

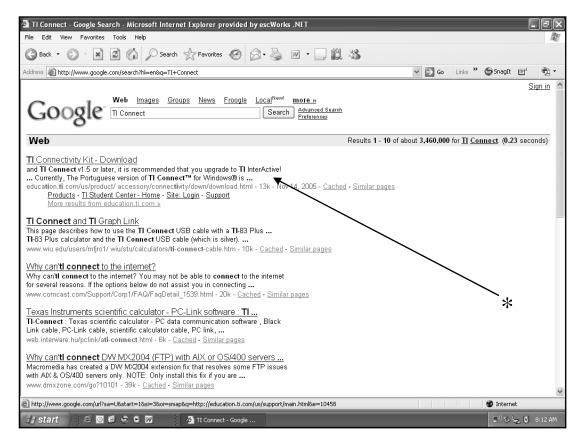
Technology Tutorial: Loading TI Connect

TI Connect is a linking software used to download and transfer data, and connect calculator, computer and internet platforms.

Note: In order for TI Interactive 1.3 software to interface with the TI Connect software a 1.5 or higher version of TI Connect must be downloaded.

Advance Preparation

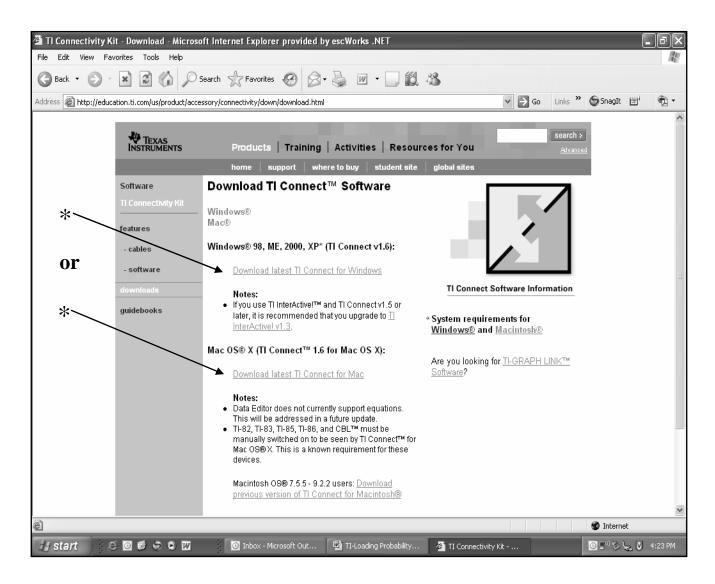
Google search: TI Connect, select TI Connectivity Kit (*) and Bookmark. Website: Appearance of the Texas Instruments website may differ. <u>http://education.ti.com/us/product/accessory/connectivity/down/download.html</u>



- 1. TI requires a registration/login process to the website. Registration/Login process follows:
 - A. Google/Browse to website, if bookmarked use bookmark: http://education.ti.com/us/product/accessory/connectivity/down/download.html



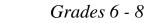
B. Select the appropriate computer platform (*). If a **Security Alert** window pops up click **OK**.

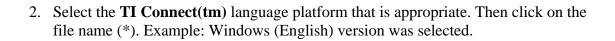




C. The registration/login process will begin at this point. Select **New User Registration** or input **User Name** and **Password**. Personal information and an agreement with terms will follow for new users. As illustrated below (*). If a **Security Alert** window pops up click **YES**.

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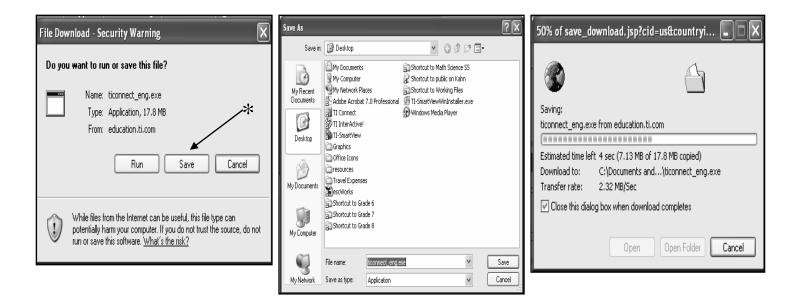


Teaching Mathematics TEKS Through Technology

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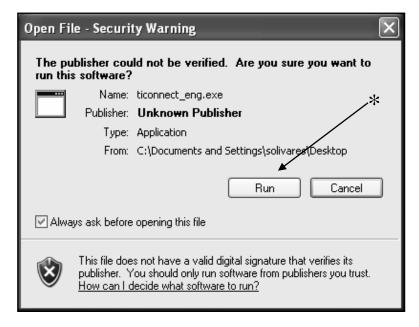
3. Select Save (*), and save to the Desktop. Download will begin.



4. Once download is complete, close all windows. A **TI Connect_eng.exe** icon will appear on the desktop.

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5. Double click on the **TI Connect_eng.exe** icon , and run set up.



6. The **TI Connect Set**-up will go through several windows including a software license agreement.

i Ti Connect 1.6 Setup		i	🖟 TI Connect 1.6 Setup	
We	elcome to Tl Connect™ 1.6			We recommend that you exit all other applications before installing TI Connect 1.6.
* Do * Dra * Ca	Connect [™] Software makes it easy to: www.load graphing calculator software applications (Apps) ag and drop all data types, such as lists, variables, etc. plure screen images for use in other documents			If you receive a Microsoft® warning regarding a driver not being signed, please select 'Continue Anyway' in order for your Texas Instruments Education Software to install properly.
Ba	ickup data from a graphing calculator to a computer			TI Connect version 1.6 provides advanced communications capabilities that may require an update to your TI device's Operating System. (You can update using TI OS Downloader following installation.)
	xit the installation at any time, click on Cancel. To inue, click on Next.		TEXAS INSTRUMENTS	Do you want to continue installing TI Connect version 1.6?
	< Back Next > Cancel	-		Yes No

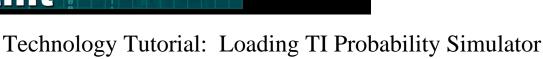
(continue)



Grades 6 - 8

🖗 Ti Connect 1.6 Setup	🖓 TI Connect 1.6 Setup
Please read the following license agreement. Use the scroll bar to view the rest of this agreement.	Please verify or change the TI Connect destination location according to your preference.
TEXAS INSTRUMENTS PC SOFTWARE LICENSE	Destination Folder C:\Program Files\TI Education\ Browse
By downloading the software and/or documentation you agree to abide by the following provisions.	
1 License: Subject to your payment of any applicable license fee, Texas Instruments Incorporated ("TI") grants you a license to copy and use the software program(s) and documentation from the linked web page or CD ROM ("Licensed Materials"). In addition to the copy S	Disk Space Click the Disk Cost button to see the disk space required to Disk Cost install this product.
 I accept the license agreement I do not accept the license agreement 	To continue, click on Next.
* Cancel	<pre></pre>
i 🖗 TI Connect 1.6 Setup	🖗 TI Connect 1.6 Setup
We now have enough information to install TI Connect 1.6 on this computer. To begin the installation, click on Next. To review or change any of the installation information, click on Back.	TI Connect 1.6 has been successfully installed!
Current Settings Folder: C.\Program Files\TI Education\ Start Menu: TI Tools	TEXAS INSTRUMENTS Click the Finish button to exit this installation.
< Back Next> Cancel	< Back Finish Cancel

- 7. Close all windows when setup is complete.
- 8. A **TI Connect** icon will appear on the desktop.
- 9. Drag the **TI Connect _eng.exe** icon to the trash can, and delete.



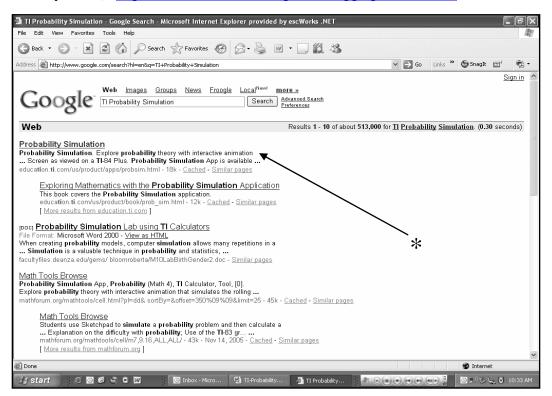
APPS

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The TI Probability Simulation APPS is an application software with interactive animation of the following probability situations: tossing coins, rolling dice, drawing marbles, spinning spinners, drawing cards, and generating random numbers. The TI Probability Simulator APPS requires the TI-73 Operating System 1.6.

Advance Preparation

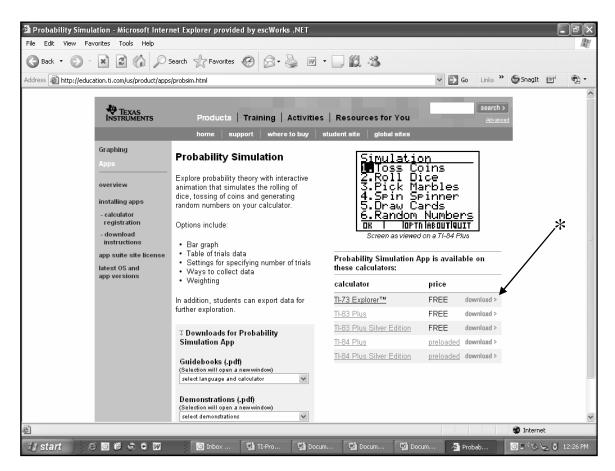
- Check for TI Connect software on computer; if not loaded, load using Technology Tutorial Loading TI Connect.
- If the computer has TI Interactive, make sure it is version 1.3 or higher.
- Connect a TI-73 calculator to a computer with internet access using a **TI Silver Graph Link**. Be sure to turn on the calculator.
- Google and Bookmark the website (appearance of the Texas Instruments website may differ): <u>http://education.ti.com/us/product/apps/probsim.html</u>



- 1. TI requires a registration/login process to the website. Registration/Login process follows:
 - A. Google/Browse to website, if bookmarked use bookmark: <u>http://education.ti.com/us/product/apps/probsim.html</u>



B. Select **download** for the appropriate calculator. For Example: TI-73 Explorer (*) was selected. If a **Security Alert** window pops up click **OK**.



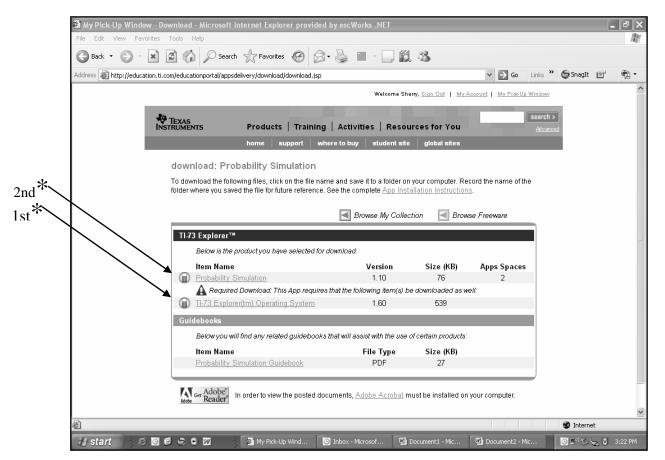


C. The registration/login process will begin at this point. Select **New User Registration** (*) or input **User Name** and **Password**. Personal information and an agreement with terms will follow for new users, as illustrated below (*). If a **Security Alert** window pops up click **YES**.

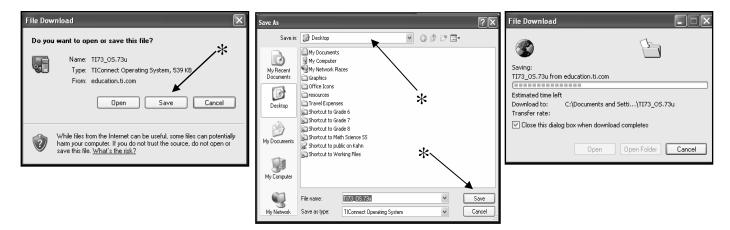
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		Preservice Student Principal	Administrator Student (must be 13 or older)	
		Calculator Software Developer	Other	
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 You will need to download the TI-73 Explorer(tm) Operating System first, followed by the Probability Simulation (*). For Example: TI-73 Explorer(tm) Operating System was selected first.

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3. Select the **TI-73 Explorer(tm) Operating System,** select **Save** (*), and save to the **Desktop**. Download will begin.



4. Once download is complete, minimize the window, My Pick-Up.... A TI Operating

ching Mathematics

System icon

will appear on the desktop.

5. Click and drag the **TI Operating System** icon <u>onto</u> the



6. A **OS Download Warning** will appear, click **OK**. (*Note: all applications on the calculator will be deleted when upgrading to the new operating system.*)

OS Downlo	ad Warning
Ŀ	Downloading an OS to your TI device will erase data that exists in your RAM. Warning: For the TI-89, TI-92+, and TI Voyage 200, all data including Applications will be deleted when upgrading to OS 2.08 or higher. Click OK to continue the transfer. Click Cancel to stop the transfer. Consult Help for details on backing up RAM, Archive, and Applications. OK Cancel

7. Transferring of the operating system to the TI-73 calculator will begin. While the operating system is transferring, the graphing calculator will read: Receiving Calculator Software. This process will take about 5 to 10 minutes. Once you have downloaded the operating system, the calculator will read: Validating Calculator Software followed by Graph Explorer Software 1.60 title screen.

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8. Maximize the window, **My Pick-Up**. Repeat steps 2-5 for downloading the **Probability Simulation**. If a **Document and Setting** window pops up click and **OK**, then restart download by selecting the **Probability Simulation** again.



9. Transferring of the **Probability Simulation APPS** will begin and the TI-73 calculator will read: Receiving Pro Sim APP. This process will take about 1 minute.

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PROB SIM	
File 1 of 1	
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10. Check to see if you have downloaded the **Probability Simulation APPS** correctly onto the calculator, by selecting the **APPS** key on the calculator. If the download was successful a new application titled **Prob Sim** will be in the list.



11. Drag to trash the **TI Operating System** and the **Probability Simulator** icon to the trash can and delete.



Technology Tutorial: TI-Interactive: The Big Question Presenter(s) Spreadsheet

Create a Presenter(s) Spreadsheet before starting the activity. This will enable the presenter(s) to flow between each group's data efficiently.

Advance Preparation

- Load TI-Interactive 1.3 software (will need to be purchased) onto computer: See TI-Interactive instructions manual.
- Load TI-Connect 1.5 software onto computer: See Loading TI Connect Technology Tutorial.

Create Presenter(s) Spreadsheet

- 1. Open TI-Interactive
- 2. In the toolbar select the **Spreadsheet** icon

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4. Starting with cell **A1** click and drag to the lower right-hand side of the spreadsheet until all cells are highlighted.

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5. In the tool under the **Format** menu select **Cells**.

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6. Set Alignment to Center and Number Format to General, select Apply and then OK.

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C OtherCurrency
OK Cancel Apply Help

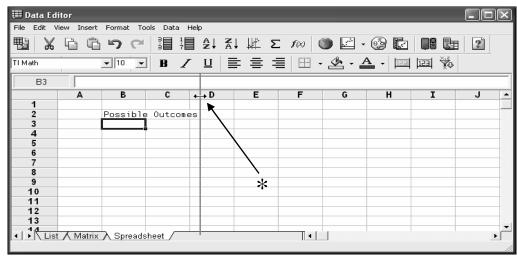
7. Click on cell **B2** and type in **Possible Outcomes**, then **Enter**. Continue until you have set up all labels and groups. Some columns may need to be resized; instructions for resizing are below illustration. *Note: if more than five groups are needed just include another column labeled accordingly. Also, if fewer than five groups participate in the activity, having extra columns set up will not affect the outcome of the calculations. It is better to have too many groups set up, than too few.*

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To resize column width or roll height: move curser into the column labels (or roll labels) when the curser changes from a pointer to a **two sided arrow** (*) and a **resizing line** appears, click and drag to the desired size.





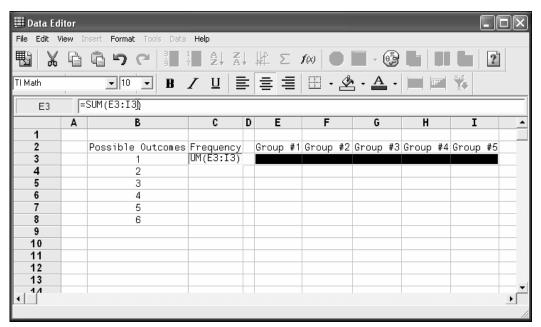
8. Click on cell C3, in the toolbar select Functions (f(x)).

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9. Scroll down to SUM, and then click OK.

Spreadsheet Functions
Function name:
ROWS SECOND SIGN SIN SIN SUN SUN SUN SUMIRA SUMIRA SUMIRA
SUM(number_list)
Returns the sum of the supplied numbers.
OK Cancel Help

10. Highlight cells **E3** to **I3**. *Note: There will be changes in the Sum formula as you highlight the cells.* Enter a close ()) parentheses and then **Enter**. *Also, the sum will be zero at this time.*



11. Repeat steps 9-11 for cells C4, C5, C6, C7, and C8 using the corresponding Group cells.

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12. Click on cell **B10**, and input label, **Total Trials**. Click in cell **B11** and use the sum formula to total the frequency column, this will require highlighting cells **C3-C8**. Enter a close ()) parentheses and then **Enter**

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2 Possible Outcomes Frequen 3 1 0	псу	Group #1	Group #2	Group #3	Group #4	Group #5	
3 1 0							
4 2 0 5 3 0 6 4 0 7 5 0							
5 3 0							
6 4 0							
7 5 0							
8 6 O							
10 Total Trials 11 =SUM(C3:C8							
11 =SUM(C3:C8							
12 13							
13							



13. Table with formatted cells.

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B11	=	SUM(C3:C8)									
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1											
2		Possible Outco	nes F	requency		Group #1	Group #2	Group #3	Group #4	Group #5	
3		1		0							
4 5		2		0							
5		3		0							
6		4		0							
7		5		0							
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14. Click on the C column. In the toolbar under the **Insert** menu select **Cells**. In the popup menu select **Shift cells right** and click **OK**.

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Insert new cell	(s)							0	En	ntire row	ų			Help
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15. Resize new column as explained in step 7, and input label **Experimental Probability**.

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1						
2		Possible Outcomes	Experimental Probability	Frequency	Group #1	Group #2
3		1		0		
4		2		0		
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6		4		0		
7		5		0		
8		6		0		
9						
10		Total Trials				
11		0				
12 13						

16. Click in cell C3. Enter = followed by clicking on cell D3, backslash and cell G14, and then Enter

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G1	14	=D3/G	314					
		Α	В	С	D	E F	G	•
1								
2			Possible Outcomes	Experimental Probability	Frequency	Group #1	Group #2	
3			1	=D3/G14	0			
4			2		0			
5			3		0			
6			4		0			
7			5		0			
8			6		0			
9								
10			Total Trials					
11			0					
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17. Repeat step 16 for cells C4, C5, C6, C7, and C8 using the appropriate corresponding cells.

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Note: Due to division by zero an error message will appear until data has been entered.

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9						
10		Total Trials				
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18. In the toolbar under the **File** menu select **Save To Document**. Save to the **Desktop** as **The Big Question**.

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File Edit View Insert Format Tools Save To Document Ctrl+S Save Image Edit Object Within Document Import • Export • Cancel •	Data Help Data Help Save As Save As Save in: Desktop My Documents Shortcut to Grade 7 My Computer Shortcut to Grade 8 My Network Places Shortcut to Math Science 55 Graphics Shortcut to Working Files resources Travel Expenses Shortcut to Grade 6
	File name: The Bif Question.tii Save as type: TI InterActive! Format Cancel



Technology Tutorial: TI-Interactive - The Big Question Graph

Create a Presenter(s) Spreadsheet before starting the activity. This will enable the presenter(s) to flow between each group's data efficiently.

Advance Preparation

• Create The Big Question Presenter(s) Spreadsheet using the Technology Tutorial: The Big Question Present(s) Spreadsheet.

Create Presenter(s) Graph

- 1. Open TI-Interactive: Middle School-Explore Explain 3 Spreadsheet.tii or The Big Question spreadsheet (if formatted by presenter.)
- 2. Double click on the graphic (*).

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	2	Possible Outcomes	Experimental Probability	Frequency	Group #1	Group #2	Group
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	5	3	#DIV/0!	0	1		
	6	4	#DIV/0!	0			
	7	5	#DIV/0!	0			
	8	6	#DIV/O!	0			
	9						
	10		Total Trials	0			
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		∧ Spreadsheet					•

3. Have one group at a time input their results for each outcome. Once two or three groups have inputted data, highlight the **Possible Outcomes** and **Experimental Probability** columns, by clicking on cell **B3** and dragging to cell **C8**. (If using TI-83 calculators, data may be collected using a linking device between the computer and a calculator. Steps for linking and importing data can be found at the end of this tutorial.)

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B3	1									
	A B		C			C	D F	G	Н	I
1										
2	Possible Outco	mes Exper	imental	Probabili	ty I	requency	Group #	fl Group #2	Group #3	Group #4
3	1		0.1			4	0	2	1	1
4	2		0.2			8	1	4	1	2
5	3		0.12	5		5	2	1	1	1
6	4		0.27	5		11	4	2	2	3
7	5		0.15	5		6	2	0	3	1
8	6		0.15	5		6	1	1	2	2
9										
10										
11			Total Ti	rials		40				
12										

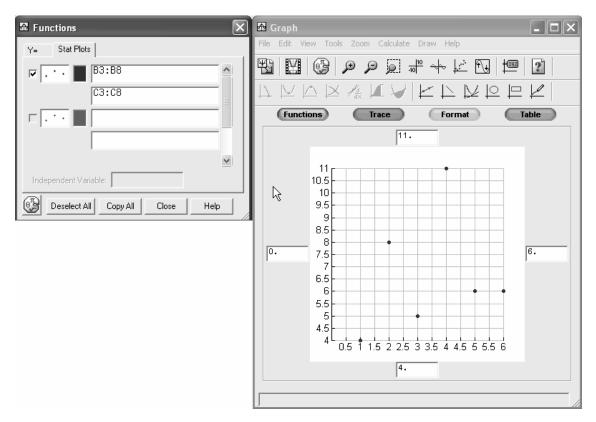
4. In the toolbar select the **Graph** icon I and the **Graph** icon may look different based on the last type of graph created. In the **Graph** menu select the **Y**= graph icon

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2 Possible Outcomes	Experimental Probabilit	y Frequ <mark>ency 1010</mark>	up #1 Group #2 Group #3
3 1	0.1	4	0 2 1

5. Notice the sample shows data plotted, and corresponding cell ranges set under **Stat Plots** in the **Functions** window.

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6. Reset point size by clicking on the **Point Selection Box**, and selecting **3** in the **Size** drop-down menu.

	🗗 Functions 🛛 🗙	()	Stat Plot Styles
*	Y= Stat Plots ■ ■ B3:B8 C3:C8		Plot Type: XY Scatter
	Independent Variable: Independent Variable: Image: Deselect All Copy All Close Help		Style: Veight: Color: Color: Mark Symbol: Size: 3 Color: Help OK 4

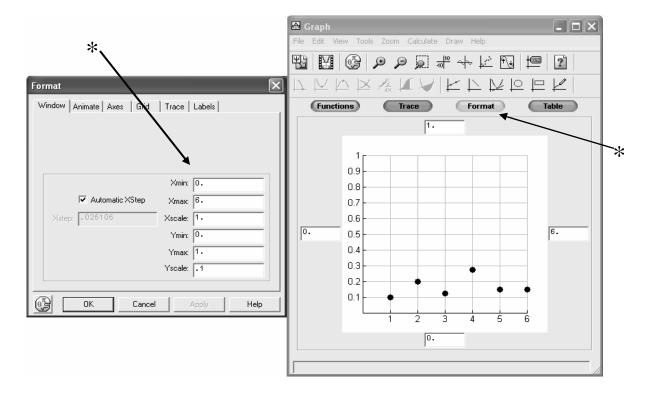


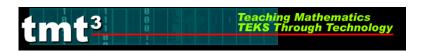
7. Reset point color by selecting **Black** in the **Color** drop-down menu.

🗗 Functions 🛛 🗙	Stat Plot Styles	
Y= Stat Plots ■ ■ B3:B8 C3:C8 ■	Plot Type: XY Scatter XList: B3:B8 YList: C3:C8 Use Frequency	*
Independent Variable Deselect All Basic colors: Basic colors: Custom colors: Define Custom Colors >>	Line Style: Veight: Color: Mark Symbol: Size: 3 C OK Cancel Help	
OK Cancel		

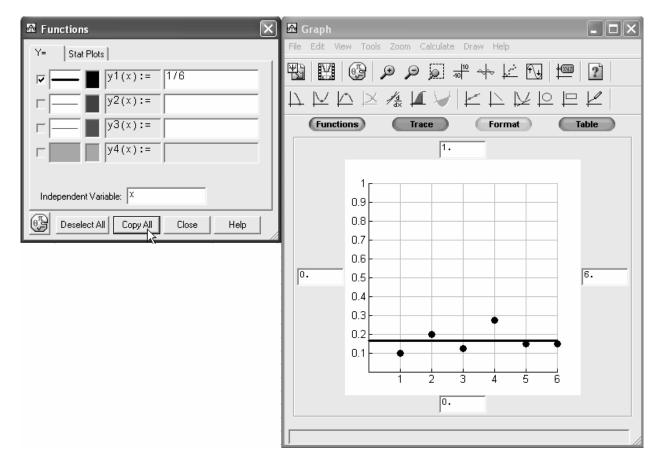


8. Click **Format** (*), under **Window** set the x- and y-axis minimums and maximums as shown, click **Apply**, and then **OK**.

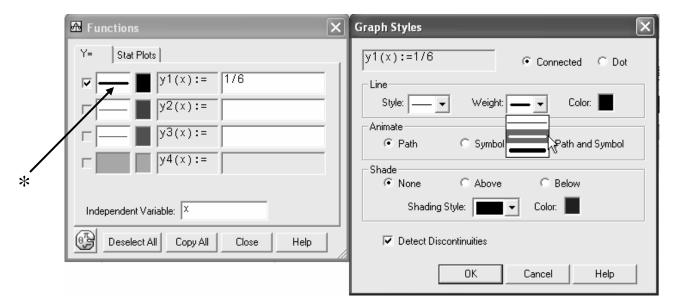


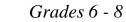


9. Under **Y**= in the **Function** window input the appropriate function. The leader notes for this activity discuss function.



10. Reset the line width by clicking on the **Line Selection Box**, and selecting **the second width choice** in the **Weight** drop-down menu.







11. Reset line color by selecting **Black** in the **Color** drop-down menu.

🕾 Functions	×	Graph Styles
Y= Stat Plots	1	y1(x):=1/6 Connected C Dot
✓ ✓ y1(x):= 1/6 ✓ ✓ y2(x):=		Line Style: Veight: Color:
y3(x):=		Animate
		Shade None C Above C Below
Independent Variable: Y		Shading Style: Color:
Color ?	<u>×</u>	Detect Discontinuities
		OK Cancel Help
Custom colors:	_	
Define Custom Colors >>		
OK Cancel		

- 12. Have another group input their data, continue process as classroom discussion continues
- 13. Close Middle School-Explore Explain 3 Spreadsheet.tii or The Big Question using the close box



Importing Data using a Linking Device

One at a time each group of participants will connect their calculator to the computer using a TI-Graph Link USB. Make sure the calculator in turned on, and at home screen.

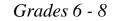
*Note: Graphic of tables may differ, but procedure is the same.

- 1. Open TI-Interactive: Middle School-Explore Explain 3 Spreadsheet.tii or The Big Question spreadsheet (if formatted by presenter.).
- 2. Double click on the graphic (*).

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		23	Possibl	e Outcomes 1	Frequency 0	r G	roup #1	Group #2	2 Group #3	Groups#4	Group #5	- P
		4		2	0							
		5		3	0							-81
		7		5	0							
		8		6	0							
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		11	Tota	l Trials								
		12 13		0								
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3. Select the **List** tab at bottom of spreadsheet.

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4. Select the Import TI Device Data icon on the Toolbar.

3



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Follow instruction and select the list that contains the data you intend to import. (Instructions will vary here depending on what type of calculator the participants use.)

5. Data will import into the appropriate list: In the example, data were in L1 of the calculator; therefore they were imported into L1 in the list editor.

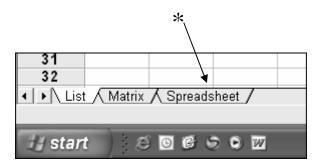
listname formula	L1 {}	L2 {}	L3 {}	L {
1	8			
2	5			
3	6			
4	8			
5	9			
6	<u>5</u>			
7				

6. Highlight data as shown above and select **Copy** in the **Edit** menu.

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	ronnac	List	Data
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8. Highlight the first cell under the appropriate Group, and select **Paste** under the **Edit** menu.

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	Go To Cel	I	Ctrl+G			0						
	7		5			0						
	8		6			0						
	9											

9. Data will be imported into the appropriate cells.

Group #1	Group	#2	Group	#3	Group	#4	Group	#5	Group	#6
8	l I									
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6										
8										
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The following is an example: participants may create a table and labels independent of this example. Therefore participants table and graph will vary.

Creating the Table

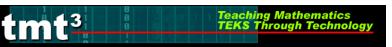
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- 1. Open an Excel 📈 document.
- 2. The following illustration is the product created in steps 3-7.

	А	В	С	D
1				
2				
3				
4		Different Outcomes	Frequency	
5		1		
6		2		
7		3		
8		4		
9		5		
10		6		
11				

3. Click on cell A1 and drag to cell D10.

	А	В	С	D	E	
1						
2						
3						
4		Different Outcomes	Frequency			
5						
6						
7						
8						
9						
10						
11						
12						
13						



4. In the toolbar under the **Format** menu, select **Cells**.

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:2	<u>F</u> ile	Edit	<u>V</u> iew	Insert	Forr	nat	<u>T</u> ools	Data	<u>W</u> indow	_ <u>H</u> elp
10	2		a 1	8 K	r	C <u>e</u> ll	s N		Ctrl+1	
:	1	12	6	13		<u>R</u> ov	, K		•	hanges
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5. Under the **Alignment** tab, use the pop-down menu under the Horizontal and Vertical text alignment to select Center. Select **Wrap Text** by clicking in the box under text control. Click **OK**.

Format Cells				?×
Number Alignment	Font	Border	Patterns	Protection
Text alignment			Orien	tation
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Text control				•
Wrap text				
Shrink to fit			0	Degrees
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Text direction:				
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			ОК	Cancel

6. Click cell **B4** and enter **Different Outcomes**, and click on **cell C4** and enter **Frequency**. If needed, adjust the size of the cells by clicking on the line to the left of the column and dragging the line left or right as needed. (Short cut: Use the down arrows on your keyboard to move down the column.)

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	C4	 <i>f</i>x 	Frequency	
	A	В	С	D
1				
2				
3				
4		Differenct Outcomes	Frequency	
5				
6				

7. Click on cell **B5** and enter 1, continue entering 2-6 in the cells below as illustrated.

	A	В	С	D
1				
23				
3				
		Differenct	Frequency	
4		Outcomes	Frequency	
5		1		
6		2		
7		3		
8		4		
9		5		
10		6		
11				

8. Table is complete and ready to input data from the **Group Activity Sheet: Simulation #1** frequency table. Input data using cells **C5-C10**. (*Example uses the data found in the leader notes.*)

	C10	 <i>f</i>x 	0	
	A	В	С	D
1				
2				
3				
		Differenct	Frequency	
4		Outcomes	Frequency	
5		1	2	
6		2	6	
7		3	1	
8		4	7	
9		5	4	_
10		6		
11				•



Creating the Graph

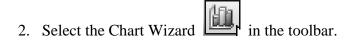
Participants may select the type of graphical representation of their choice; therefore, two possible types of graphs appear: **Bar Graph**, and **Pie Graph**. You may want to experiment with others.

More than one graph may be created and displayed side by side.

Bar Graph

1. Click and drag curser over the data to highlight. The example has cells **C5-C10** highlighted.

Differenct Outcomes	Frequency	
1	2	
2	6	
3	1	
4	7	
5	4	
6	0	



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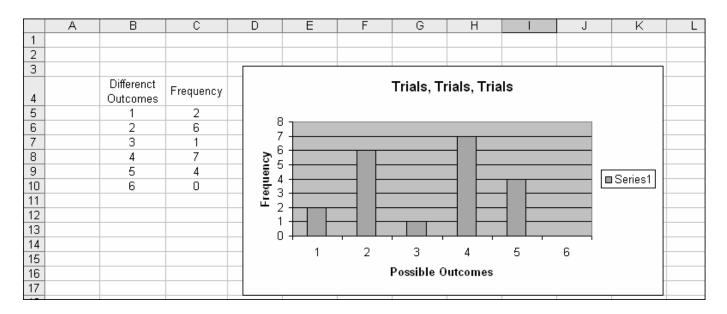


Step 1: Select the Column chart type, then click Next.
 Step 2: Since the data was highlighted first click Next.
 Step 3: Input a Chart tile (Trials, Trials, Trials), Categories (X) axis (Possible Outcomes), and Categories (Y) axis (Frequency), then click Next.
 Step 4: Select As object in, and then Finish.

Chart Wizard - Step 1 of 4 - Chart Type	Chart Wizard - Step 2 of 4 - Chart Source Data
Standard Types Custom Types	Data Range Series
Chart type: Column Bar Chart sub-type: Bar Chart sub-type: Chart su	Data range: Sheet 14:C:S:::C:10 Series in: Rows © Columns Cancel Cancel Einish
Chart Wizard - Step 3 of 4 - Chart Options	
Titles Axes Gridlines Legend Data Labels Data Table Chart title: Trials, Trials, Trials, Trials, Trials Trials, Trials, Trials Category (X) axis: 8	Chart Wizard - Step 4 of 4 - Chart Location
Titles Axes Gridlines Legend Data Labels Data Table Chart title: Trials, Trials, Trials Trials, Trials, Trials Category (X) axis: 8 Possible Outcomes 7 6 6	Chart Wizard - Step 4 of 4 - Chart Location Place chart: Image: Organ content of the state of the sta
Titles Axes Gridlines Legend Data Labels Data Table Chart title: Trials, Trials, Trials, Trials Trials, Trials, Trials, Trials Image: Category (X) axis: Image: Categ	Place chart:
Titles Axes Gridlines Legend Data Labels Data Table Chart title: Trials, Trials, Trials Trials, Trials, Trials, Trials, Trials, Trials Image: Category (X) axis: Imag	Place chart:



4. A graph will appear on the spreadsheet.





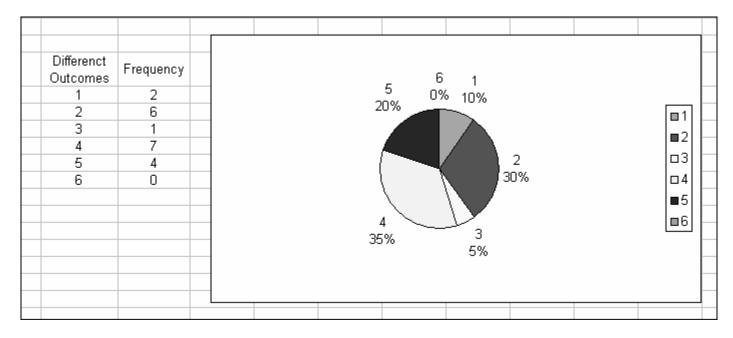
Pie Graph

- 1. Complete steps 1 and 2 of the Bar Graph on page 4.
- Step 1: Select the Pie chart type, and then click Next.
 Step 2: Since the data was highlighted first click Next.
 Step 3: Input a Chart tile (Trials, Trials, Trials), then select the Data Labels tab and check Category name, Percentage and click Next.
 Step 4: Select As object in, and then Finish.

Chart Wizard - Step 1 of 4 - Chart Type	Chart Wizard - Step 2 of 4 - Chart Source Data
Standard Types Custom Types	Data Range Series
Chart type: Column Bar Line VY (Scatter) Area Obughnut Radar Surface Bubble Pie. Displays the contribution of each value to a total.	Data range: Series in:
Press and Hold to View Sample	
Cancel < Back Next > Einish	Cancel < Back Next > N Einish
Chart Wizard - Step 3 of 4 - Chart Options	Chart Wizard - Step 3 of 4 - Chart Options
Titles Legend Data Labels	Titles Legend Data Labels
Chart title: Trials, Trials, Trials, Trials	Label Contains ☐ Series name Trials, Trials, Trials
Category (X) axis: Value (Y) axis: Second category (X) axis: Second value (Y) axis:	 ✓ Category name Y glue ✓ Percentage Bubble size Separator: Legend key ✓ Show leager lines
Cancel < <u>Back</u> <u>Next > </u> Einish	Cancel < Back Next > Finish
Chart Wizard - Step 4 of 4 - Chart Place chart: As new sheet: As new sheet: As object in: Cancel	t1



3. A graph will appear on the spreadsheet.



Technology Tutorial: TI-73: Trials, Trials, & More Trials Activity with APPS

Teaching Mathematics TEKS Through Techno

Notice there are two different sets of **Simulation Cards**. **The best scenario is to use Simulation Card Set 2 With APPS Program**. Card set 2 with APPS Program requires the **Probability Simulator APPS**, you can perform the activity without the simulator using Card Set 2 without APPS Program.

The following is an example: participants will generate different data independent of this example. Therefore participant's data and list will vary.

Advanced Preparation

Check all calculators for the **Probability Simulator APPS** by checking the APPS list for **Pro Sim**.



If the applications list does not contain the Probability Simulator APPS, then refer to the Technology Tutorial **Loading TI Probability Simulator APPS** and load the application software.

Trials, Trials, & More Trials with Probability Simulator

- 1. Press ON.
- 2. Press APPS.
- 3. Select the Probability Simulator, **Prob Sim.** Press **ENTER** twice.

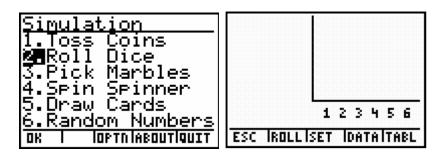




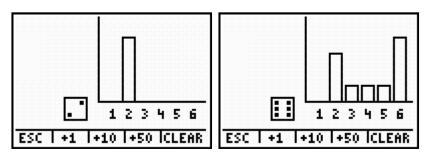
4. Follow the instructions below for each specific simulation.

Number Cube

A. Select **Roll Dice**. Press ENTER.

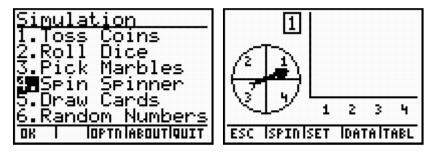


B. Press WINDOW which will activate the first roll of the die. Continue pressing WINDOW until you have recorded 10 rolls.



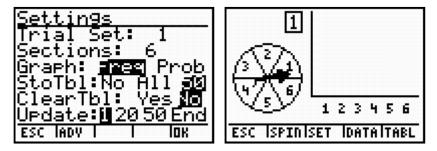
Spinner

A. Select **Roll Dice**. Press ENTER.

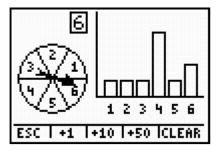




B. Press ZOOM to activate settings. Using the arrow keys: set **Sections** to 6 and **Graph** to Freq. Press **GRAPH**.



C. Press WINDOW which will activate the first spin. Continue pressing WINDOW until you have recorded 10 spins.



5. To quit Probability Simulation: Press Y=.

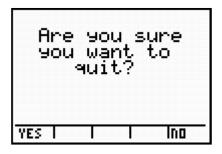
Return	to Menu
memor	ll clear als from 9. Are sure?
YESII	l Ino

6. Press Y=.

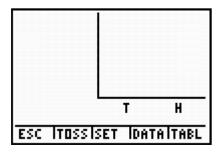
Simulation	23
1.Toss Coins 2.Roll Dice	
3.Pick Marbles	
4.Spin Spinner	
5.Draw Cards 6.Random Number:	
	₽ r



7. Press GRAPH.

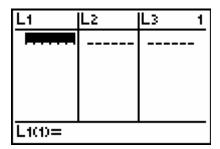


8. Press Y=.



Creating a Line Plot

- 1. Press ON.
- 2. Press LIST.

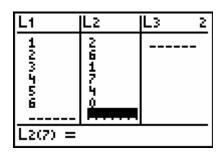


3. Input the possible outcomes into L1 (list 1), one at a time. Press ENTER each time.

L1	L2	L3 1	I
1			
3			
6			
L1(7) =			-

4. Curser over to L2 (list 2) using the arrow key ▶. Input the frequency of each possible outcome one at a time. Press ENTER each time. Record frequencies in the Groups Activity Sheet: Simulation #2 table. In this example: 2, 6, 1, 7, 4, 0 will be the frequencies of the six possible outcomes

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5. Press 2nd Y=.

LIN³

Succession allows WEPlot1Off	
L1 L2	•
2: <u>Pl</u> ot2Off	
3:Plot3…0ff	•
4↓PlotsOff	—

6. Select Stat Line. Press ENTER.



7. Using the curser keys and ENTER, select Plot 1 On, Type Line Plot, Xlist L1, and Ylist L2.

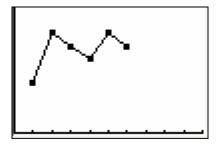
Plot1 Type: Xlist:	ወ ሔ	ff 器	데 윤··
Vlist: Mark:			



8. Press WINDOW. Set window using illustration.

WINDOW
Xmin=0
Xmax=10
X=.1063829787
Xsçl= <u>1</u>
Ymin=0
Ymax=10
Yscl=1

9. Press GRAPH.



- 10. To quit: Press 2nd MODE.
- 11. Press 2nd ON.

Technology Tutorial: TI-73: Trials, Trials, & More Trials Activity with No APPS

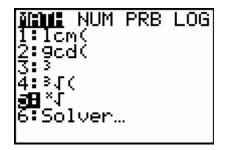
Teaching Mathematics TEKS Through Technol

Notice there are two different sets of **Simulation Cards**. **The best scenario is to use Simulation Card Set 2 With APPS Program**. Card set 2 with APPS Program requires the **Probability Simulator APPS**, the activity can be done without the simulator using Card Set 2 without APPS Program.

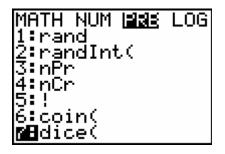
The following is an example: participants will generate different data independent of this example. Therefore participant's data and list will vary.

Trials, Trials, & More Trials with No Probability Simulator

- 1. Press ON.
- 2. Press MATH.



3. Curser over to the \square **PRB** menu using the \blacktriangleright key.

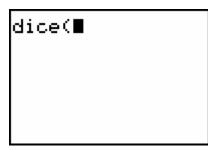


4. Follow the instruction below for each type of simulation.

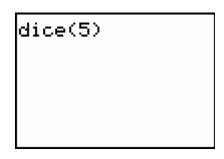


Number Cube

A. Select dice(. Press ENTER).



B. To simulate 5 rolls of a die: Enter 5).



C. Press ENTER, which will generate the first 5 rolls.

dice(5) (2 ∎	3	1	6	1)

D. Press ENTER, to generate the next 5 rolls.

dice(5) (2 dice(5) (1	3 4	1	6	1) 2)
	-	0	0	25

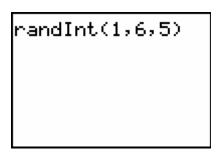


Number Generator

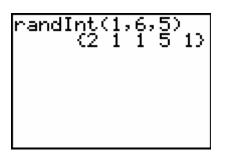
A. Select randInt(. Press ENTER).

MATH NUM <mark>1985</mark> 1:rand	LOG
MandInt(3:nPr	
3∶nFr ⊈iņCr	
4:nCr 5:! 6:coin(7:dice(
7:dice(

B. To generate 5 random integers between 1 and 6: Enter 1,6,5).



C. Press ENTER which will generate the first five numbers.



D. Press ENTER which will generate the next five numbers.

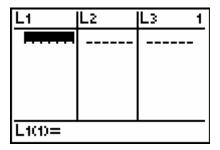
5. To quit: Press 2nd ON.

Creating a Line Plot

1. Press ON.

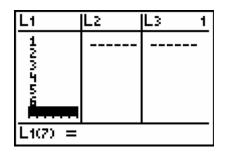
umt³

2. Press LIST.

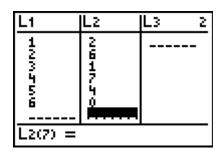


ching Mathematics

3. Input the possible outcomes into L1 (list 1), one at a time. Press ENTER each time.



4. Curser over to L2 (list 2) using the arrow key ▶. Input the frequency of each possible outcome one at a time. Press ENTER each time. Record frequencies in the Groups Activity Sheet: Simulation #2 table. In this example: 2, 6, 1, 7, 4, 0 will be the frequencies of the six possible outcomes



5. Press 2nd Y=.

5161 2002 18Plot1…Off	
🗠 L1 – L2	•
2:Plot20ff	
3: Plot30ff	
4↓PlotsOff	



6. Select Stat Plot 1. Press ENTER.



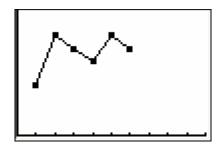
7. Using the curser keys and ENTER, select Plot 1 On, Type Line Plot, Xlist L1, and Ylist L2.



8. Press WINDOW. Set window using illustration.

WINDOW
Xmin=0
Xmax=10
⊿X=.1063829787…
Xscl=1
Ymin=0
Ymax=10
Yscl=1
1501-1

9. Press GRAPH.



10. To quit: Press 2nd MODE.

11. Press 2nd ON.