settings. This is accomplished by selecting FILE, LOAD, LOAD ACTIVITY SETTINGS and selecting the file name for the 'Apples and Oranges' activity.
5. This task requires that students submit 'points.' Therefore, choose the option POINTS next to the prompt CONTRIBUTE in the top left hand corner of the screen below FILE. Click on the text CONFIGURE to the right of the CONTRIBUTE-POINTS text. This will open a window from which the teacher may setup the manner with which the data will be collected. Consider the following screen:

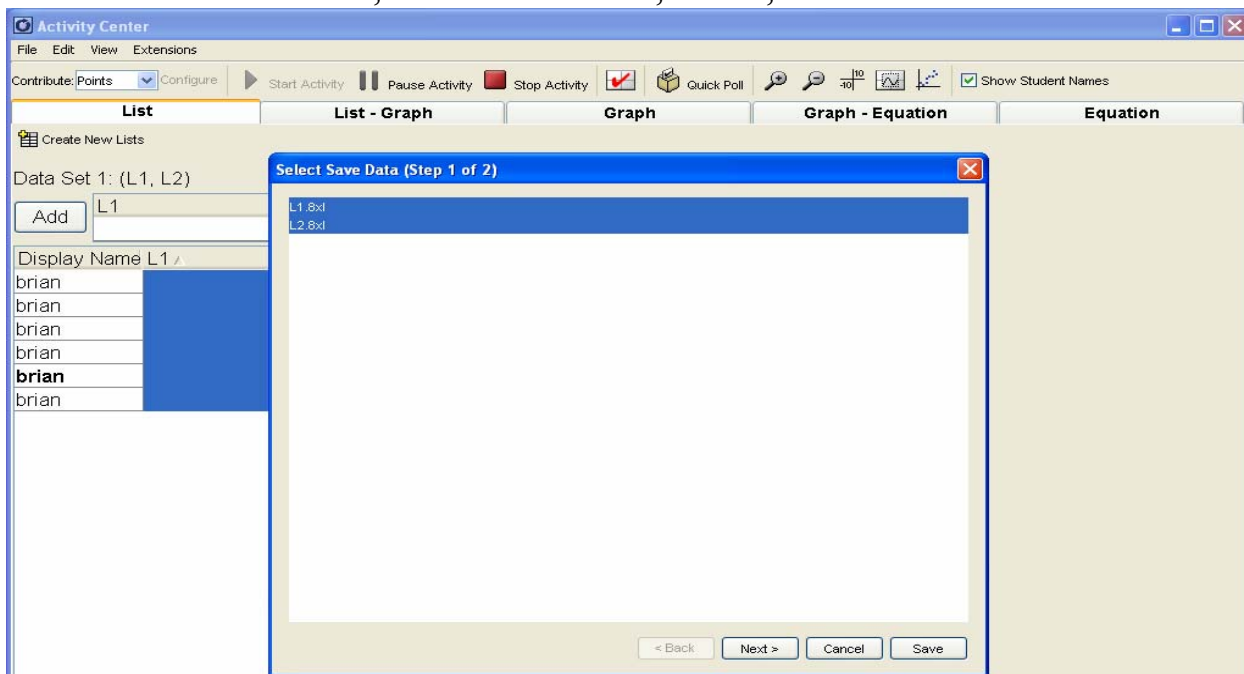


Note that the X List and Y List are correlated with L1 and L2 for transfer to the students later in this endeavor. The teacher may choose to 'Let students resubmit points.' However, I prefer to let them practice one time, then stop the activity and have the students perform the task again.

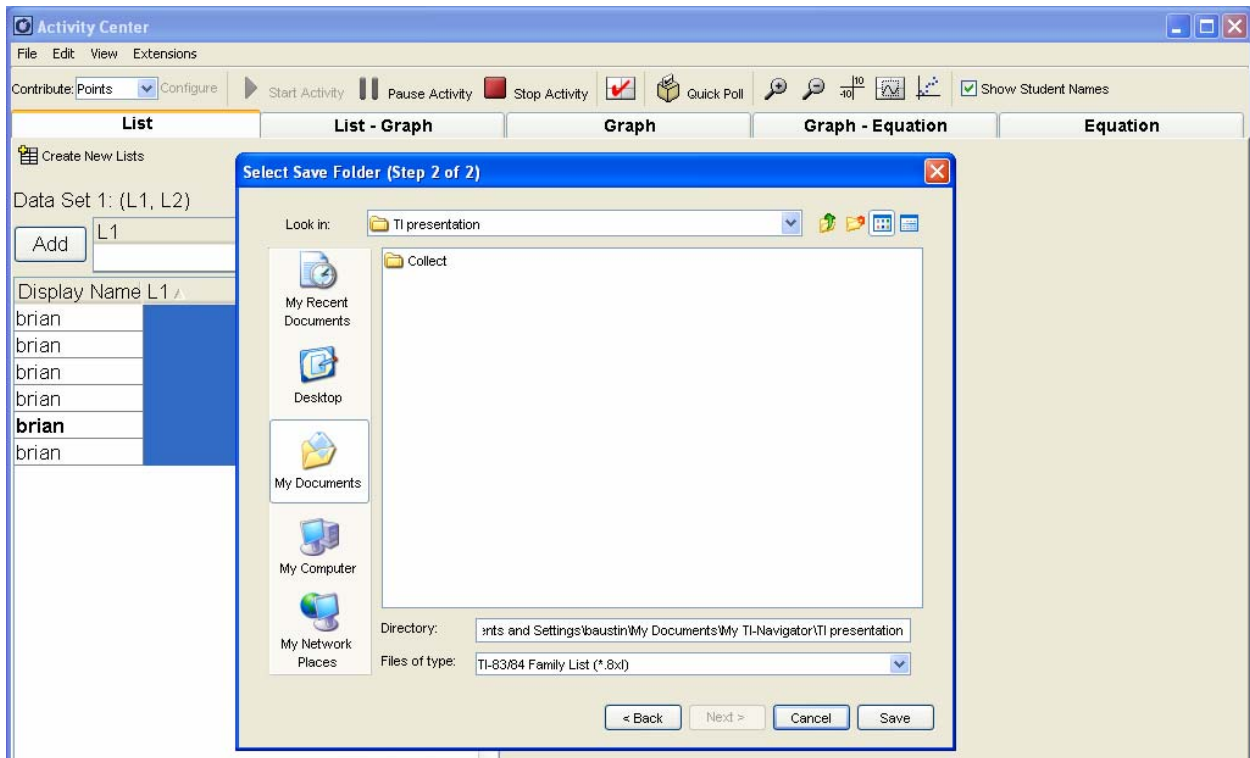
6. After the teacher chooses to STOP ACTIVITY and discusses the results, then choose the LIST tab again.
7. The screen will now display the results of the student submissions in columns entitled L1 and L2. In order to compile the results for distribution to the students, choose L1 and L2 by watching for the 'hand' to appear above the list name.



Left click on the two lists, then choose FILE, SAVE, and SAVE SELECTED LISTS.

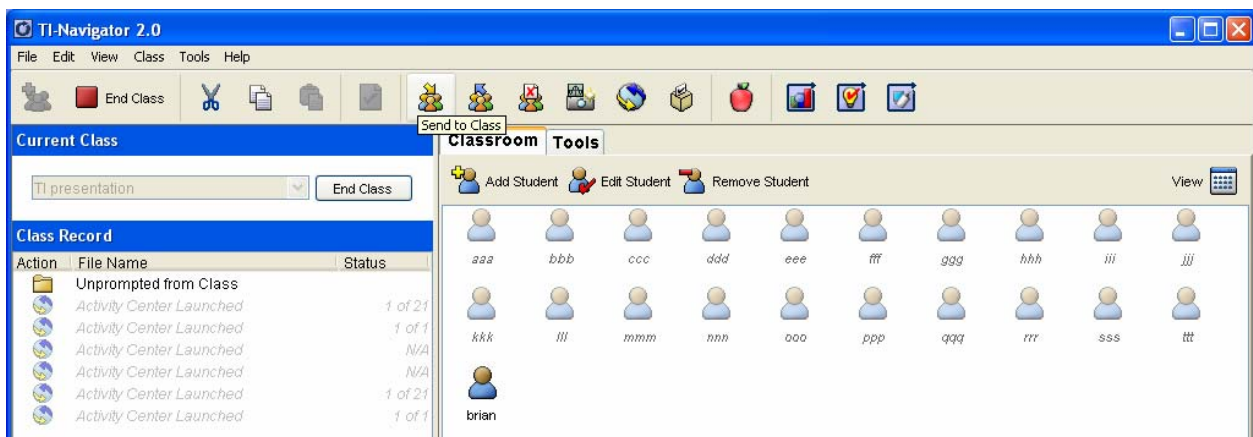


Click NEXT, choose the folder to which the lists are to be saved, then click SAVE.

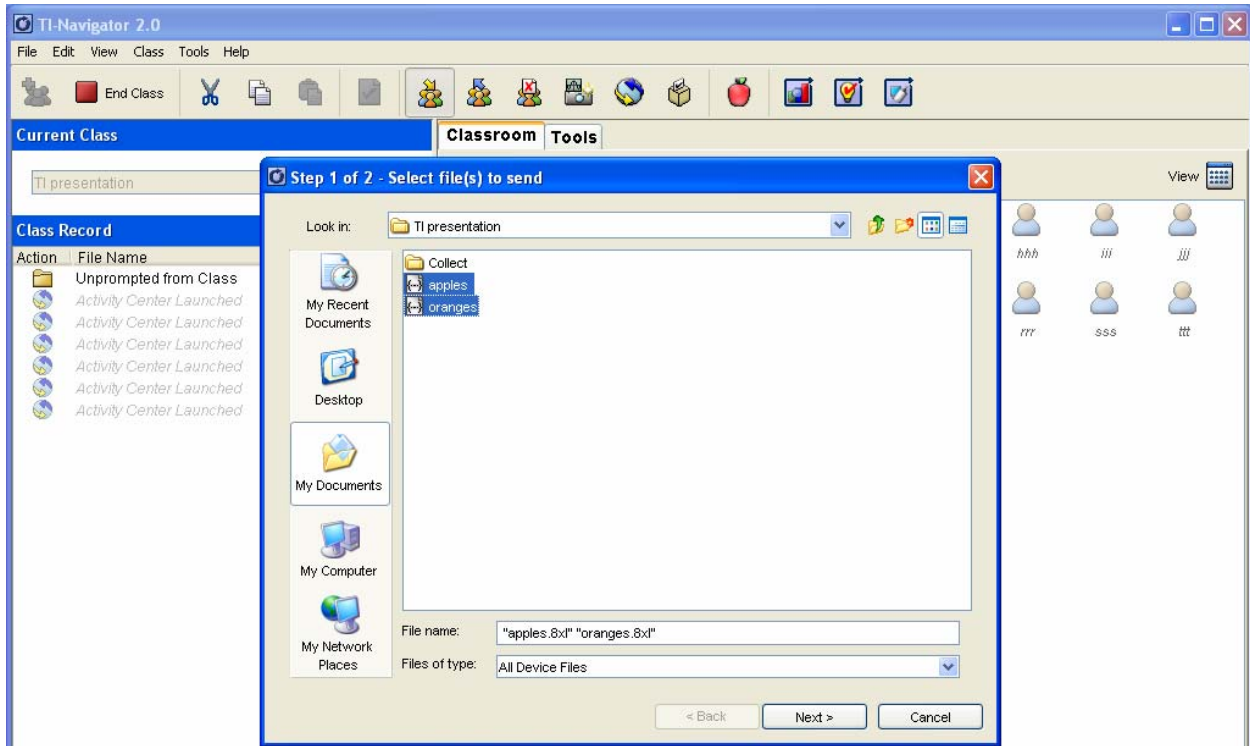


The files are now saved in the selected folder as L1 and L2. Due to the numerous activities that will be done over the course of a year, the teacher may want to rename the file by going to the appropriate folder and 'right clicking' on the file and choosing RENAME. This will change the name of the list to a more recognizable form. It may also be more convenient to create activity specific folders for ease of access and retrieval.

8. The teacher should now exit the 'Activity Center' and choose the icon which represents 'send to class.'

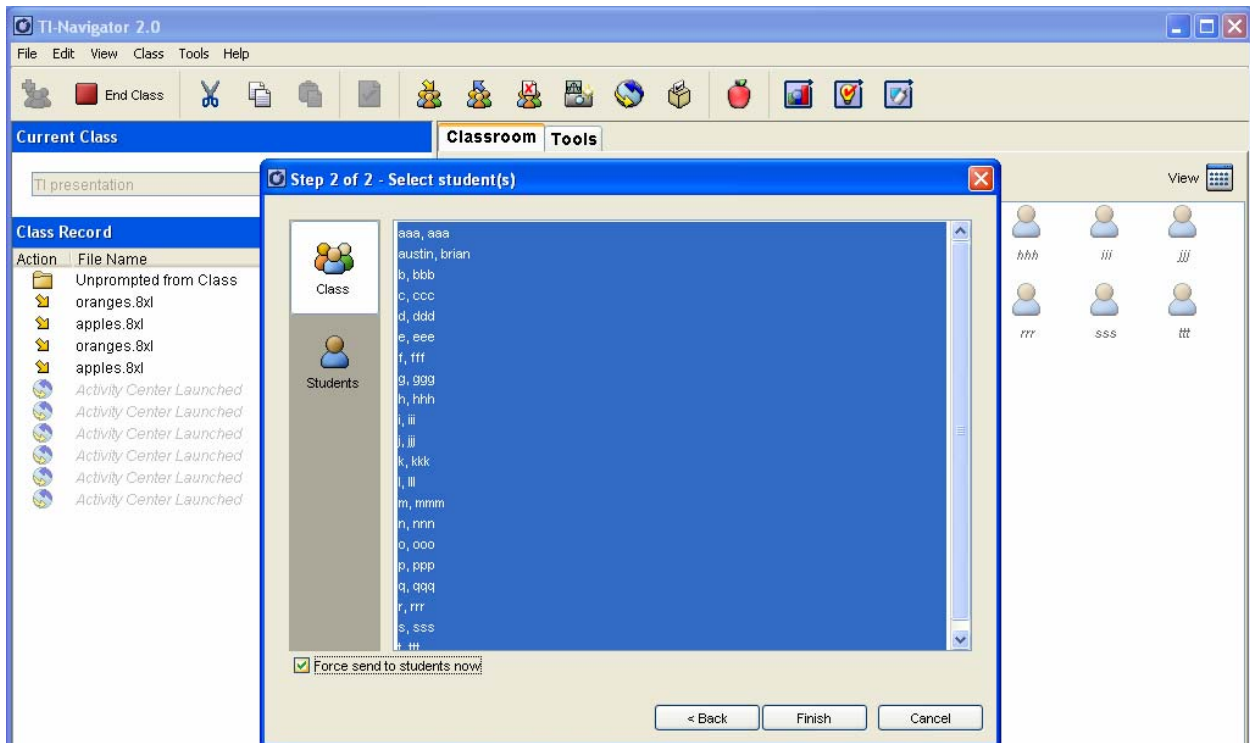


The files which were saved and renamed earlier in this project should be selected for transfer to all students. Note the files were renamed APPLES and ORANGES for ease of use.



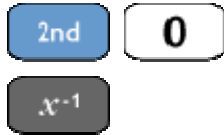
Choose NEXT.

Click CLASS and check the box for FORCE SEND TO STUDENTS NOW.



Students have now received the data compiled from the initial activity regarding the frequency with which they eat apples and oranges. The basic correlation of the data was discussed by looking at the scatter plot earlier.

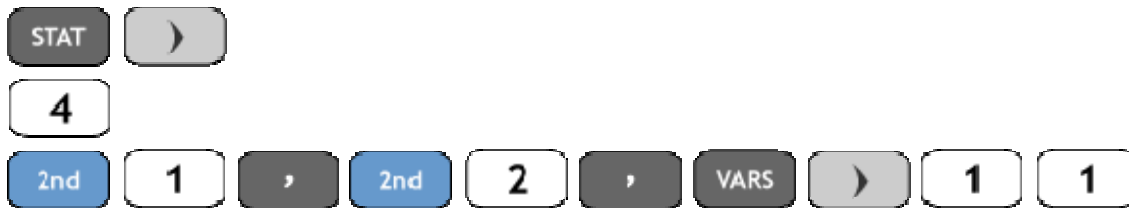
Now, using the table of values, demonstrate the method of finding the linear regression line or line of best fit and how to find the r value. The r is activated by turning the DIAGNOSTIC ON. This is accomplished by choosing CATALOG and scrolling down to this option or by performing the following keystrokes:



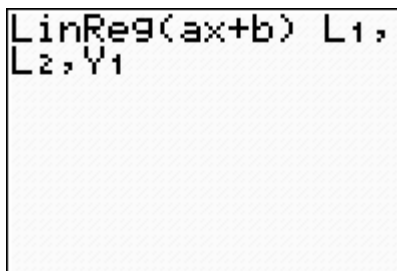
Scroll down the alphabetical listing to DIAGNOSTIC ON and press ENTER, then ENTER again. The display screen will be as follows:



Discuss the findings of the class and the results. When finding the linear regression, place the resultant equation in Y1. This is accomplished by using the following keystrokes on the TI graphing calculator.



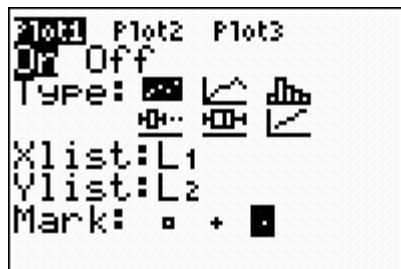
The resulting display screen should be as follows:



This operation will paste the results from the computation of the linear regression to the Y1 function so that we can compare the line of best fit to the data in a graph.

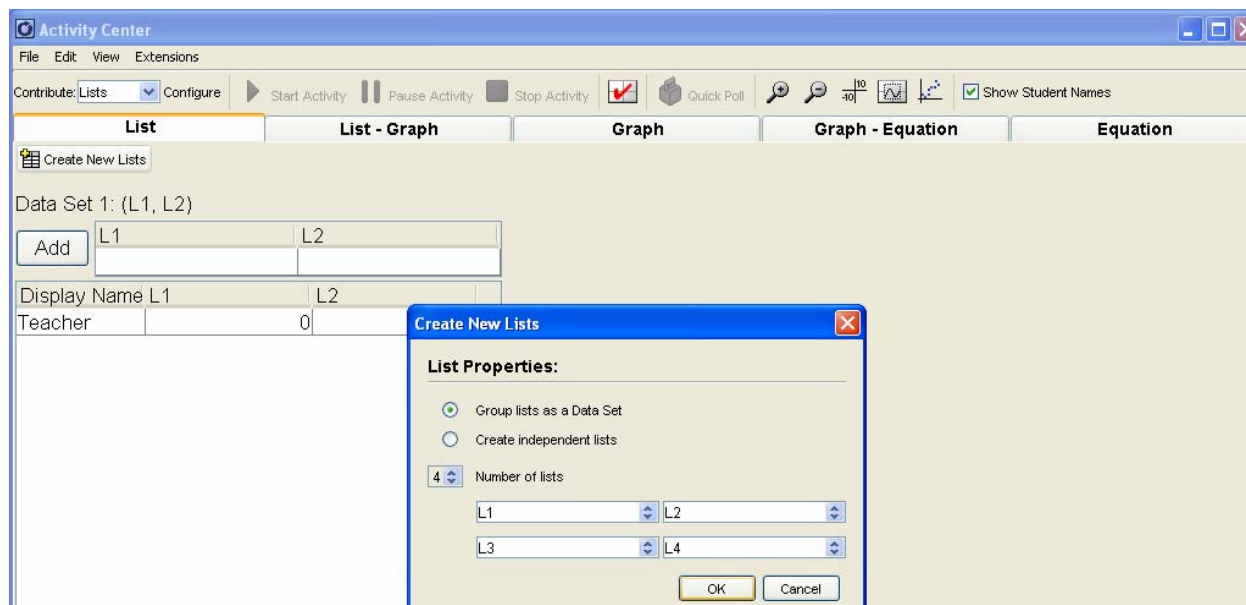
Discuss the results of this process and the meaning of the r value.

Choose the following options to turn on the STAT PLOT and function graph.



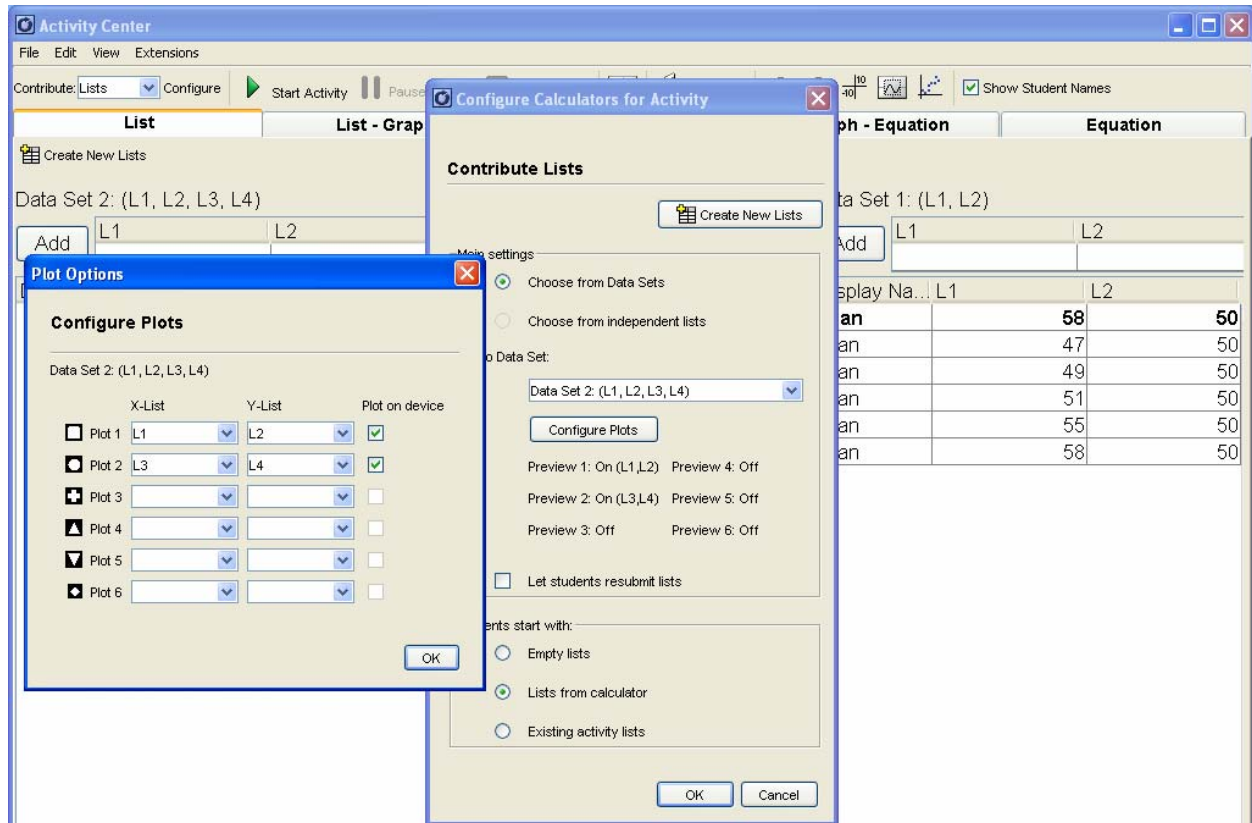
Ensure that the students screen looks like the preceding screen shot. Then have the students click GRAPH on their calculator. The same data that was displayed during the initial work in the 'Activity Center' should now be shown on their calculator with the line of best fit graphed also. This line should be a close approximation of the first estimate made by the class.

9. After students complete their portion of the 'Grade Level and Age,' then choose the same option in the 'Activity Center' as in the previous section. Choose CREATE DATA LISTS again and choose four different lists (i.e. L1, L2, L3, and L4). These lists will represent the information contributed by both students in each group.



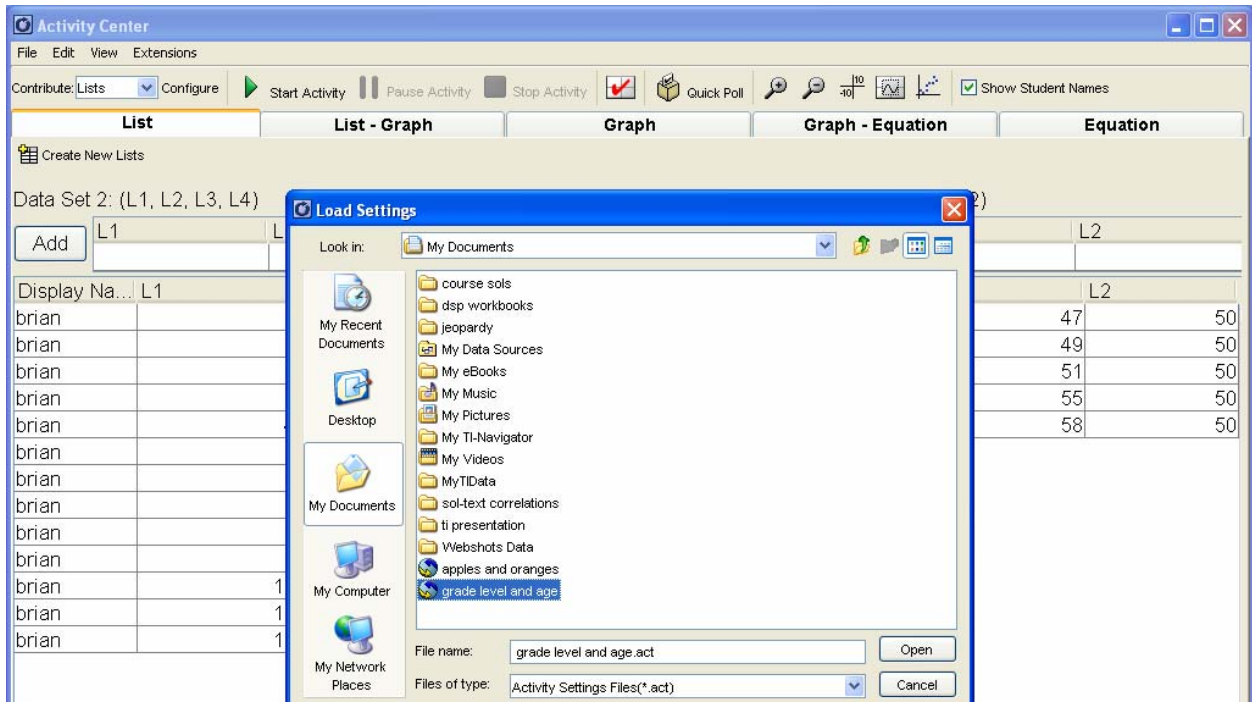
One student will TRANSFER her/his list L1 and L2 to the other student and RECEIVE L3 and L4 from the second student. The process will be reversed for the second student as she/he will TRANSFER L3 and L4 and RECEIVE L1 and L2. This is done by using the connecting cable from calculator to calculator.

- After students complete this process, collect the data from the class. This is accomplished by going back to Navigator and opening the 'Activity Center.' Then choose to CONTRIBUTE LISTS, then click on CONFIGURE.



Note that the DATA SET is SET 2 (L1, L2, L3, L4). Choose CONFIGURE PLOTS and note that the X-List is L1 and L3 and the Y-List is L2 and L4. Personally, I prefer to give students the option of plotting their data prior to submitting it, this is the reason that the PLOT ON DEVICE boxes are checked. In order to maintain a measure of consistency with the data collected, students are not allowed to resubmit their lists.

Click on FILE, LOAD, and LOAD ACTIVITY SETTINGS. The file that was previously named in this activity was 'Grade Level and Age.'



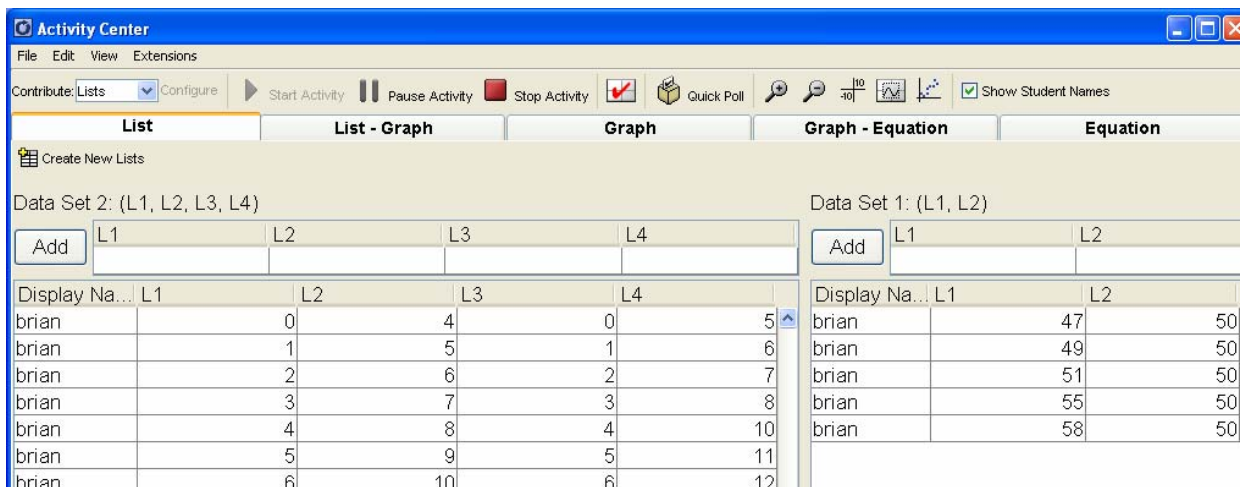
Choose OPEN, then click the icon START ACTIVITY.

Students should log back in to NavNet and go to the 'Activity Center.' The lists with which they have been working will now be displayed on their screens.

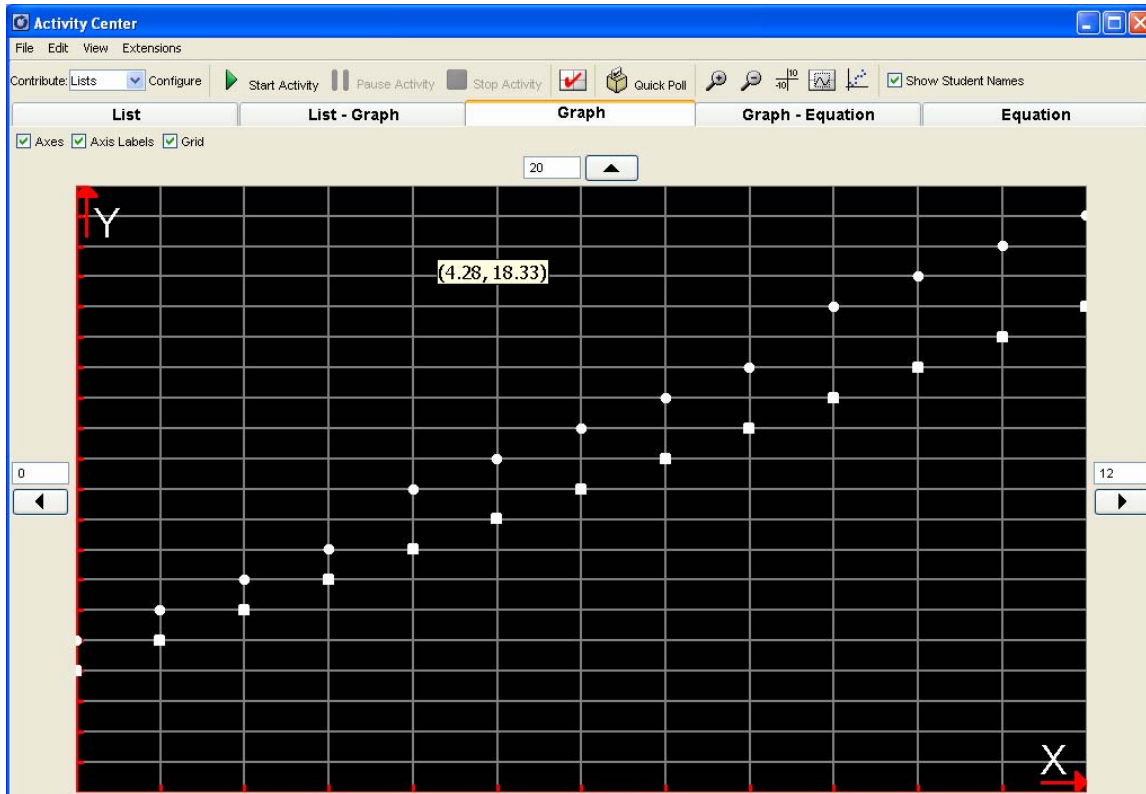
L1	L2	L3	L4
8	12	8	14
9	13	9	16
10	14	10	17
11	15	11	18
12	16	12	19

$L4(14) =$
 $\sqrt{14}$ $\sqrt{14}$

Students should now click SEND. The information will then be transferred to the 'Activity Center.'



As the data is imported the teacher may display the lists or the graph of the data by choosing the LIST tab or GRAPH tab.



- The lists may then be collected for redistribution to students by clicking FILE, SAVE, and SAVE SELECTED LISTS.

Display Name	L1	L2	L3	L4
brian	0	4	0	5
brian	1	5	1	6
brian	2	6	2	7
brian	3	7	3	8
brian	4	8	4	10
brian	5	9	5	11
brian	6	10	6	12
brian	7	11	7	13
brian	8	12	8	14
brian	9	13	9	16
brian	10	14	10	17
brian	11	15	11	18
brian	12	16	12	19

Display Name	L1	L2
brian	47	50
brian	49	50
brian	51	50
brian	55	50
brian	58	50

Follow the same directions as before and, if necessary, rename the files or create activity-specific folders.

12. Discuss the graph and any obvious correlations.
13. Exit the 'Activity Center' and send the four (4) lists to the class by choosing 'Send to Class' as aforementioned.
14. Students will work with their partner to analyze the data compiled from the class using their own sample for comparison.