

Hints for setting up a ti-nspire document for

“There’s Math in March Madness”

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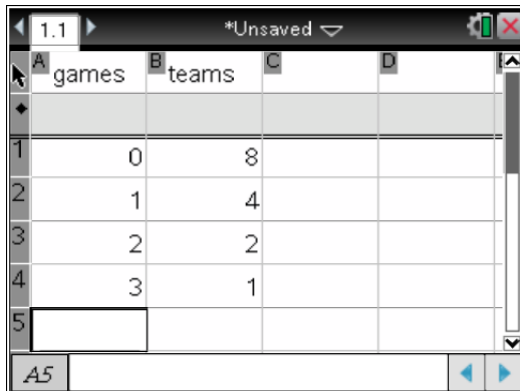
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General Suggestions

You can conduct this as a class activity, using a single document and can use connectivity software to collect student documents for evaluation purposes if you choose. A *navigator* system allows for classroom sharing and rich class discussion. If using a single document, I recommend inserting a “New Problem” when beginning a new data set. Otherwise, the window settings for the “Data and Statistics” pages will carry over for each problem. You may insert a new problem by pressing **docv** **4:Insert 1:Problem**. The following steps are steps for using the handheld, but they strongly correlate with the ti-nspire teacher software.

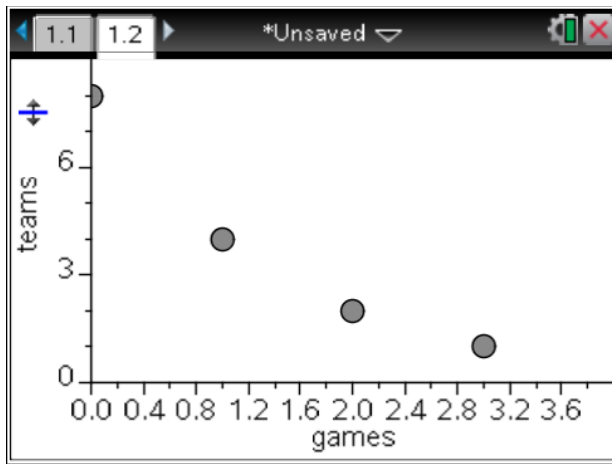
Steps for constructing the document.

1. After turning on the handheld, use the touchpad to arrow over to the “Documents” side of the screen. Press **1: New Document** .
2. Choose option **4: Add Lists & Spreadsheet**. You will see a spreadsheet. In the column title cells A and B, enter *games* and *teams*. **Note, do not type in the cell that contains the \blacklozenge** . That is the formula box. The *games* column will be where we enter the number of rounds played in the tournament, and the *teams* column will be where we list the number of teams left after each round. An example for the very first NCAA Men’s Championship Basketball Tournament is shown below.



	A games	B teams	C	D
1	0	8		
2	1	4		
3	2	2		
4	3	1		
5				

3. Press **ctrl docv** . Choose option **5: Add Data & Statistics**. You will see a scatterplot that needs to be defined. Press **tab** to define the horizontal axis. Since the number of teams remaining in the tournament depends upon then number of games played, *games* will be our independent variable, and we will label the horizontal axis “*games*.” Click on “*games*” to label the horizontal axis. Press **tab** again to label the vertical axis. That axis will be labeled “*teams*.” Click on “*teams*” to label the vertical axis.
4. Once you have labeled the axes, you will see a scatterplot that looks like the following. To adjust your window settings, press **menu 5: Window/Zoom 1: Window Settings**. You will now be able to adjust the window to your preferences. Your scatterplot should look something like the one on the next page.



You can use the touchpad move over the points to see the coordinates of the points.

5. Depending on your objective, you can either get the calculator to graph and label the equation of the function, or you can input our own function and see if it fits the points.
6. To get the regression equation (which will exactly fit this data set) press **[menu] 4: Analyze 6: Regression 8: Show Exponential**. You will see the graphed function as well as its equation.
7. To have students make conjectures about the equation of the function and test them on the handheld, press **[menu] 4: Analyze 4: Plot Function**. You will now see a box in which to enter the function.

You may repeat these steps with the various data sets representing the tournament bracket formations throughout the years. As noted above, you will probably want to insert a new page between each data set (**[docv] 4:Insert 1:Problem**). Some of the data sets represent piecewise functions. I do not recommend finding regressions for these; instead, you can manually enter the piecewise functions by following the instructions in step 7, and once the function box appears, press **[F1]**. *If your function contains two pieces, choose the seventh option from the right on the first row. If the function contains three or more pieces, choose the eighth option from the right on the first row.*

This activity can be taken in many different directions, depending upon the level of the student and the objectives of the course. Have fun enjoying the ***Math in March Madness!!***

Various tournament bracket formations can be found at <http://www.allbrackets.com/>