



Getting Started with TI-Nspire™ Navigator™ in Secondary Mathematics

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Materials for Workshop Participant*

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Student Login

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Objective

- Participants will learn how students log in to a TI-Nspire™ Navigator™ class.

TI-Nspire™ Navigator™ Features

- Logging in to the TI-Nspire™ Navigator™ System from a handheld

TI-Nspire™ Technology Skills:

- Logging in as a student






Tech Tips:

- Make sure the font size on your TI-Nspire handheld is set to Medium.

The TI-Nspire™ Navigator™ System uses both your computer and your students' handhelds. Your computer and your students' handhelds communicate through the TI-Nspire™ Navigator™ access point.

You do not have to log in to communicate with your students' handhelds; you can use the Transfer Tool to send or delete documents and/or operating systems on the students' handhelds. However, if you plan to use Quick Poll, Class Capture, Live Presenter, or place documents in the Portfolio during the TI-Nspire Navigator class session, then you must log in student handhelds to the TI-Nspire™ Navigator™ network.


- On the teacher computer, within the TI-Nspire™ Navigator™ Teacher Software, press Begin Class.
- Turn on the handheld that is connected to a wireless network adapter (or locked in the cradle). You will notice the following icons on the handheld in the upper right hand corner.

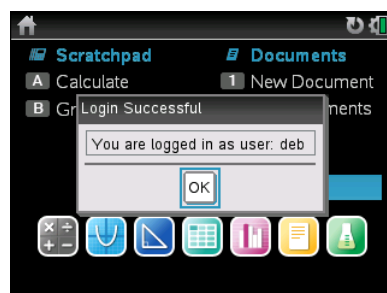
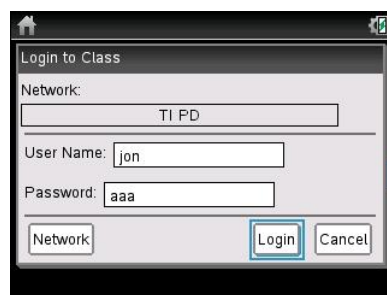
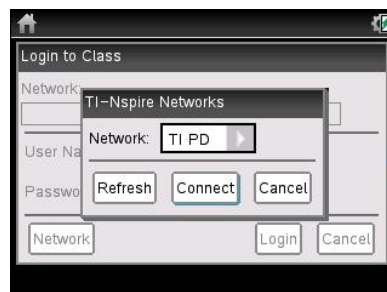
Icon	Status	Meaning
	Blinking	The handheld is searching for an access point.
	Solid with ✓	The handheld has found an access point.
	Solid	The handheld is not communicating with the wireless network adapter. Detach the handheld from the wireless adapter, wait for the icon to disappear, and then reattach the handheld to the adapter.
	Blinking	The handheld is connected to the network and is ready to log in.
	Solid	The handheld is logged in to the network and is fully charged.



Student Login

TI PROFESSIONAL DEVELOPMENT

3. When the  icon appears solid in the upper right-hand corner of the handheld, a "Login to Class" dialog box will appear.
 - If the dialog box does not appear, have students press **[on]** > **Settings > Login...**
4. When logging in for the first time, a network must be selected. Click the **Network** button, select the appropriate network from the Network drop-down field, and click **Connect**.
 - A network only needs to be selected once, not every time a handheld is logged in.
5. Students will first enter their User Name, press **[tab]**, and then enter their Password.
 - Passwords must be at least 3 characters. The teacher might have chosen the student password when setting up the class.
6. Press **[enter]**, and the "Login Successful" dialog box will appear on the handheld.





Growing Patterns

Student Activity

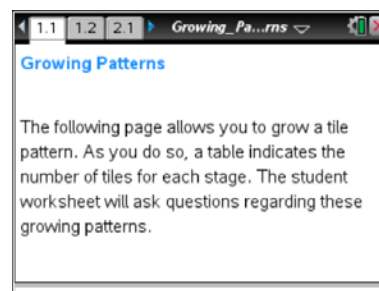


Name _____

Class _____

Open the TI-Nspire™ document *Growing_Patterns.tns*.

In this activity, you will explore growing patterns through pictures, graphs, and tables. You will represent these growing patterns algebraically.



Move to page 1.2.

1. On page 1.2, the first stage of a tile pattern is shown. Use the slider for stage, to 'grow' the pattern.
 - a. What remains the same **in the pattern**, and what changes as it grows?
 - b. In the table, what do the variables x and y represent?
 - c. What remains the same, and what changes **in the table** as the pattern grows?
 - d. In the graph, what do the x - and y - coordinates of the ordered pairs represent?
 - e. What remains the same, and what changes **in the graph** as the pattern grows?
2. On page 1.2, you are limited to showing 5 or fewer stages of growth for the pattern.
 - a. If the pattern continued to grow in the same way, draw the 6th stage, and determine the number of tiles needed.
 - b. How many tiles would be in the 10th stage? How do you know?
 - c. Write an algebraic rule to state the number of tiles in the x th stage.
 - d. Would there ever be a stage in which there were 58 tiles? Why or why not?



Growing Patterns

Student Activity



Name _____

Class _____

3. When you write the rule from part 2c as an equation in which, y , the number of tiles, is related to x , the stage number, you are writing y as a function of x .
 - a. Write the function that represents this pattern.
 - b. Check that your function is correct by typing it in the box after “ $y=$ ”. Select enter. How can you tell if your rule is correct or incorrect by looking at the table and graph?



Tech Tip: To modify the text on screen, double-tap the text and the keyboard will open.

- c. If your rule was correct, move on to Question 3d. If your rule was incorrect, find a new rule to relate the stage number and number of tiles. Check your rule.
 - d. The growth rate of the pattern is the change in the amount of tiles needed per stage. What is the growth rate for this pattern?
 - e. Where does the growth rate appear in the function? In the table? In the graph?
 - f. Move to stage zero. Where does the number of tiles in this stage show up in your function? In the growing pattern? In the graph?

Move to page 2.2.

4. On page 2.2, use the slider for stage to grow a second pattern. Determine the growth rate, and write a function that represents the number of tiles in relation to the stage number.

Move to page 3.2.

5. On page 3.2, use the slider for stage to grow a third pattern. Determine the growth rate, and write a function that represents the number of tiles in relation to the stage number.
6. Design a pattern that grows at a constant rate but more quickly than all of the previous patterns. Draw the first 4 stages of your pattern, and write a function that represents the number of tiles in relation to the stage number.



The Calculator Application

TI PROFESSIONAL DEVELOPMENT

Activity Overview

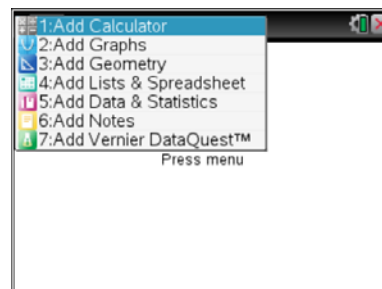
This activity explores various menus and templates available in the Calculator application.

Step 1:

Press **on**, and select **New Document** to start a new document. Choose **Add Calculator**.

Note: To add a new Calculator page to an existing document, press **ctrl** **doc** and choose **Add Calculator**.

Alternatively, press **on** and select **+/-**.

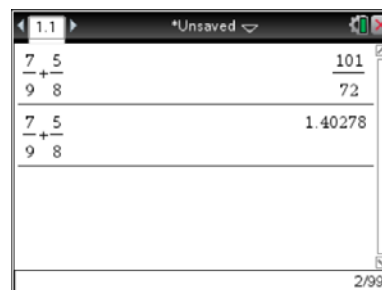


Tech Tip: To adjust the screen contrast, hold down the **ctrl** key and press **+** repeatedly to darken or **-** repeatedly to lighten the screen. Many of the traditional shortcuts used with computer software are available on a TI-Nspire™ handheld. For example, **ctrl** **Z** and **ctrl** **Y** are used to “undo” and “redo” actions, respectively.

Step 2:

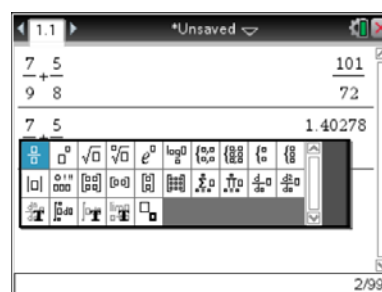
Determine the sum of two fractions. Type **7** **÷** **9** **+** **5** **÷** **8**.

Press **enter**. To display the result in decimal form, press **ctrl** **enter**.



Step 3:

To enter a fraction using the fraction template, press **on** to access the math templates. Select the fraction template.

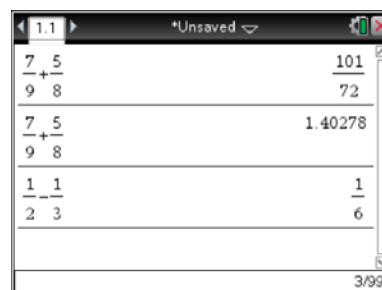


Step 4:

Enter the numerator and denominator values. Use the down arrow key on the Touchpad or press **tab** to move from numerator to denominator. Press the right arrow key on the Touchpad to move the cursor to the right of the fraction template.

Press **+** or **-**. From the templates, select the fraction template again. Enter the numerator and denominator, and press **enter**.

Note: The fraction template can also be accessed by pressing **ctrl** **÷**.





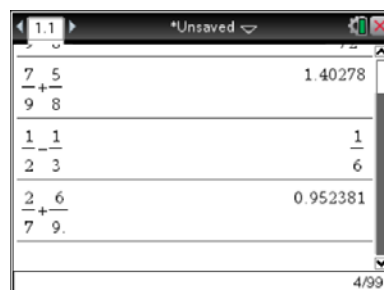
The Calculator Application

TI PROFESSIONAL DEVELOPMENT

Step 5:

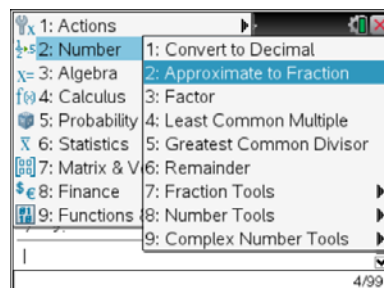
Enter another operation that includes fractions but add a decimal after any numerator or denominator value. The result is in decimal form.

Note: The default Display Digits setting is Float 6.



Step 6:

To convert the decimal to a fraction, select **Menu > Number > Approximate to Fraction**, and press **enter**.

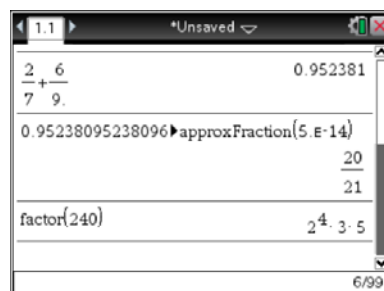


Step 7:

Find the factors of 240 by selecting **Menu > Number > Factor**. Type the number, and press **enter**.

Note: The **Least Common Multiple** and **Greatest Common Divisor** commands are also located in the Number menu.

Note: When using TI-Nspire™ CAS technology, the **factor** command can also be used to factor algebraic expressions.

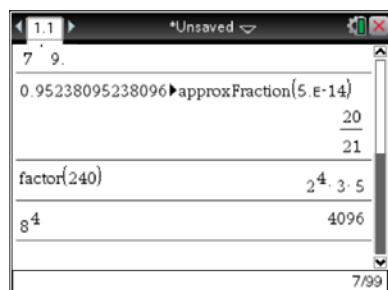


Step 8:

To raise a number to a power, first enter the base. Press **^**, and enter the exponent. Press **enter**.

Note: The cursor is still in the exponent template after the exponent has been entered. Press the right arrow key on the Touchpad to move the cursor out of the exponent template.

Note: The exponent template is also located in the math templates.

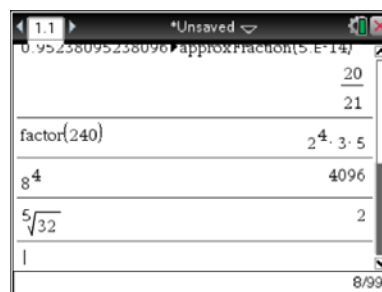


The Calculator Application TI PROFESSIONAL DEVELOPMENT

Step 9:

To determine the root of a number, press **ctrl** **x²** for the square root or **ctrl** **^** for the n th root.

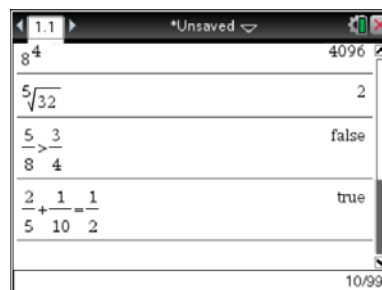
Note: The square root and n th root templates are also located in the math templates.



Step 10:

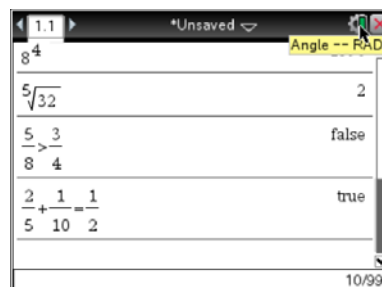
To check the truth value of a statement, enter the statement, and then press **enter**.

Note: To access the inequality symbols, press **ctrl** **=**.



Step 11:

Move the cursor over the icon to the left of the **X** in the upper-right corner of the screen to display the Angle setting. The current Angle setting is Radian.

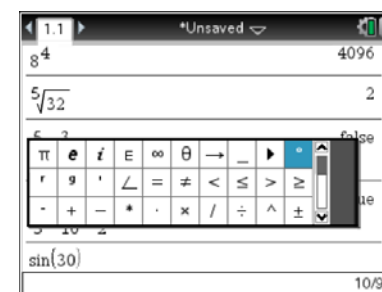


Step 12:

A trigonometric ratio of an angle value given in degrees can be calculated without changing the Angle setting to degrees.

Press **trig** to access the trigonometric ratios, and select the required ratio using the Touchpad. After entering the angle to be evaluated, press **ctrl** **Ⓢ** to access the symbol palette. Select the degree symbol and then press **enter**. Press **enter** again to evaluate the expression.

Note: When using TI-Nspire CAS technology, the result will appear in exact form.





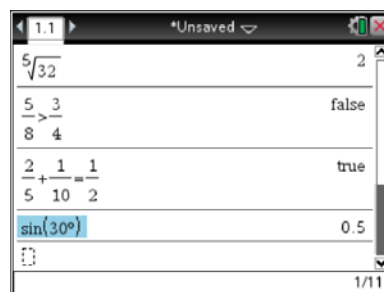
The Calculator Application

TI PROFESSIONAL DEVELOPMENT

Step 13:

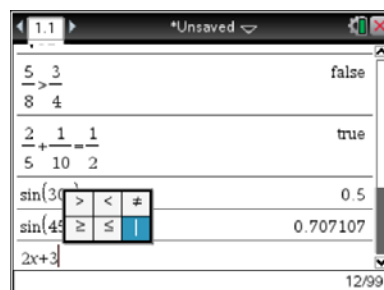
To copy and paste a previous operation or result to the current entry line, press \blacktriangle on the Touchpad until the operation or result is highlighted.

Press **enter** to paste the chosen operation or result (in this example, $\sin(30^\circ)$) into the current entry line. Edit as needed, and press **enter** to execute the new operation.

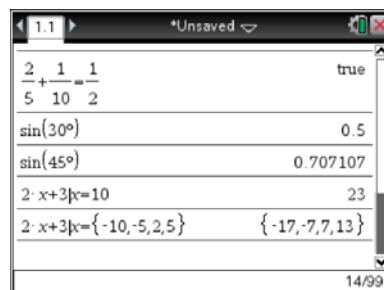


Step 14:

To check an answer to an equation or to evaluate an expression, use the “such that” operator. Press **ctrl** **=** to access the operator.



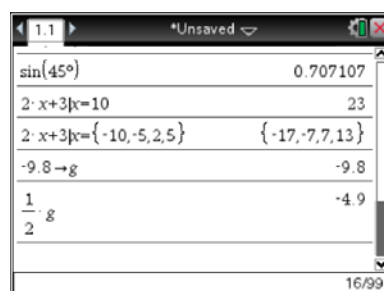
Note: To access the curly brackets, press **ctrl** **)**.



Step 15:

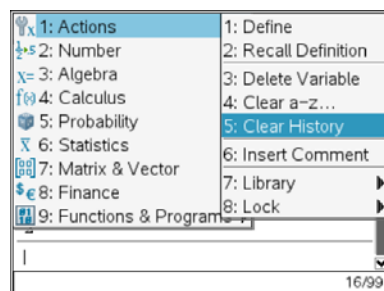
To store a value to a variable, enter the value and press **ctrl** **var** (store). Type the variable name and press **enter**.

The variable may now be used in computations and is accessed by typing the name of the variable or by pressing **var** and selecting the variable name.



Step 16:

The **xx/99** displayed in the lower-right corner of the screen is the number of entry lines in the history of the Calculator application that have been executed out of a possible 99 lines of history. To clear the screen and the history, select **Menu > Actions > Clear History**.





Demonstration – Formative Assessment

TI PROFESSIONAL DEVELOPMENT

Objective

- Demonstrate sending, collecting, and saving a TI-Nspire™ document with questions.

TI-Nspire™ Navigator™ Features

- Sending a document
- Auto-Refresh of Class Capture
- Collecting a document
- Viewing class results
- Saving to Portfolio

TI-Nspire™ Technology Skills:

- Logging into the TI-Nspire Navigator system
- Opening a TI-Nspire document
- Navigating a TI-Nspire document
- Answering questions in a TI-Nspire document

Assessment Activity

Participants will be students in a classroom with a TI-Nspire™ Navigator™ System. ‘Students’ are asked a series of questions in a TI-Nspire document. The ‘teacher,’ your instructor, will use the Class Capture feature to monitor students’ progress through the assessment.

When all students have completed the assessment, the teacher will collect the questions and immediately review the results with the class. After class, the teacher can compare the results to previous questions asked on an earlier day to monitor learning over a period of time.

This is a demonstration activity. You will have the opportunity to perform all the TI-Navigator tasks in subsequent activities in the workshop.

Notes for Today’s Activity

These notes provide an overview of the activity, but they are not intended to describe all of the steps performed by the ‘teacher’ and ‘students.’

1. The teacher will start class and open the document *Demo_FA_Math.tns*, *Demo_FA_MG_Science.tns*, or *Demo_FA_HS_Science.tns*.
2. Students log in to the class. One participant will wait and play the role of a student who comes to class late.
3. The teacher sends the document to the class.
4. The teacher monitors the documents being sent to the class.
5. The teacher uses Class Capture of the entire class to assist students in opening the document.
6. The teacher might use Live Presenter to review navigation of a document and answering questions.
7. The teacher will ask the “late student” to log in to the class. Note: The “late student” still receives the document and can begin working.



Demonstration – Formative Assessment

TI PROFESSIONAL DEVELOPMENT

8. The teacher uses the Auto-Refresh feature of Class Capture to monitor the progress of the class.
9. Ask students to press ctrl ▲ when they are finished. This makes it easy for the teacher to know when students have completed their assessment because all of the screens will be the same.

Discussion Questions/Points:

- Why did the teacher Class Capture the entire class? Class Capture will ensure that late students will be part of the Class Capture when they log in to the class, assuming that Auto-Refresh is used.
- Why is Auto-Refresh useful? Students work at different rates. Class Capture with Auto-Refresh allows the teacher to monitor students as the class progresses.
- Once a student finishes an assignment, what types of additional tasks can be assigned to keep the student engaged? One reason that students sometimes become discipline problems is that they have finished their work. If the teacher knows which students are finished with their work, they can be given another task while waiting for the rest of the class.

10. When all students are finished, the teacher will discuss the types of questions that were included in the assessment and which ones can be graded automatically by the system.
11. The teacher will collect the document using one of two methods: Click the **Collect from Class** icon, or right-click on the document name in the Class Record.
 - The “Collect from Class” method has the option to delete the file after collection.
 - Using the right-click method does not include the option to delete the file, but it can be deleted later by selecting the **Delete from Class** icon.
12. The teacher can show the results in the Review workspace by right-clicking on the collection of the document in the Class Record.
 - The Page Sorter view in the Documents Toolbox allows navigation of the document and class results.
 - Correct answers appear in GREEN. If an answer is marked incorrectly, it can be adjusted.
 - Questions that aren’t auto-graded can be graded when viewing the results with the class.
13. Save the collected results to the Portfolio by right-clicking on the document in the Class Record.

Discussion Question:

- Why would you want to save the document to the Portfolio? Saving to the Portfolio allows the teacher to compare student results with previous work by the student to monitor improvement in student understanding.



The Graphs Application – Part One

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Activity Overview

In this activity, you will graph a function, display a table of values for a function, transform a function, graph an equation using a template, change the window settings, and graph a vertical line.

Part One—Graphing a Linear Function and Displaying a Table

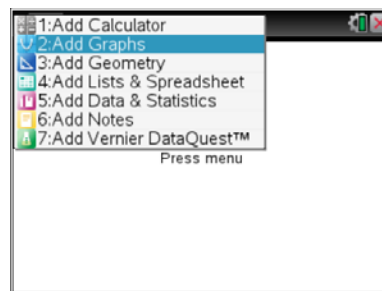
Step 1:

Press , and select **New Document** to start a new document.

Step 2:

Choose **Add Graphs**.

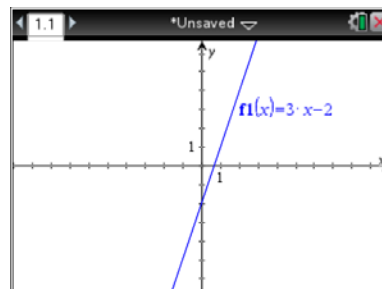
Note: To add a new Graphs page to an existing document, press and choose **Add Graphs**. Alternatively, press and select .



Step 3:

The cursor will be in the entry line at the bottom of the screen, to the right of $f1(x) =$. To graph $f1(x) = 3x - 2$, type in $3x - 2$ by pressing .

Teacher Tip: Before they press , ask students to predict the shape of the graph.



Press to graph.


Note: If desired, the function definition (label) may be moved to another location on the screen. Move the cursor to hover over the function label. When the word **label** appears, press to grab the label. Use the Touchpad to move the label. Press or to “drop” the label.

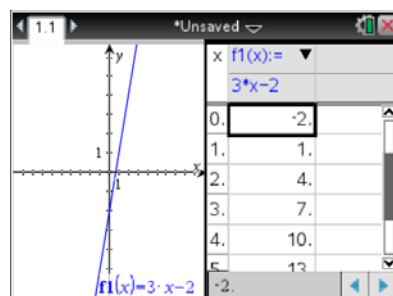
Note: The entry line disappeared when you pressed to graph the function. To display the entry line, press or . The cursor will appear in the next empty entry line, in this case $f2(x)$. To view or edit $f1(x)$, press on the Touchpad.

The Graphs Application – Part One TI PROFESSIONAL DEVELOPMENT

Step 4:

To insert a table of values, press **ctrl** **T**. The table will be inserted to the right of the graph. You can navigate within the table to view the function value for a specific value of x .

Note: The dark rectangle around the table indicates that the application is active. To move from one application work area to another, press **ctrl** **tab** or use the Touchpad and press  to select the desired application.



Step 5:

The table settings may be changed. Ensure you are on the table side of the page, and select **Menu > Table > Edit Table Settings**. Edit the settings as desired. Press **enter** or click **OK**.






Step 6:

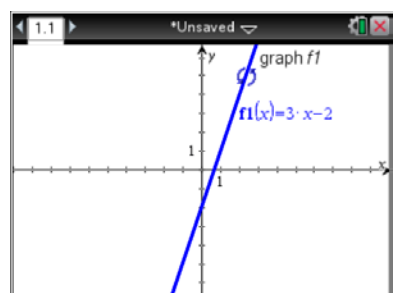
To hide the table, press **ctrl** **T**. Alternatively, press **Menu > Table > Remove Table**.

Part Two – Transforming Linear and Quadratic Functions




Step 7:

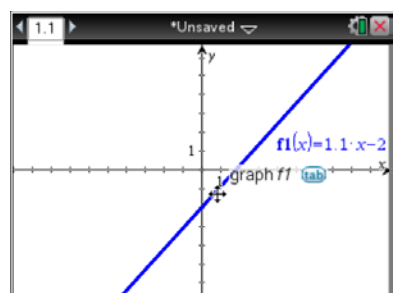
Move the cursor near the graph of the function. As the cursor moves towards certain regions of the graph, two different tools—the **Rotation** tool and the **Translation** tool—will be displayed.

To rotate the line, move the cursor to the graph of the line near the edge of the graph screen. When the rotation symbol () appears, press **ctrl**  to grab the line. Use the Touchpad to rotate the graph. When finished, press  or **esc**.



Step 8:

To translate the line, move the cursor to the graph of the line in the center of the screen. When the translation symbol () appears, press **ctrl**  to grab the line. Use the Touchpad to translate the graph. When finished, press  or **esc**.



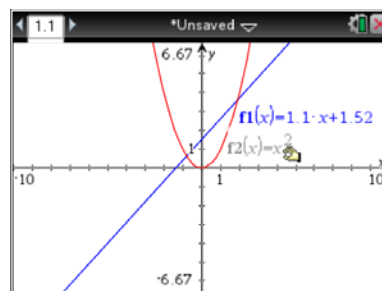
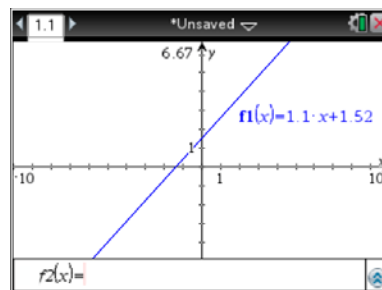
The Graphs Application – Part One TI PROFESSIONAL DEVELOPMENT

Step 9:



Open the entry line by pressing **ctrl** **G** or **tab**. The cursor will appear in the next empty entry line, in this case $f2(x)$.

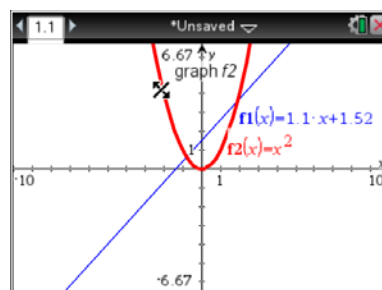
Graph $f2(x) = x^2$ by pressing **X** **^** **2**. Press **enter** to graph.

Note: The function labels may be overlapping. Move one or both of the function labels to an appropriate location on the screen.





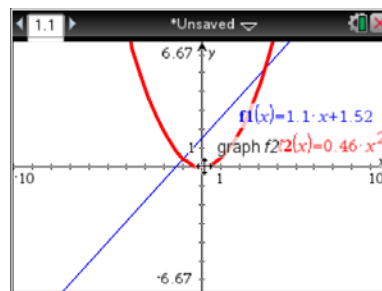
Step 10:

To dilate the parabola, move the cursor to the one of the arms of the parabola. When the dilation symbol (\propto) appears, press **ctrl**  to grab the parabola. Use the Touchpad to dilate the graph. When finished, press  or **esc**.



Step 11:

To translate the parabola, move the cursor to the vertex of the parabola. When the translation symbol (\updownarrow) appears, press **ctrl**  to grab the parabola. Use the Touchpad to translate the graph. When finished, press  or **esc**.

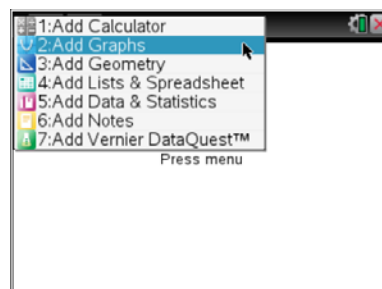


Part Three – Graphing an Equation Using a Template

Step 12:

Insert a new page by pressing **ctrl** **doc**. Select **Add Graphs**.

Note: The cursor will be in the entry line at the bottom of the screen. Since $f1(x)$ and $f2(x)$ contain the functions graphed on the previous page, $f3(x)$ appears.





The Graphs Application – Part One

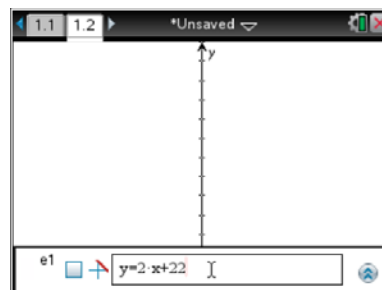
TI PROFESSIONAL DEVELOPMENT

Step 13:

To graph a line in $y = mx + b$ form, select **Menu > Graph**

Entry/Edit > Equation > Line > $y = m \cdot x + b$. To graph $y = 2x + 22$, press **[2]** **[tab]** **[2]** **[2]** and then press **[enter]**.

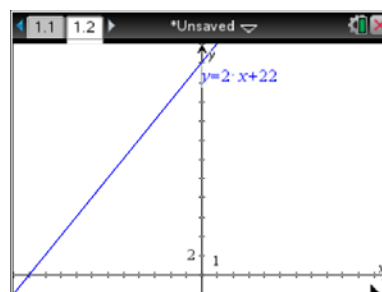
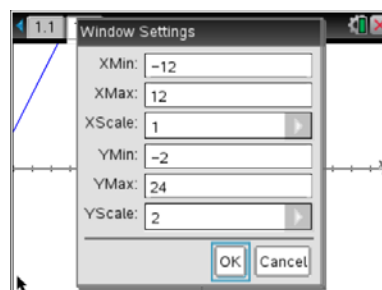
Note: You can translate and rotate the line in the same manner as described earlier in the activity.



Step 14:

To change the graphing window, select **Menu > Window/Zoom > Window Settings**. Press **[tab]** to move to the next field and enter the new value to overwrite the current one. Modify the window settings to match the values shown at right.

To view the graph in the new graphing window, press **[enter]** or click **OK** when done.



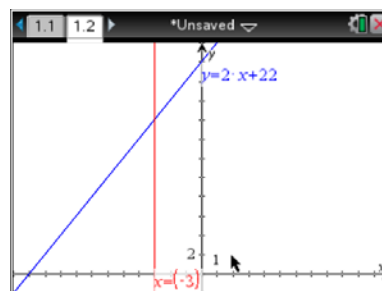
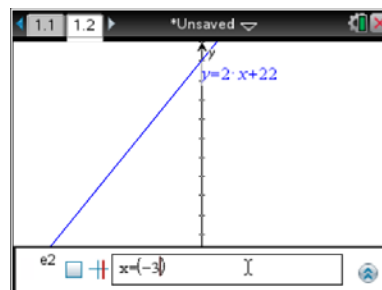
Part Four – Graphing a Vertical Line

Step 15:

To graph a vertical line, select **Menu > Graph Entry/Edit > Equation > Line > $x = c$.** To graph $x = -3$, press **[(-)]** **[3]** and then press **[enter]**.

Note: You can translate a vertical line in the same manner as described earlier in the activity.

Note: To return to function graphing, select **Menu > Graph Entry/Edit > Function**.



The Graphs Application – Part Two TI PROFESSIONAL DEVELOPMENT

Activity Overview

In this activity, you will graph two functions and explore various methods for finding points of intersection. You will also graph a conic section and an inequality.





Part One – Graphing Two Linear Functions and Tracing to Finding the Intersection

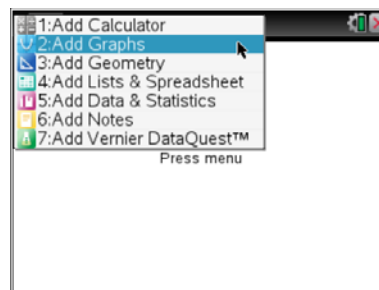
Step 1:

Press  and select **New Document** to start a new document.







Step 2:

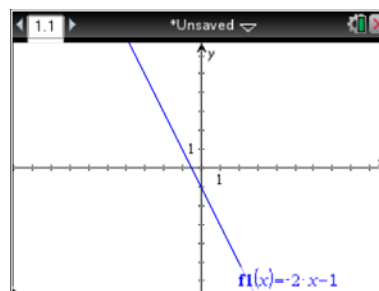
Choose **Add Graphs**.

Note: To add a new Graphs page to an existing document, press   and choose **Add Graphs**. Alternatively, you can press  and select .












Step 3:



The cursor will be in the entry line at the bottom of the screen to the right of $f1(x) =$. To graph $f(x) = -2x - 1$, press     , and then press .

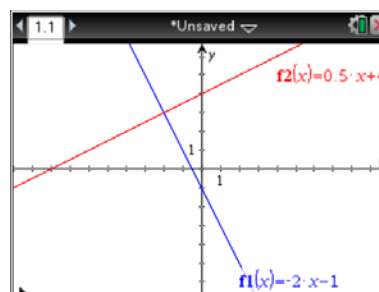


Step 4:

To graph $f(x) = 0.5x + 4$, first press  to view the entry line. Alternatively, press   to display the entry line.

The cursor will now be to the right of $f2(x) =$. Press     , and then press  to graph the function.

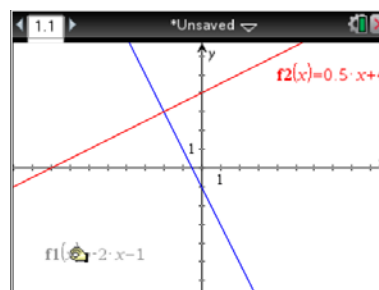
Note: To graph multiple functions without closing the entry line, press  after entering a function definition. After entering the last function definition, press .



Step 5:

Drag the label for $f1(x)$ to the lower-left corner of the screen.

Note: The label is moved to prepare for the next step. When **Trace** is selected, the coordinates of the trace point(s) are displayed in the lower-right corner of the screen.



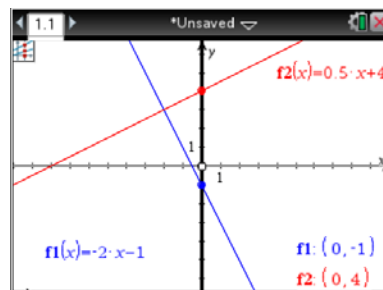


The Graphs Application – Part Two

TI PROFESSIONAL DEVELOPMENT

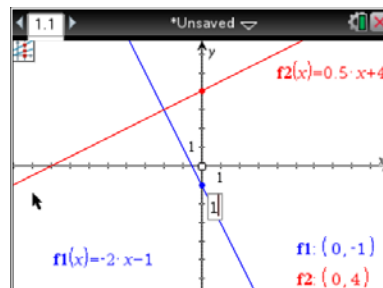
Step 6:

To trace and display function values for multiple graphed functions, select **Menu > Trace > Trace All**. To trace on the functions, press the left or right arrow key on the Touchpad.

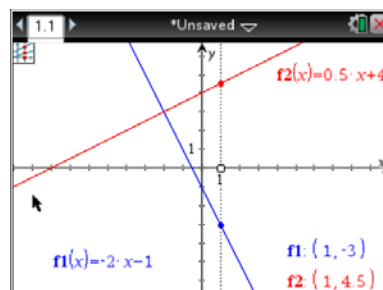


Step 7:

When the **Trace** tool is active, function values for a particular value of x may be displayed. Type a value for x (the number 1 was chosen for this example) and then press **enter** to display the function values at that value of x .

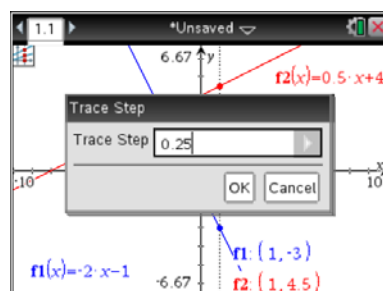


Note: If a value for x outside of the window settings is entered while tracing, the window will readjust for that particular x -value. The minimum and maximum y -values for the window may need to be adjusted. To return to the standard window, select **Menu > Window / Zoom > Zoom – Standard**. Return to the Trace tool by selecting **Menu > Trace > Trace All**.



Step 8:

To change the trace step, press **Menu > Trace > Trace Step**. Press the arrow to the right of the word **Automatic** and select **Enter Value**. Enter a value for **Trace Step** (0.25 for this example) and then press **enter**.

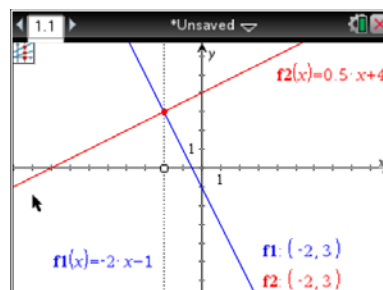


Note: After the trace step has been changed, the value of x may still be changed as described in Step 7.

Step 9:

Trace until the point of intersection is located.

To exit the **Trace** tool, press **esc**.



The Graphs Application – Part Two TI PROFESSIONAL DEVELOPMENT

Part Two – Finding Points of Intersection Using the Intersection Point(s) Tool

Step 10:

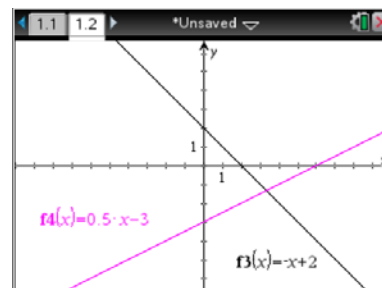
Press **ctrl** **I** or **ctrl** **doc** to insert a new page in the document.

Select **Add Graphs**. Note that this is page 1.2—problem 1, page 2.




Note: The entry line displays $f3(x)$ = since $f3$ is the next available function in this problem.

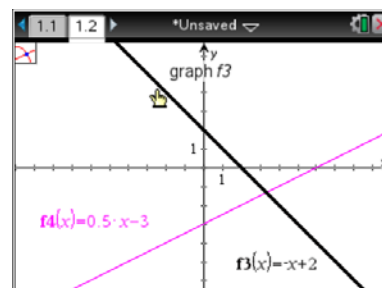
Step 11:

Graph any two linear functions whose point of intersection will be displayed in the current window. Move the function labels, as needed.



Step 12:

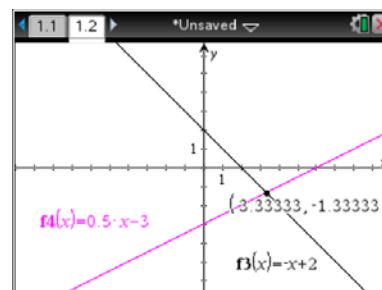
Select **Menu > Geometry > Points & Lines > Intersection Point(s)**. Using the Touchpad, move the **Pointer** tool, , to the graph of one of the functions, and press  to select the function. Move the **Pointer** tool to the second function and press  to select the second function.



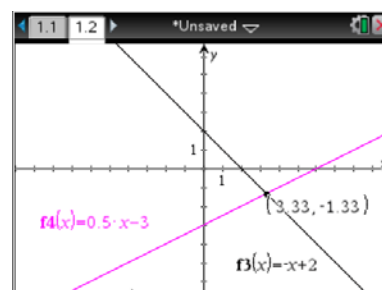
The point of intersection and its coordinates are displayed.

To exit the **Intersection Point(s)** tool, press **esc**.

Note: To change the number of digits displayed, you can hover over the x - and/or y -coordinate and press **-** to reduce the number of digits displayed or **+** to increase the number of digits displayed.



Note: Alternatively, select **Menu > Settings** to change the display digits or other settings in the Graphs page.

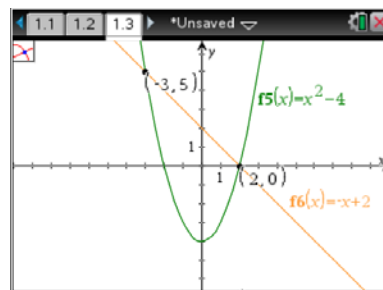




The Graphs Application – Part Two

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Note: Use **Points & Lines > Intersection Point(s)** to determine multiple points of intersection. After the functions are graphed, select **Menu > Geometry > Points & Lines > Intersection Point(s)**. Press to select the graph of one of the functions. Move the **Pointer** tool to the second graph and press to select the second function. Both intersection points as well as the coordinates are displayed.



Part Three – Finding a Point of Intersection Using the Analyze Graph Menu

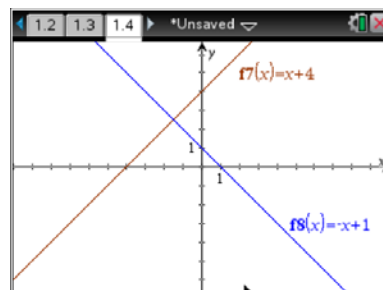
Step 13:

Press or to insert a new page in the document.

Select **Add Graphs**.

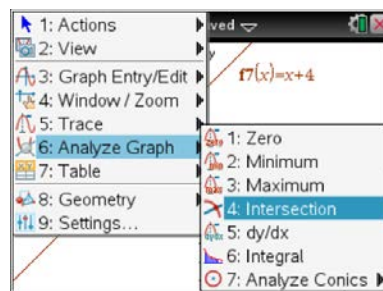
Step 14:

Graph any two functions whose point of intersection will be displayed in the current window. Move the function labels, as needed.



Step 15:

Select **Menu > Analyze Graph > Intersection**.

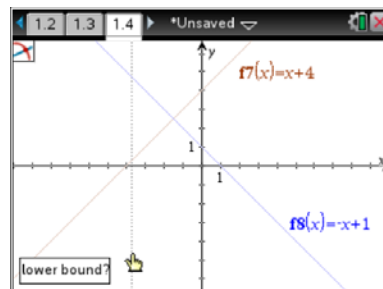


Step 16:

To display the coordinates of the intersection point, the point must be highlighted by selecting a lower and upper bound.

Set the lower bound by moving the **Pointer** tool to the left of the point of intersection. The message “**lower bound?**” is displayed.


Press to set the lower bound.



The Graphs Application – Part Two TI PROFESSIONAL DEVELOPMENT

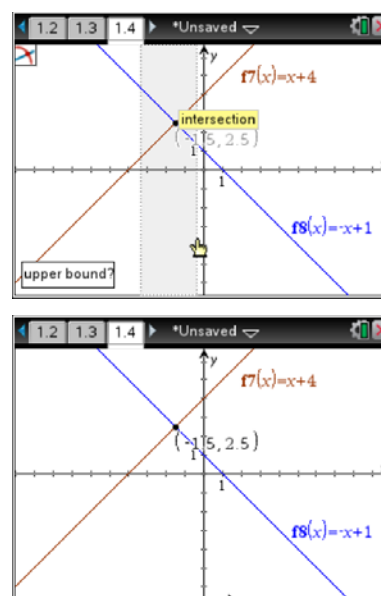
Step 17:

To set the upper bound, first move the **Pointer** tool to the right of the intersection point. The point of intersection will appear if the upper bound is to the right of the intersection point.

Press  to set the upper bound.

Note: Once the point of intersection is found, the **Pointer** tool is off.

Note: If you translate or rotate one or both of the functions, the point of intersection will be updated for the new function(s).




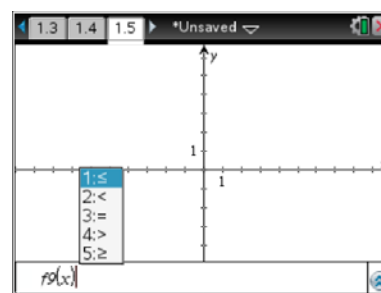
Part Four – Graphing an Inequality

Step 18:

Press   or   to insert a new page in the document. Select **Add Graphs**.

Step 19:

The cursor will be in the entry line at the bottom of the screen to the right of $f9(x) =$. Press  to delete the equals sign. When the equals sign is deleted, a dialog box appears with inequality symbols and the equals sign.







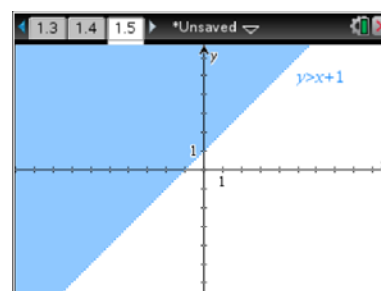
Step 20:

Select **>** from the dialog box.

Note: When an inequality symbol is selected, $f9(x)$ changes to y since a relationship is to be graphed rather than a function.

Step 21:

Press    and then press  to view the graph of the inequality $y > x + 1$.

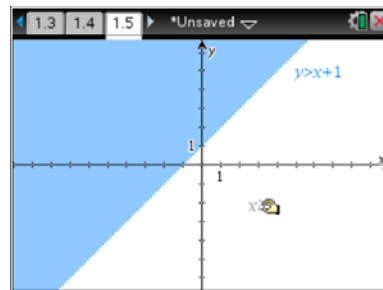


**Step 22:**

To graph a vertical inequality, select **Menu > Actions > Text**.

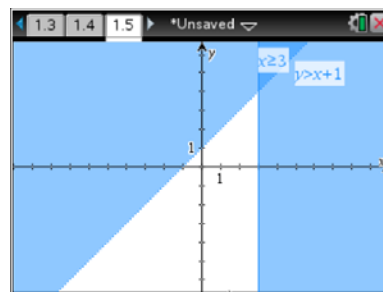
Create the text box by clicking anywhere on screen. To graph the inequality $x \geq 3$, press **X** **ctrl** **=** (select the \geq symbol) **3**, and then press **enter**. Then press **esc** to exit the Text tool.

Note: Alternatively, create a text box by pressing **ctrl** **menu** and selecting **Text** from the context menu.

**Step 23:**

Grab and drag the text to either the x- or y-axis. The inequality will appear when the text is placed on an axis. Press to drop the text box and graph the inequality.

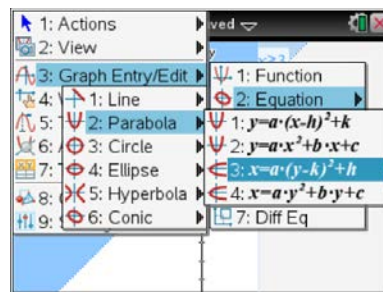
Note: To change the color of a region, move the cursor to the inequality boundary, press **ctrl** **menu** and select **Color > Fill Color**. Select the desired color and press **enter** or . The color of the boundary line may be changed by pressing **ctrl** **menu** and selecting **Color > Line Color**.

**Part Five – Graphing a Conic****Step 24:**

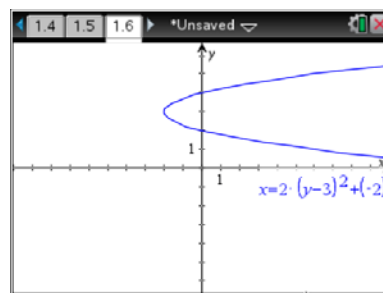
Press **ctrl** **I** or **ctrl** **doc** to insert a new page in the document. Select **Add Graphs**.

To graph a conic, press **Menu > Graph Entry/Edit > Equation**.

Select **Parabola > $x = a(y - k)^2 + h$** . To graph $x = 2(y - 3)^2 - 2$, press **2** **tab** **3** **tab** **(-)** **2**. Press **enter** to graph the conic.

**Step 25:**

Translate and dilate the graph. To translate, move the cursor to the vertex until the **Translation** tool, appears. Grab the graph by pressing **ctrl** . Translate the parabola and observe the changes in the equation. Press **esc** to release the graph. To dilate, move the cursor to one of the arms of the parabola until the **Dilation** tool, appears. Grab and drag the arm of the parabola and observe the change in the equation.





The TI-Nspire™ Navigator™ Classroom

TI PROFESSIONAL DEVELOPMENT

Objective

- Perform various TI-Nspire™ Navigator™ skills demonstrated in previous activities.

About the Lesson

- Participants will role-play in this activity as a teacher and a student.
- The participant playing the role of the teacher will conduct a directed lesson using the features of the TI-Nspire™ Navigator™ System.
- The participant playing the role of the students will perform the tasks of the students for the given lesson.
- Participants should then change roles and repeat the process for a different TI-Nspire activity.

TI-Nspire™ Navigator™ Features

- Setting Up a Class
- Sending a Document
- Class Capture
- Live Presenter
- Quick Poll
- Review Workspace
- Portfolio Workspace

Roles

Working in pairs, one participant will assume the teacher role—the other, the student role. The “teacher” will operate the computer, and the “student” will operate two TI-Nspire handhelds. Each participant will have an opportunity to change and experience both roles.

Instructions

If a step or series of steps indicates **Teacher**, the participant using the Teacher Software will perform the task. If a step indicates **Student**, the participant operating the TI-Nspire handhelds will perform the task.

TI-Nspire™ Technology Skills:

- Opening a TI-Nspire document
- Navigating a TI-Nspire document

Lesson Materials:

Equipment

- Computer with TI-Nspire™ Navigator™ Teacher Software (for a pair of participants) with two USB ports
- Two TI-Nspire™ learning handhelds per participant
- Standard A to Mini-B USB Cables

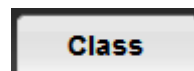
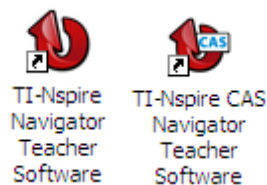


The TI-Nspire™ Navigator™ Classroom

TI PROFESSIONAL DEVELOPMENT

Adding a Class – Teacher

1. Open the TI-Nspire Navigator Teacher Software on the computer by double-clicking the icon on the desktop. If necessary, close the Welcome Screen.
2. If necessary, open the Class Workspace by clicking on the **Class** tab.
3. Select the **Add Classes** icon from the tool bar, or select **Add Classes** from the **Class** menu.
4. Click **Next** to enter the class and students manually.
 - At a later time, see the tip sheet for the process for uploading a CSV file to create classes.
5. Enter “Practice Class” as the class name and “3rd Period” as the section.
 - It is not necessary to complete the Section field, but it allows teachers to name classes by subject only (e.g., Algebra I) and to distinguish between classes of the same subject (e.g., 3rd Period).
6. Click **Add** to create the class.
7. Click **Next**.



Adding Students – Teacher

1. To immediately add students to the class, click the **Add Student** button.
 - If the teacher closes the Class Wizard by clicking **Finish**, select the **Add Student** icon or select **Add Student** from the **Class** menu.
2. For each student below, enter the first name, last name, and user name into the Add Students window. Select **Add Next Student** to add another student.
 - Jon, Smith, Jon
 - Deb, Jones, Deb
 - Marco, Polo, Marco
 - Sonja, Perez, Sonja
 - Raymone, Tyson, Raymone
3. You can choose a password for each student or each student can choose his or her own password when logging in to the class for the first time.

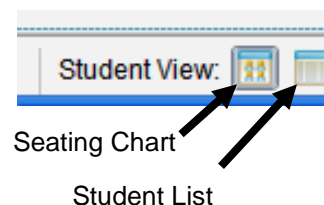




The TI-Nspire™ Navigator™ Classroom

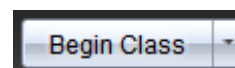
TI PROFESSIONAL DEVELOPMENT

- This will then be the student's password unless the teacher chooses to reset it.
 - By default, the Display Name is the student's first name. The Display Name can be edited as desired.
 - The Student ID is optional but sometimes important if you want to import grades into grade book software.
4. After the last student's name is entered, click **Finish**.
 5. To change the Student View between **Seating Chart** and **Student List**, use the Student View icons in the lower-right corner of the software.



Logging in Students

1. **Teacher:** Begin the class by clicking **Begin Class**. Each student's icon should change from gray to light blue/yellow.
2. **Teacher:** Connect both of the TI-Nspire handhelds to your computer using the Standard A to Mini-B USB cables. One end goes into the computer's USB port and the other into the TI-Nspire handheld.

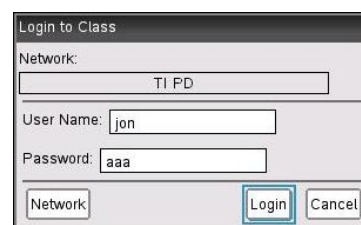


Note: In your classroom, each student's handheld will not be connected to your computer in this way. They will each have their own wireless module that will communicate with your computer.

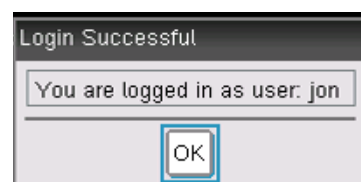
3. **Teacher:** Ask your students to log in.

Note: The passwords used can be the same for all students or be unique to each individual. Some teachers assign everyone the same password so that they do not have to reset any passwords. Some teachers allow students to choose their own password.

4. **Student:** Turn on each handheld.
5. **Student:** Log in a student on one of the handhelds.
 - The login window should pop up on the handheld screen.
 - If it does not, press > **Settings** > **Login**.



6. **Student:** Type **jon** as the username of one handheld, press ▼ on the handheld, type **abc** as the password, and press .
 - You will see a message pop up on the handheld stating: "You are logged in as user: jon"
7. **Student:** Click **OK**.
8. **Student:** Login as **deb** on the other handheld.





Sending the Document – Teacher

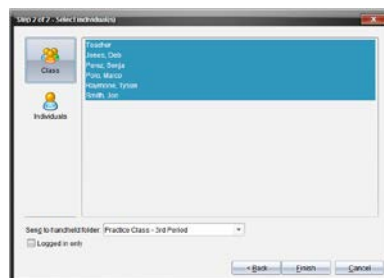
1. Click **Send to Class**.



2. Browse for one of the TI-Nspire documents provided for this activity in the location specified by your instructor. Click on the TI-Nspire document name so that it is highlighted.

Note: Each person, when in the Teacher role, should select a different TI-Nspire document.

3. Click on **Next**.
4. Click **Finish** to send the document.



Note: You are able to send a document to specific individuals. However, the default is to send to the entire class. The default is advisable because late students automatically get the document after they login with minimal disruption to your class.

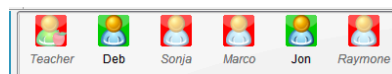
Note: You do not have to wait until the students login before sending a document. Documents can be sent any time after the class has been started.

Note: All documents will be sent to a folder on the handheld with the same name as the class (in this case, Practice Class – 3rd Period), unless the teacher changes the name of the handheld folder to which to send the document(s).

5. Click on the first row in the Class Record. The row will turn blue, and you will see red and green student icons in the Classroom View.

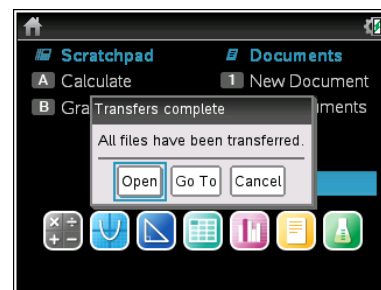
Class Record		
Action	File Name	Status
	NavQuadTransformation.tns	2 of 6

- A green icon indicates that the student has received the document; a red icon indicates that that student has not received the document.
- Students with a red icon might be absent, or communication might have been disrupted.
- It is good practice to monitor the transfer of the documents sent to ensure that all of your students receive them.



6. Students know they have received a document based on the Transfers Complete dialog box.
7. Have students open the document.

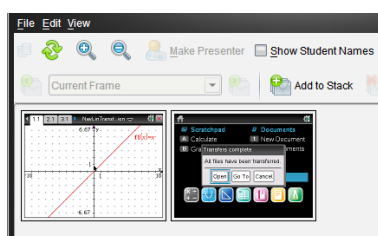
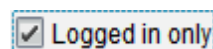
- If the handheld had a document previously open, the student will be asked to choose whether to save the prior document. Have the student select No.





Class Capture and Live Presenter – Teacher

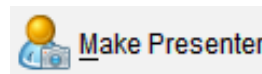
- Without looking at the student handhelds, press the **Take Screen Capture** icon and select **Capture Class**.
- Check the box next to “Logged in only” to show screen captures for only those students who have logged in. Click **OK** to reveal the screens.
- Use Class Capture to determine if students have opened the document as directed by the teacher.
- Click on the check box beside “Show Student Names”, and observe the names appearing under each screen capture.



Reflection:

- Are there scenarios where you want to see the student name with the screen capture of each student computer?
- Can you think of a scenario where you would not want student names displayed?
- If you notice that a student has not yet followed your instructions, how could you get the student back on track?

- Click on the screen capture of one of the students. Click the **Make Presenter** button so that you can view a live feed of the handheld belonging to that student.



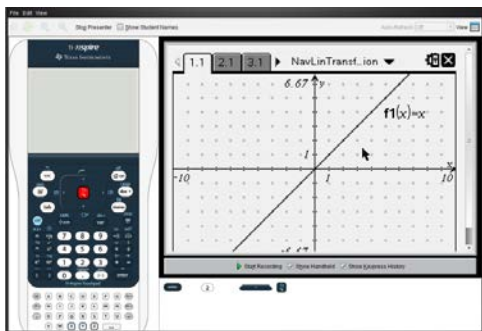
- You will see the student's handheld on your computer screen.
- Live Presenter is a tool inside Class Capture that will show what the student is doing in real time.

Note: The teacher can customize the layout of the presenter. Currently, the default is to show the Handheld and Key Press History. You can turn off either or both of these views to customize the Live Presenter. You will see the Key Press History and the screen changing in real time. Notice on the Teacher Software that you will see each specific button the student presses identified by a red outline.

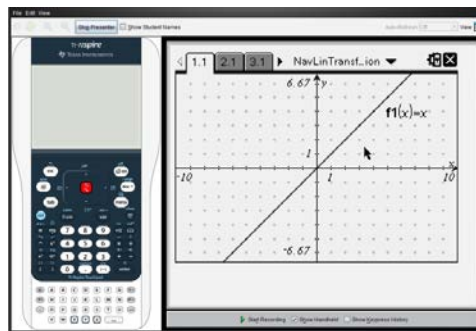


The TI-Nspire™ Navigator™ Classroom

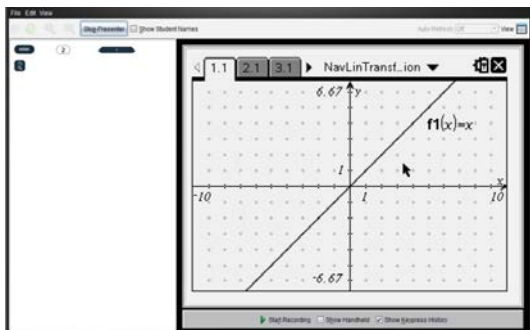
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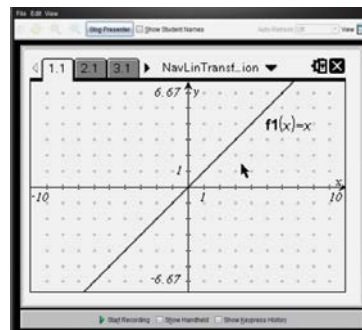
Show Handheld and Key Press History



Show Handheld Only

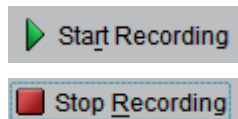


Show Key Press View Only

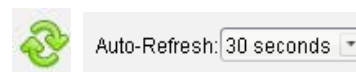
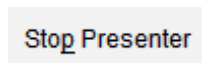


Neither Handheld Nor Key Press History

Note: One other important feature of Live Presenter is the ability to record keystrokes. Pressing **Start Recording** initiates the recording of an .avi video file. When you press **Stop Recording**, you will be prompted to save the .avi file in the Practice Class folder that exists on your computer.



6. Direct the student to move to Page 1.2 in the document.
7. Once this student has opened the document, click on the **Stop Presenter** button.
8. Instruct the students to interact with the TI-Nspire document.
9. While the students are working, monitor their progress with Class Capture. Refresh manually or set up Auto-Refresh as desired.



Reflection:

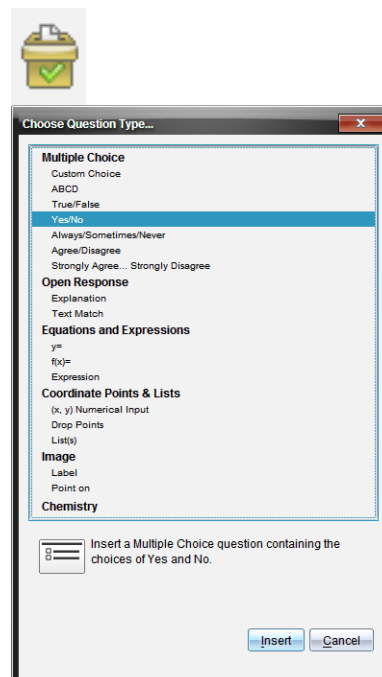
How could the use of Class Capture and Live Presenter change the way you teach?

10. Close the Class Capture feature of the software on your computer.

Sending a Quick Poll – Teacher

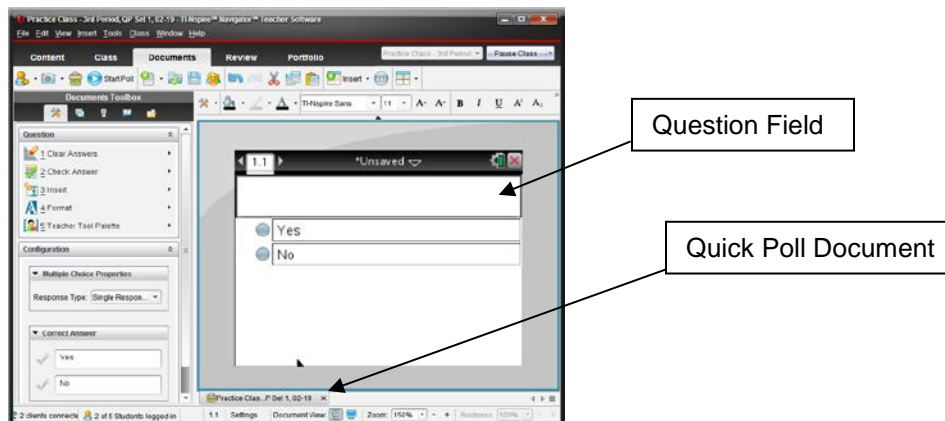
1. Click on the **Quick Poll** icon.

- The Choose Question Type dialog box appears.
- There are a variety of question types available:
 - Multiple Choice: Custom Choice, ABCD, True/False, Yes/No, Always/Sometimes/Never, Agree/Disagree, Strongly Agree... Strongly Disagree
 - Open Response: Explanation, Text Match
 - Equations and Expressions: $y=$, $f(x)=$, Expression
 - Coordinate Points & Lists: (x,y) Numerical Input, Drop Points, and List(s)
 - Image: Label, Point on
 - Chemistry



2. Select the Multiple Choice–Yes/No question type, and press **Insert**.

- A document entitled “Practice Class – 3rd Period, QP Set 1, DATE” opens in the Documents Workspace with a question page.
- The question can be entered into the question field, or the question can be asked orally.



3. Without typing a prompt into the question field, click **Start Poll** to send the Question page as a Quick Poll.



4. Ask a yes/no question orally about the activity.

Note: After pressing the Start Poll button, the software automatically opens to the Review Workspace and creates a Review Poll document containing the Poll Question and Student Data.

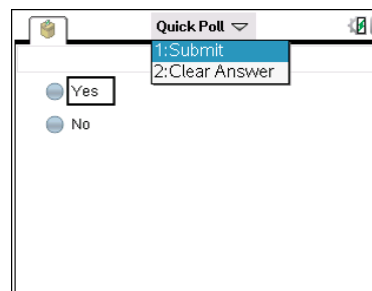


Submitting a Quick Poll Response – Student

1. Mark the desired response. On one of the handhelds, send Yes as the answer to the poll. On the other handheld, send No as the answer to the poll.

2. Submit your answers.

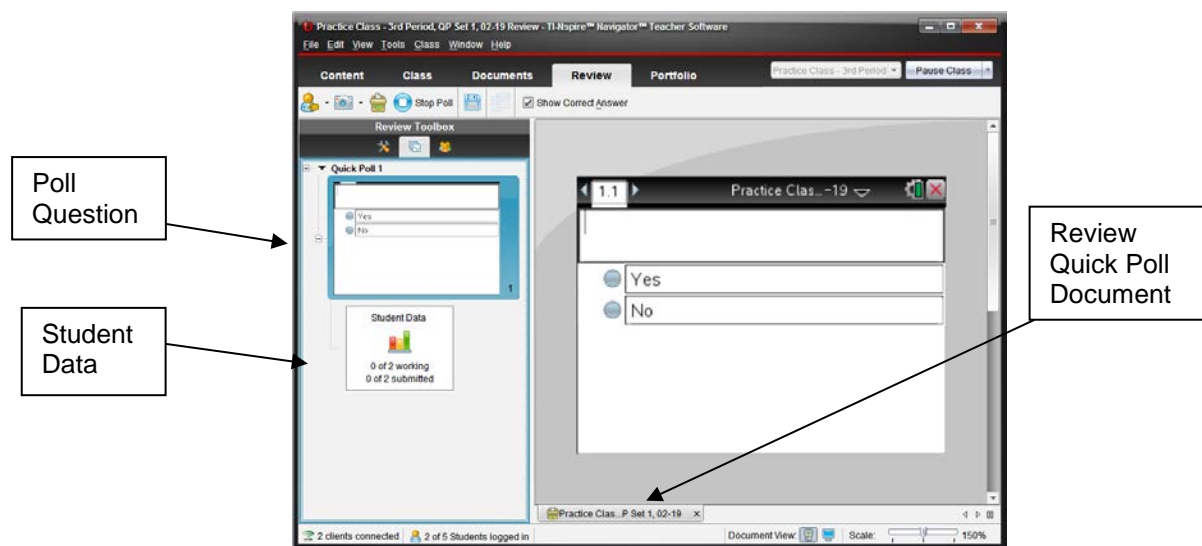
- To submit your answer, press **doc > Submit**.
- Alternatively, click on the down arrow to the right of the words Quick Poll at the top of the screen, and select **Submit**.
- On a Clickpad handheld, press **ctrl** **(house icon)** to open the Quick Poll pull-down menu.



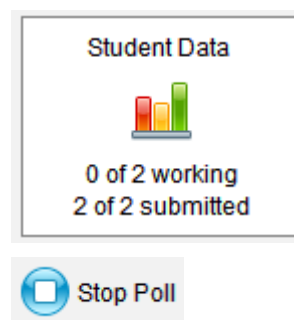
Reviewing Quick Poll Responses – Teacher

1. Monitor the number of incoming responses by watching the Student Data icon.

Note: As the students begin to answer the poll, the numbers will change in real-time according to the number of students working on the question and the number of students who have submitted their answer.



2. Monitor the Student Data, and click the **Stop Poll** button once you have received an answer from each handheld.

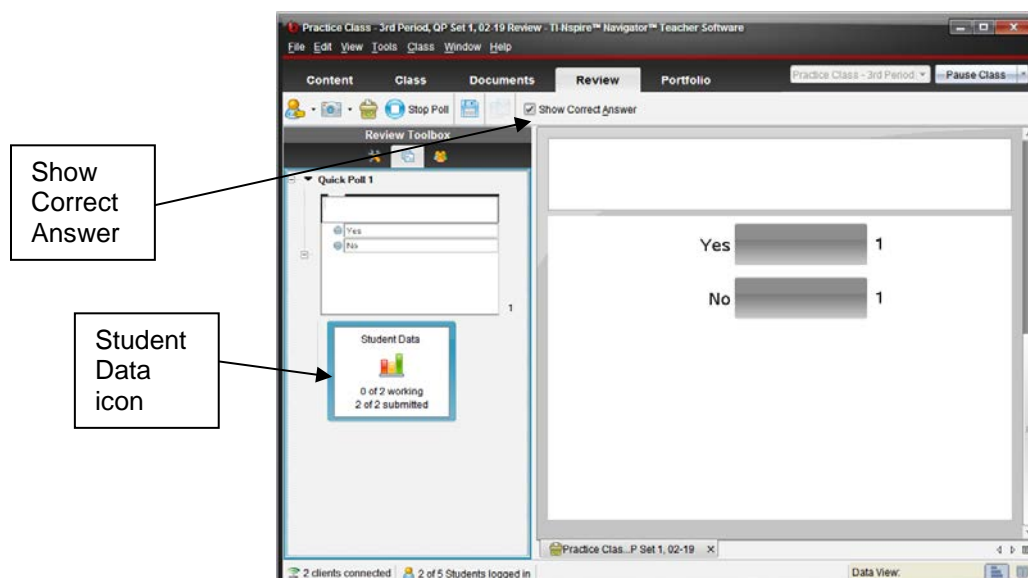




The TI-Nspire™ Navigator™ Classroom

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- Click the **Student Data** icon, noting that the incoming answers have been collected and organized for you.

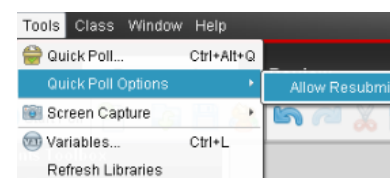


Sending and Reviewing a Quick Poll with “Allow Resubmit” – Teacher

By default, the “Allow Resubmit” option is turned off. This option allows students to resubmit their answers until the poll is stopped. When the “Allow Resubmit” option is off, the student has only one chance to respond to a question.

- The “Allow Resubmit” option is located in the Documents Workspace under **Tools > Quick Poll Options**. Return to the Documents Workspace, and select **Allow Resubmit**.

Documents



Reflection:

- When would you not want students to resubmit answers to a poll?
- When would you want students to resubmit answers to a poll?

- Type the text of an appropriate Yes/No question for the activity onto the Quick Poll Question page that is already open.
- Press the **Start Poll** button.
- Instruct the student to submit different responses on the handhelds. Note that the Quick Poll window remains open on the student handhelds since the teacher selected the Allow Resubmit option.
- Have the student change one of the responses on the handheld and resubmit.
- Monitor the Student Data, and click **Stop Poll** once you have received answers from all of your “students”.



7. Click the **Student Data** for Quick Poll 2.
8. Click on the **Students** pane under the Review Toolbox to see the specific responses by individual students. The students whose names display in red have not answered the poll.
9. Click on the check box beside “Display Student Responses,” and observe what happens. Notice that while the responses are hidden, the teacher still knows who has responded.

Review Toolbox	
<input checked="" type="checkbox"/> Display Student Responses Students	
Student	Response
<input checked="" type="checkbox"/> Deb	No
<input checked="" type="checkbox"/> Jon	Yes
<input checked="" type="checkbox"/> Marco	
<input checked="" type="checkbox"/> Raymone	
<input checked="" type="checkbox"/> Sonja	

Reflection:

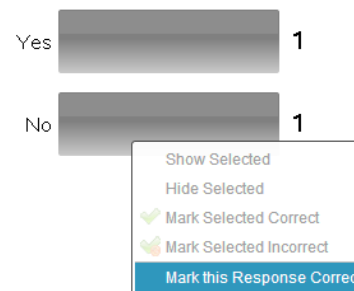
- How could you use this feature in your classroom?
- Are there times when you would want your students to see the responses?
- Is there pedagogical value in the information provided?

Review Toolbox	
<input type="checkbox"/> Display Student Responses Students	
Student	Response
<input checked="" type="checkbox"/> Deb	<Responded>
<input checked="" type="checkbox"/> Jon	<Responded>
<input checked="" type="checkbox"/> Marco	<No Response>
<input checked="" type="checkbox"/> Raymone	<No Response>
<input checked="" type="checkbox"/> Sonja	<No Response>

10. In the Student Data display area, right-click on the bar representing the correct answer, and select **Mark this Response Correct**.
 - The bar next to the marked answer will change to green to signify that it has been recorded as the correct answer if “Show Correct Answer” is checked.

☒ Show Correct Answer

- The teacher can record and track the correctness of each student’s answer to the question posed when the results are saved into the Portfolio.
- If the correct answer to the question is never marked, the teacher can still gauge class understanding from the results, but the question will not be included in any scoring when the results are saved into the Portfolio.



11. Return to the Documents Workspace.
12. Turn off the “Allow Resubmit” option by selecting **Tools > Quick Poll Options**.



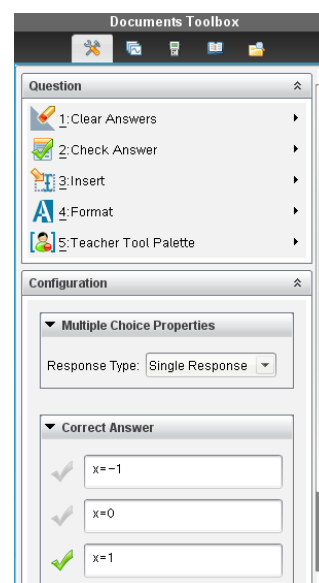
Sending a Custom Choice Quick Poll – Teacher

1. Click the **Quick Poll** icon.
2. Select Multiple Choice–Custom Choice from the Choose Question Type dialog box, and press **Insert**.
3. Type the stem of an appropriate Multiple Choice question for the activity.
4. Click in the first answer field, and type the first answer choice. Using **Tab** or the down arrow, navigate to the second answer field. Type the second answer choice, and press **Enter**. Then type a third answer choice.

Note: To remove an empty answer field, click in that field, and press the Backspace key.

Note: If this process is not being completed in front of students, the teacher could mark the correct answer when writing the question. Open the **Document Tools** pane in the Documents Toolbox, and click on the checkmark in front of the correct answer.

5. Send the Quick Poll to the class by pressing **Start Poll**.
6. Ask the “student” to submit responses on both handhelds. Monitor the incoming responses.
7. Click on the **Stop Poll** button after the “students” have responded to the question.
8. View the Student Data through the Page Sorter in the Review Toolbox. Click on the Student Data icon for Quick Poll 3.



☒ **Show Correct Answer**

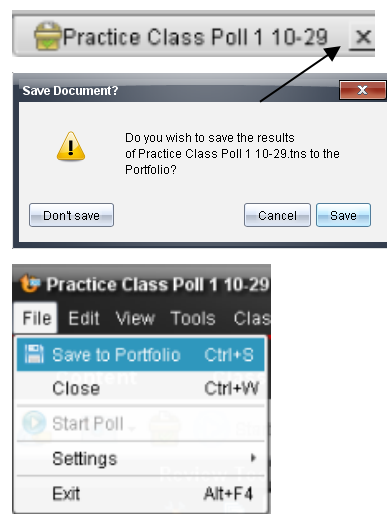
- If the correct answer was marked BEFORE sending the Quick Poll question, the correct answer will be displayed in green if the “Show Correct Answer” option is selected.
- If the correct answer was not marked before sending the Quick Poll question, right-click on the correct answer bar and select **Mark this Response Correct**.

Saving to the Portfolio – Teacher

The Quick Poll questions and Student Data for a class session are compiled into one Review document for up to 15 Quick Poll questions. If more than 15 Quick Poll questions are sent during a class session, a second Review document will open and compile the next 15 Quick Poll questions and results. These results can be saved into the Portfolio at any time during the class session. Saving the results will help the teacher monitor student progress over time and make diagnostic decisions regarding student performance.

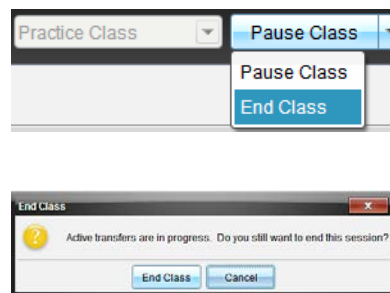
1. Click on the X to close the Review document containing the Quick Poll questions and Student Data and click **Save**.
Alternatively, select **File > Save to Portfolio**.
2. If desired, change the name of the portfolio column, and click **Save**.
3. To view the portfolio, go to the Portfolio Workspace. The Assignment Summary displays the results in a gradebook type display.
 - The Portfolio Workspace will be discussed in depth in a later activity in the workshop.

Assignment Sum...	Practice Class Po...	
	Average	
Column Actions		
Class Average	50%	50%
Date	08-07	
Deb	0%	0%
Jon	100%	100%
Marco		
Raymone		
Sonja		



Ending the Class – Teacher

1. To end the class, select **End Class** from the pull-down menu next to the Class Name.
2. If a pop-up window indicates “Active transfers are in progress,” press **End Class**. The alert indicates that the TI-Nspire document sent to the class is still available for those who have not yet logged in to the class session.



3. Change roles and repeat the activity.
 - When creating a new class, use a different class name if you are on the same computer and select that class name before starting the class.

Creating a Question Document TI PROFESSIONAL DEVELOPMENT


Activity Overview


In this activity, you will create a question document using the Question application of the TI-Nspire™ family of Teacher Software. As the document is created, properties of the six question types – Multiple Choice, Open Response, Equations and Expressions, Coordinate Points & Lists, Image, and Chemistry – will be explored.


Materials

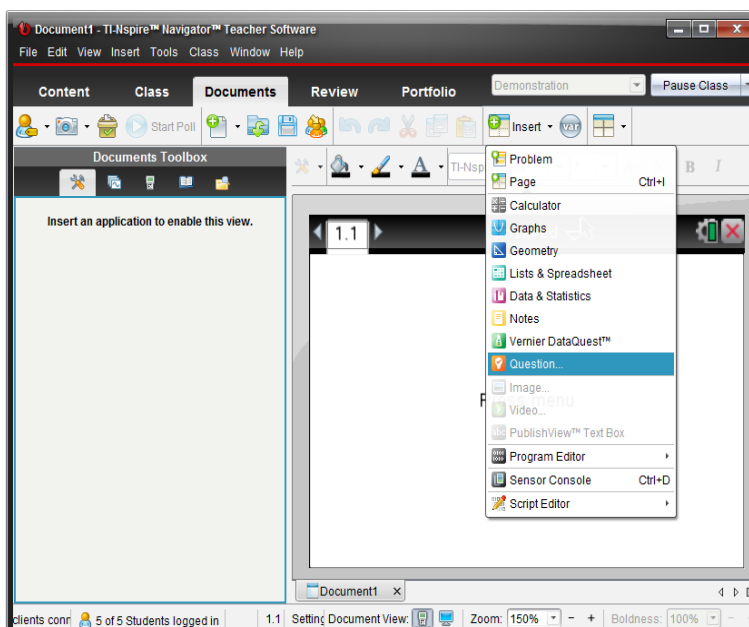
- TI-Nspire™ Teacher Software

Step 1:

Open the Teacher Software. If the Welcome Screen appears, click  to create a new document with the Question application as the first page.

Otherwise, go to the Documents Workspace and create a new document by clicking the New Document icon, .

Insert a Question application by selecting **Insert >  Question**.



Note: TI-Nspire™ document pages with the Question application can only be created with Teacher Software. The Question application is not available in the TI-Nspire™ Student Software.



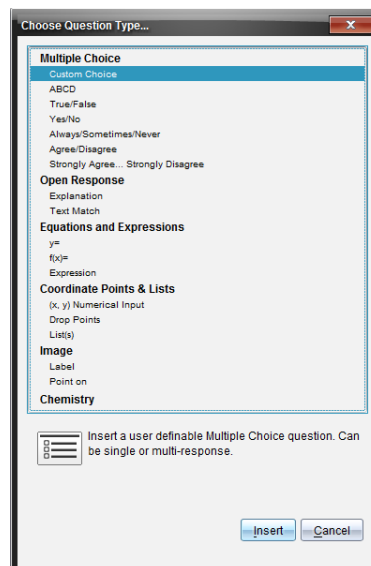
Creating a Question Document

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Step 2:

The Choose Question Type dialog box appears. Select **Custom Choice** and click **Insert**.


Note: A brief description of the highlighted Question Type appears at the bottom of the window.




Step 3:

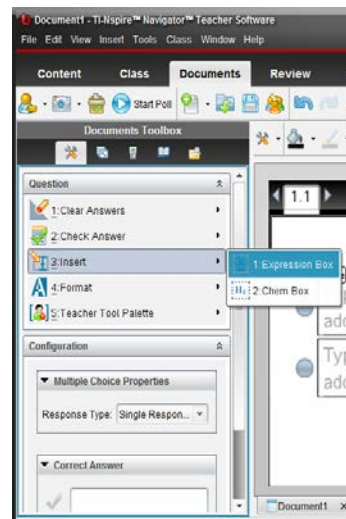
Enter the following problem by typing "Solve for x:" and inserting an Expression Box.

$$\text{Solve for } x: \frac{9}{5}x + 32 = 212$$

To type the equation into an Expression Box, click on the **Document Tools**  pane in the Documents Toolbox. Select **Insert > Expression Box**. Enter the equation. Then, to close an Expression Box, press Enter.

Note: An Expression Box can also be inserted by pressing **Ctrl+M**.

Note: A variety of math templates can be accessed by selecting the  Utilities pane in the Documents Toolbox.



Step 4:

Click in the first answer field. Insert an Expression Box. Type the first answer choice. Press Enter to close the Expression Box. To move to the next answer field, click in the next field or press Enter. Continue to type the following answer choices.

$$x = 135\frac{5}{9}, x = 324, x = 100, x = 439\frac{1}{5}$$

Note: To remove an empty answer field, click in that field and press the Backspace key.

Solve for x: $\frac{9}{5}x + 32 = 212$

☐ $x = 135\frac{5}{9}$

☐ $x = 324$

☐ $x = 100$

☐ $x = 439\frac{1}{5}$



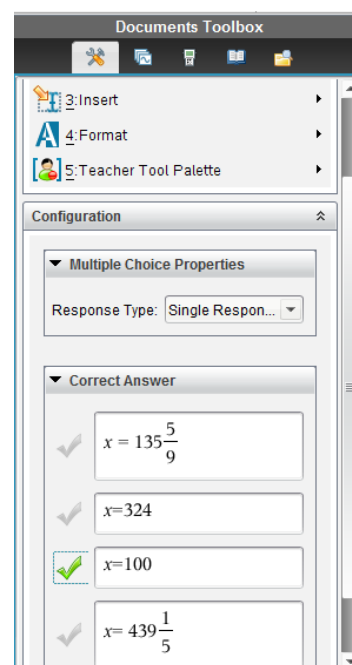
Creating a Question Document

TI PROFESSIONAL DEVELOPMENT

Step 5:

As you type answer choices, they automatically appear in the Correct Answer fields in the Configuration panel of the Document Tools. Select the correct answer by clicking on the check mark in front of the answer choice.

Note: In the Configuration panel, the Multiple Choice Properties can be changed to allow a different Response Type. Single Response allows one correct answer, while Multiple Response allows multiple correct answers. The Multiple Choice Properties and Correct Answer fields can be collapsed by clicking ▼ and expanded by clicking ►.

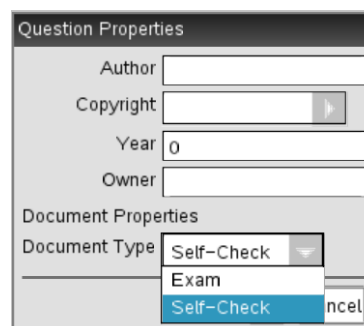


Step 6:

There are two types of question documents: Exam and Self-Check. Exam documents can be scored using the TI-Nspire™ Navigator™ System or TI-Nspire™ Navigator™ NC System.

A Self-Check document allows students to check their answers after they select or enter a response. The default setting for the Document Type is Exam.

As a Self-Check Question document, select **Teacher Tool Palette > Question Properties**. Change the Document Type to **Self-Check** and click OK.



Note: The document type selected applies to all questions in the current document.

Note: After students answer a question in a Self-Check document, they can check their answers by selecting **Check Answer** from the Menu. A message (“Your current answer is correct.” or “Your current answer is incorrect.”) is displayed. If the answer is incorrect, two options appear: Show Correct Answer and Try Again.

Note: In Self-Check documents, the Explanation response type (not scored) question does not display the correct or incorrect answer message when students select **Check Answer**. However, any suggested response entered by the teacher will be displayed. The Text Match response type (scored) requires students to exactly match the correct answer, including templates, if applicable. When students select **Check Answer**, the correct or incorrect answer message will be displayed.



Creating a Question Document

TI PROFESSIONAL DEVELOPMENT

Step 7:

Insert a new question by clicking **Insert** and selecting **Question > Equations and Expressions > Expression**. Type the following problem into the question field, inserting an Expression Box for the equation:

What is the slope of the line $2x - 3y = 12$?

Step 8:

In the Configuration panel, under Expression Properties, change Response Type to **Number**. Type $\frac{2}{3}$ in the Correct Answer field.

If desired, change the Tolerance from ± 0 to ± 0.001 .

Note: Math templates and symbols can also be accessed by clicking the Utilities icon in the Correct Answer field.

Step 9:

Insert a new question by clicking **Insert** and selecting **Question > Equations and Expressions > y =**. Type the following problem into the question field.

Write the equation of a line whose slope is -2 and whose y-intercept is 3 .

Step 10:

In the Configuration panel, under Equation Properties, check the box for **Include a Graph Preview**. In the Correct Answer field, type $-2x + 3$ as an accepted response. Check the box for **Accept equivalent responses as correct**.

Note: In the Configuration panel, under Equation Properties, the Response Type options include $y =$ and $f(x) =$ notation. The number of responses and prompt location can be changed, and students can be allowed to show their work in a series of blank fields.

Note: When might you choose not to check the box for **Accept equivalent responses as correct**?

The Configuration panel shows the following settings:

- Expression Properties:**
 - Response Type: Number
 - ☐ Allow students to show their work
- Correct Answer:**
 - Accepted numerical response: $\frac{2}{3}$
 - Tolerance: ± 0
 - Accepted expression response(s):
 - ☒ Accept equivalent responses as correct.
 - [How does this work?](#)

The Configuration panel shows the following settings:

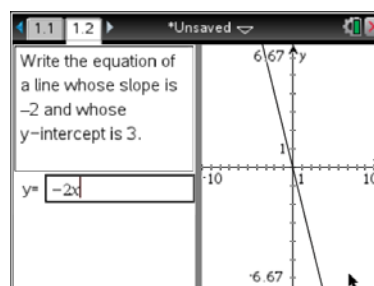
- Documents Toolbox:**
 - 3: Insert
 - 4: Format
 - 5: Teacher Tool Palette
- Equation Properties:**
 - Response Type: $y =$
 - Number of responses: 1
 - ☒ Include a Graph Preview
 - Prompt Location: Left
 - ☐ Allow students to show their work
- Correct Answer:**
 - Accepted response(s): $y = -2 \cdot x + 3$
 - ☒ Accept equivalent responses as correct.
 - [How does this work?](#)




Creating a Question Document

TI PROFESSIONAL DEVELOPMENT

Note: By changing the Equation Properties to **Include a Graph Preview**, the page layout of the question is automatically changed and a Graphs application is inserted on the right side of the screen. When an expression is typed into the $y =$ field, the function is automatically graphed. If Enter is pressed, another $y =$ field appears.




Step 11:

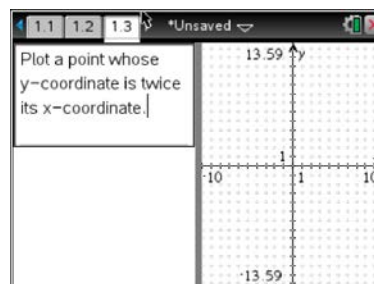
Insert a new question by clicking **Insert** and selecting  **Question > Coordinate Points & Lists > Drop Points**. Type the following problem into the question field.

Plot a point whose y -coordinate is twice its x -coordinate.


Step 12:

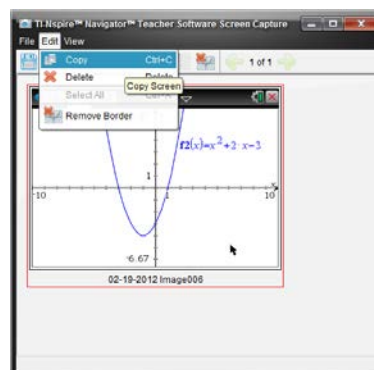
In the Correct Answer field, enter (1, 2) as an acceptable answer. Add an additional acceptable answer field by clicking the green addition  icon. Enter (2, 4) as an acceptable answer. Check the box for **Accept equivalent responses as correct**.

Note: The **Drop Points** question type automatically includes a Graphs application with a grid.



Step 13:

Insert a Graphs page by clicking **Insert** and selecting  **Graphs**. Graph the function $f_1(x) = x^2 + 2x - 3$. Press **CTRL+J** to capture the graph. The image is automatically copied to the clipboard.






Creating a Question Document

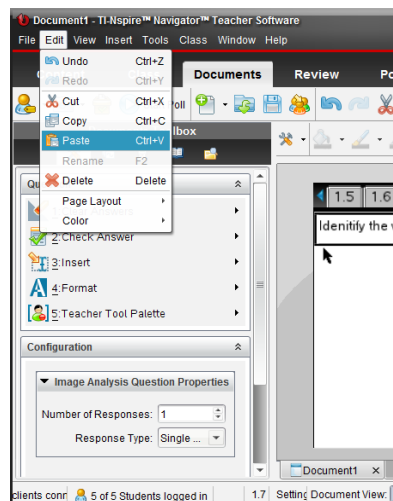
TI PROFESSIONAL DEVELOPMENT

Step 14:

Insert a new question by clicking **Insert** and selecting  **Question > Image > Point on**. Type the following problem into the question field.

Identify the zeros of the quadratic graphed below.

Click on the bottom half of the screen and choose **Edit > Paste** from the drop-down menu at the top of the screen.

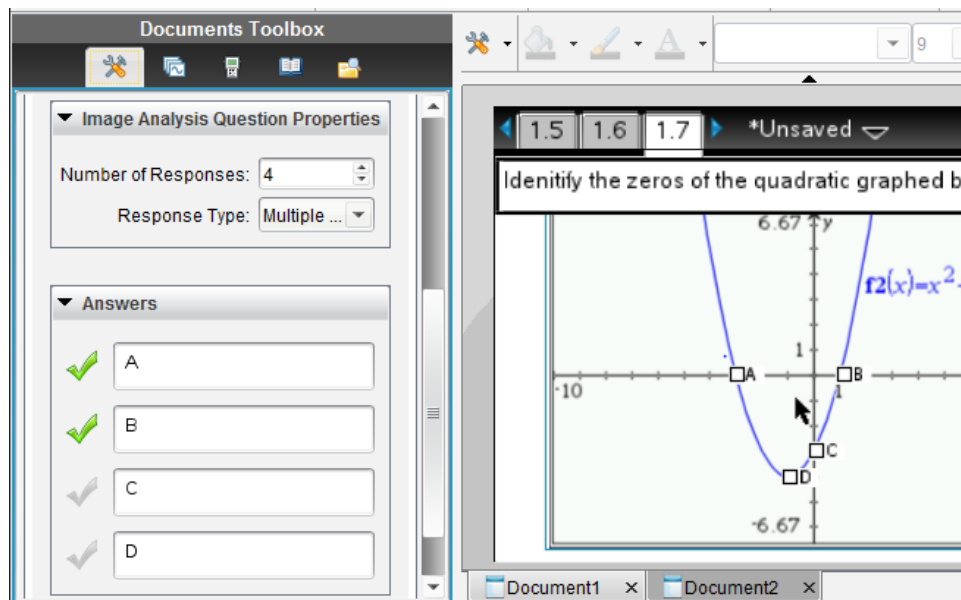


Step 15:

In the Configuration menu change the number of responses to four. This will place four points on the image. Change the Response Type to Multiple Response.

Move the points so that two of the points are on the two x-intercepts, one is on the y-intercept, and the final point is on the vertex.


In the **Answers** menu, click the check boxes to identify the correct answer(s).



Note: Delete the extra Graphs page by changing to the Page Sorter View in the Documents Toolbox, right-clicking on the extra page, and selecting **Delete**.

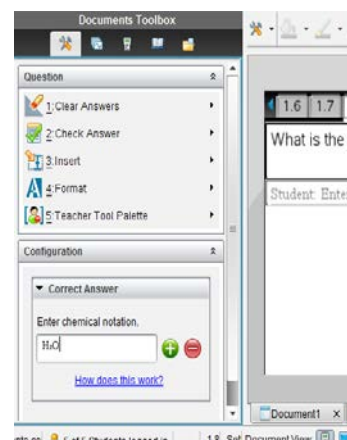
Creating a Question Document TI PROFESSIONAL DEVELOPMENT

Step 16:

Insert a new question by clicking **Insert** and selecting  **Question > Chemistry**. Type the following problem into the question field:

What is the chemical formula for water?


In the Correct Answer field type H₂O. The Chem Box will automatically convert the “2” to a subscript. Chem Boxes can be used on Question and Notes pages to support chemical formulas.



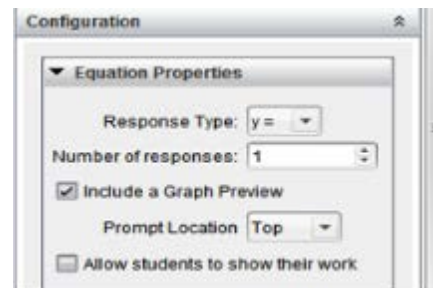
Note: Chemical symbols are automatically recognized. Subscripts are created automatically when numbers are typed after chemical symbols. Exponents are created by using \wedge . The equivalence arrow is created by pressing \equiv .

Step 17:


Insert a Question application by clicking  **Insert > Question**. In the **Equations and Expressions** question type, select $y =$.

To change the question properties in the  Document Tools pane, go to the Configuration panel in the Equation Properties panel. Select **Include a Graph Preview** and change the **Prompt Location** to **Top**.

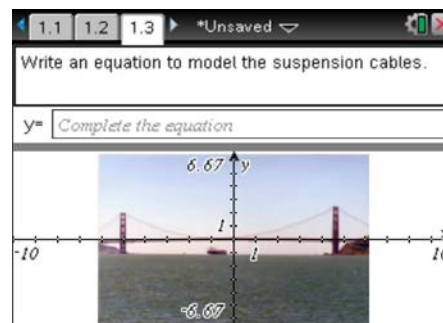
Note: To maximize the area of the Graph Preview, grab and move the gray bar separating the question and answer fields from the Graph Preview.



Step 18:

Insert an image into the Graph Preview by clicking the graph and then selecting  **Insert > Image**. Choose **Bridge1.jpg** and click **Open**. Type the following problem into the question field.

Write an equation to model the suspension cables.



Save the document.

This page intentionally left blank



Class Capture Features

TI PROFESSIONAL DEVELOPMENT

Objective

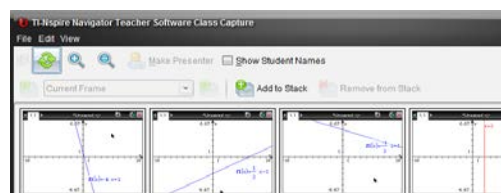
- Introduce additional features of the Class Capture tool in the TI-Nspire™ Navigator™ System.

About the Lesson

- Participants will act as students in a lesson looking for visual patterns in the graphs of linear functions.
- Participants will discuss the visual effect of the parameters m and b on the graph of the linear function in the form $y = mx + b$.

TI-Nspire™ Navigator™ Features

- Class Capture



TI-Nspire™ Technology Skills:

- Logging in to the TI-Nspire Navigator System
- Opening a TI-Nspire™ document and adding a Graphs page
- Entering the equation of a linear function
- Updating the equation of a linear function
- Transforming a graph

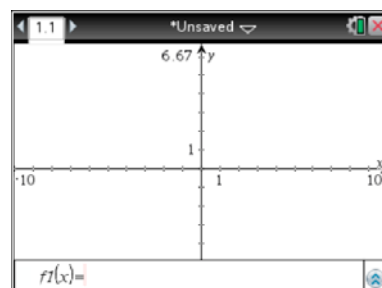
Lesson on Families of Lines

Participants will act as students in a classroom with a TI-Nspire Navigator System. Once you have logged in, opened a new document, and added a Graphs page, the instructor will lead a demonstration lesson looking for visual patterns in linear functions.

This is a demonstration activity. You will have the opportunity to perform all of the TI-Navigator tasks in subsequent activities in the workshop. Right now, focus on interacting with the lesson as a student, and notice the usage of the TI-Nspire Navigator System.

Notes for Today's Activity

- Ask participants to log in to the TI-Nspire Navigator session.
- Instruct participants to open a new document and start with a Graphs page. Tell them to wait for further instructions once the Graphs page is open.
- Use Class Capture to make sure that each participant has a Graphs page and is waiting to enter a function. Show the Class Capture and discuss any issues that might exist in a classroom at this point.
 - If necessary, select one participant to be the Live Presenter to make sure all participants are in the same place. Continue to refresh the Class Capture until all screens are in the same location, then click the **Add to Stack** icon.

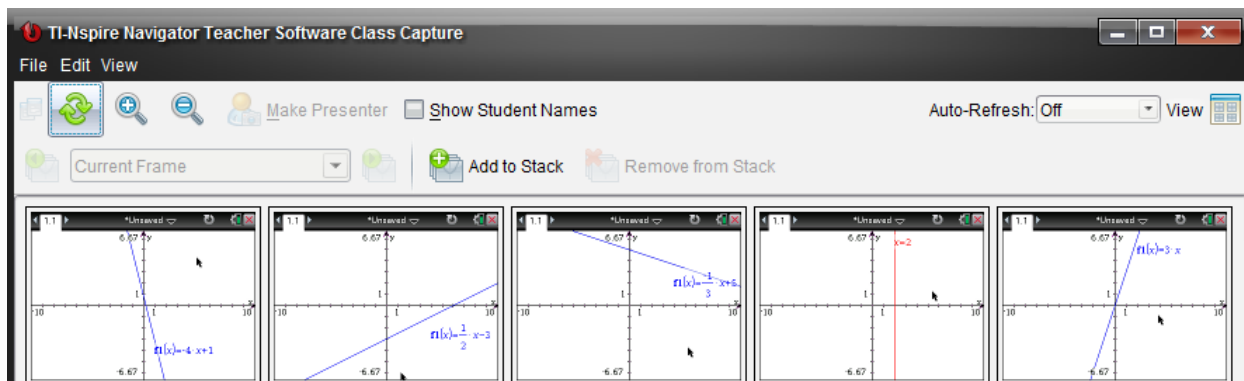




Class Capture Features

TI PROFESSIONAL DEVELOPMENT

4. Ask participants to input the equation of a line into $f1(x)$. Tell them to enter any line that will appear in the current graphing window.
5. Continue to refresh the Class Capture until all participants have entered a line. Click **Add to Stack** when all of the graphs are displayed. A portion of a sample Class Capture is shown below for discussion purposes.

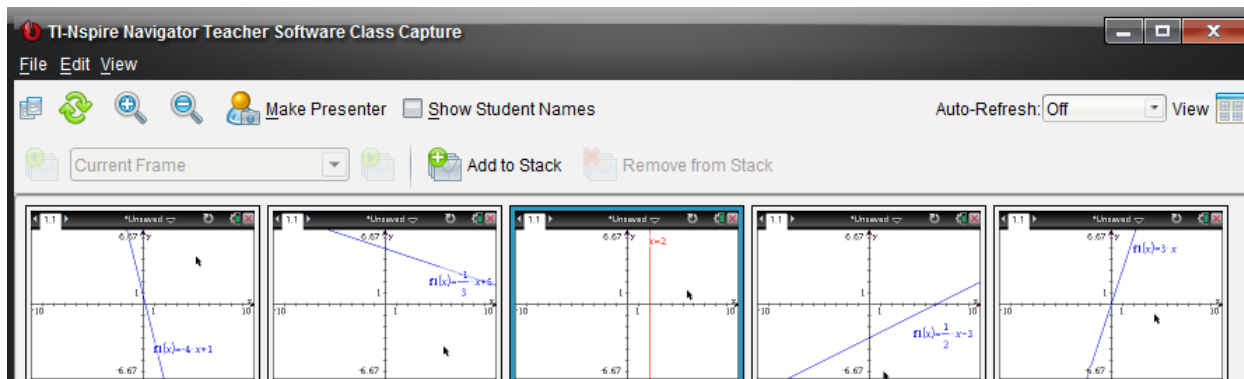


Note: If a participant decides to enter something other than a line, leave it until you discuss the graphs the first time. Having something other than a line provides an opportunity to discuss a graph that does not fit the requested pattern.

6. Ask participants what patterns they see in the graphs. On the board, list all that are mentioned. Accept any idea, rearranging the screens to illustrate what is mentioned. For example, in response to "they slant in different directions," you could rearrange the screen captures as illustrated below.

Sample responses to the Class Capture above could be the following: Some cross the y -axis above the origin. Some cross the y -axis at the same point. Some appear parallel. For those that go uphill, some are steeper.

Click **Add to Stack** whenever an interesting set of captures is displayed.

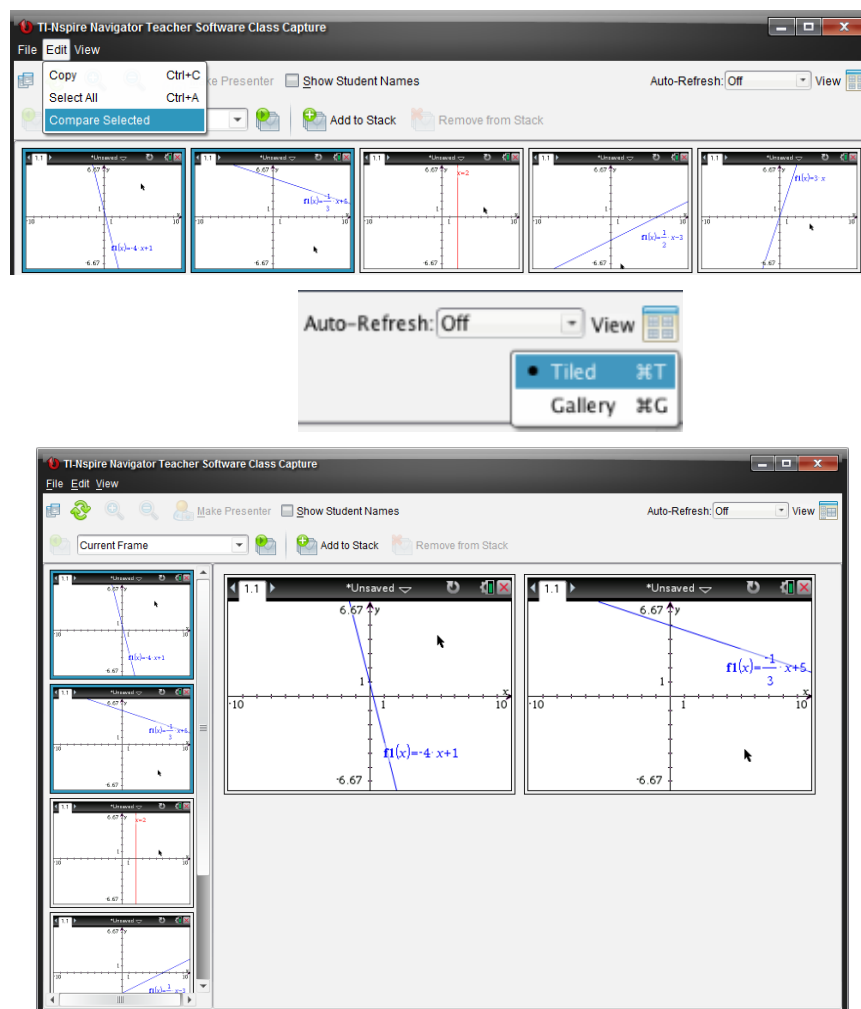




Class Capture Features

TI PROFESSIONAL DEVELOPMENT

7. As you look at each arrangement, discuss the visual image and the values of the slope (m) and y -intercept (b).
 - What do participants notice about those that fit a pattern versus those that do not fit a pattern? Add these observations to the list of patterns.
8. As you are showing the Class Captures of the various patterns—after looking at all the screens together— select those that fit the pattern, and choose **Edit > Compare Selected** to allow a larger image to be viewed. Compare the values of m and b . After each comparison, return to the Tiled view.

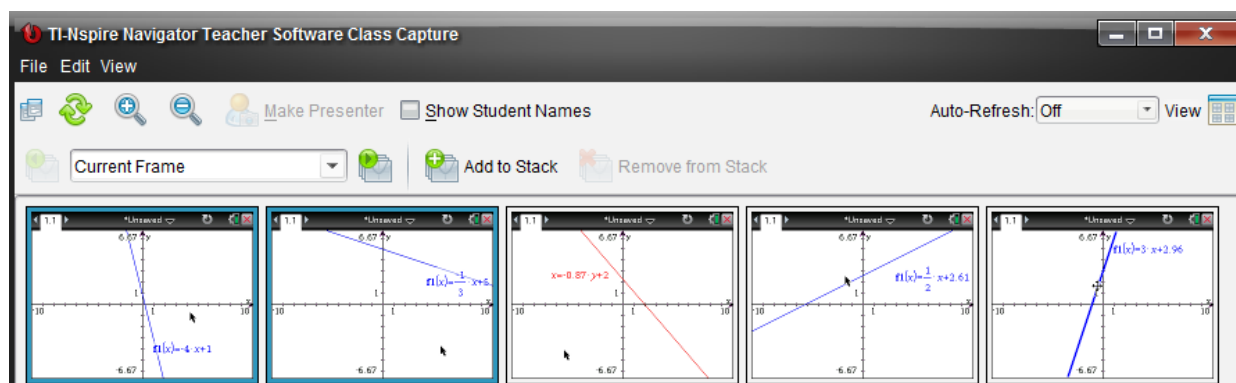


9. Ask each participant to grab and move his or her line so that it crosses the y -axis above the origin. Refresh the Class Capture to make sure that all have successfully accomplished the task. Make Live Presenter of anyone who has not had success with moving the line and talk them through the steps. Click **Add to Stack** after all participants have accomplished the task.

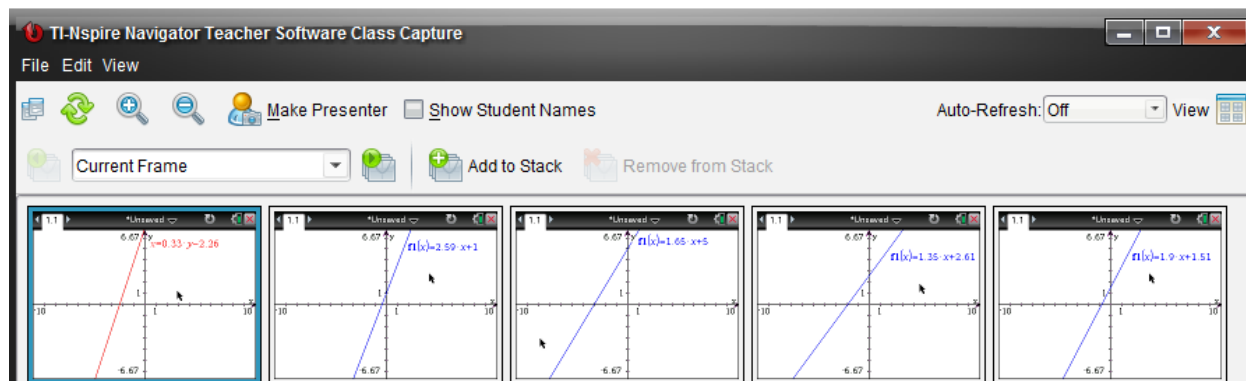


Class Capture Features

TI PROFESSIONAL DEVELOPMENT



10. Ask participants to make a conjecture about the changes in m and b as the line is translated up and down. Give them a few minutes to test their conjecture. Set Class Capture to Auto Refresh every 30 seconds as they work. Click **Add to Stack** whenever an interesting set of captures are displayed.
11. Next, have participants make a conjecture about the changes in m and b as they rotate the line. Give them a few minutes to test their conjectures.
12. Ask the participants to insert a new Graphs page. In $f_2(x)$, have them enter a line with a positive slope. Refresh the Class Capture, and ask which graphs are correct. Click **Add to Stack** at this point as well.

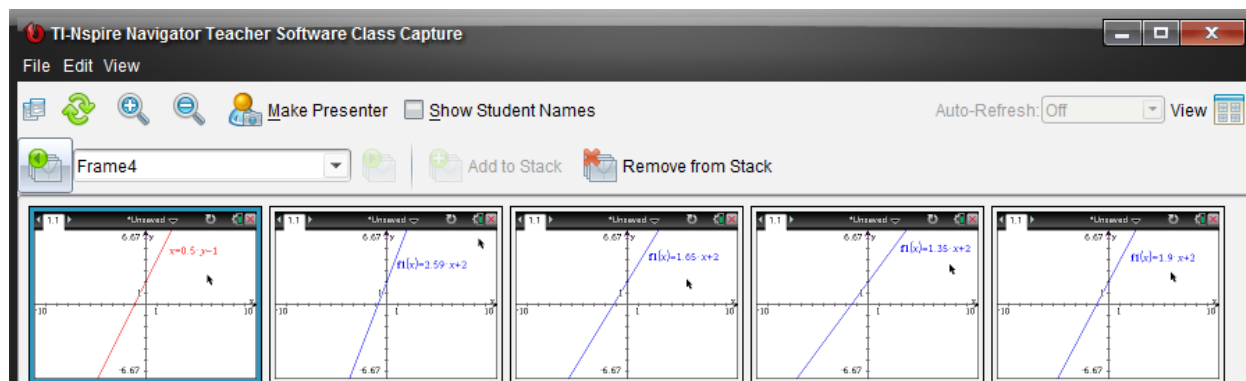




Class Capture Features

TI PROFESSIONAL DEVELOPMENT

13. Ask the participants to translate their lines so the y-intercept is two. Refresh the Class Capture. What do the lines have in common? How do they differ? Select two screen captures to be compared. Use the Compare Selected option so that they can be easily seen. Discuss how the values of m affect the slant of the line. Click **Add to Stack** before moving on to the next step.



14. Ask the participants to insert a new Graphs page. In $f_3(x)$, have them enter a line with a negative y-intercept. Refresh the Class Capture, and ask which graphs are correct. Click **Add to Stack** to store the current screens.
15. Ask participants to insert a new Graphs page. In $f_4(x)$, have them enter a line with a negative slope and a positive y-intercept. Refresh the Class Capture, and ask which graphs are correct. Again click **Add to Stack**.
16. Ask the participants to insert a new Graphs page. In $f_5(x)$, have them enter a line with a slope of two and any y-intercept. Refresh the Class Capture. What do the lines have in common? How do they differ? Click **Add to Stack** one last time.
17. Open the document *Class_Capture_Features_QP.tns*. Send each Quick Poll, and discuss the results. Look at the various representations of the results, especially for the first question—the Multiple Response Custom Choice question. Also change the Data View for some of the Quick Polls, especially for the last question, the (x,y) Numerical Input question.

The screenshot shows the TI-Nspire Navigator Teacher Software interface. At the top, there's a 'Portfolio' tab and a 'Demo' dropdown. Below it, a question is displayed: 'Which of the graphs have a positive value for m?'. The table below shows the responses for five students:

Student	Response
AAA	B,C
Allan	B,C
BBB	B,C
DDD	B
EEE	A

At the bottom, there's a 'Demo Poll 1 05-02' tab. A context menu is open over the table, showing options like 'Show Selected', 'Hide Selected', 'Mark Selected Correct', 'Mark Selected Incorrect', 'Separated Responses Frequency Table', 'Grouped Responses Frequency Table', 'Separated Responses Student Table', 'Grouped Responses Student Table', 'Show Time Column', 'Sort Choices by their Value', and 'Copy Entire Table'.

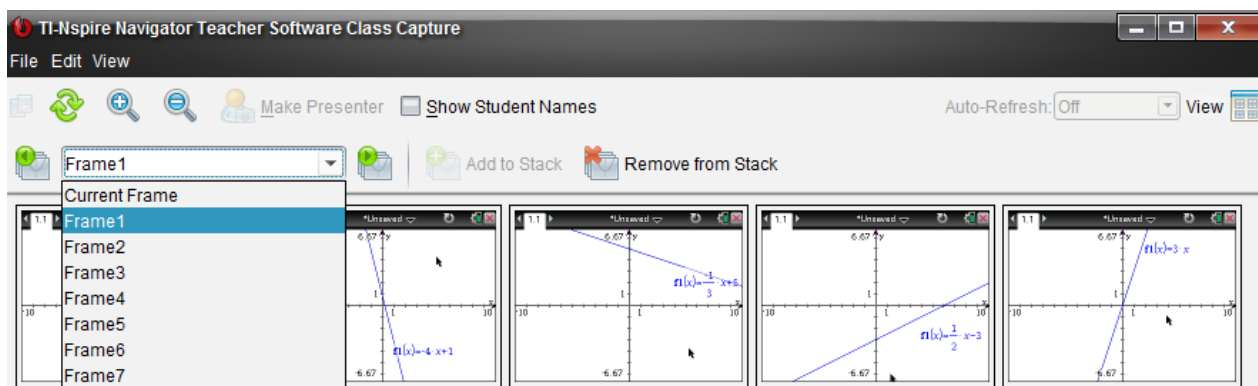


Class Capture Features

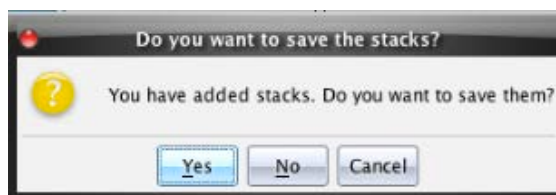
TI PROFESSIONAL DEVELOPMENT

Note: In the Class Workspace, go to **File > Settings > Teacher Preferences** to select or deselect **Randomize order in Screen Capture**.

18. Now we can review the lesson by examining the Screen Captures that have been stored in the Stack. Click on the drop down menu, and select Frame 1.
- Demonstrate how the teacher can scroll through all Captures stored during the lesson by clicking the Next Frame icon. This will allow the teacher to reflect on the lesson and/or identify students that need additional assistance.
 - While examining the Stacks, names can be displayed, screens can still be reordered, and zooming on screens is active.



19. You will be asked whether you want to save the stacks when you close the Class Capture window.
- The default storage location is **My Documents > TI-Nspire > Stacks**.
 - Each Class Capture is saved as an individual JPG document with the User Name, stack number, date, and time in the filename.





Demonstration – Function Match on Image

TI PROFESSIONAL DEVELOPMENT

Objective

- Demonstrate the use of an image shared with all members of a class as a target for modeling with an appropriate function.

About the Lesson

- Participants will graph a function that models an object in an image.
- To illustrate differentiation, once participants match the base image, they will be asked to make a more difficult match.



TI-Nspire™ Navigator™ Features

- $y=$ Question Type Quick Poll
- Viewing Student Data

TI-Nspire™ Technology Skills:

- Logging into the TI-Nspire™ Navigator™ System
- Entering the equation of a function

Whole-Class Function Match on Image Activity

Participants will be students in a classroom with a TI-Nspire™ Navigator™ System. The mathematical objective of the lesson is student practice with the graph of a function. As students, participants will try to match an object in an image that can be modeled with a function. Once a student has successfully matched the first object, to provide a challenge, they will be asked to match an object whose equation is more complex than the original.

This is a demonstration activity. Participants will have the opportunity to perform all the TI-Navigator tasks in subsequent activities in the workshop.

Notes for Today's Activity

1. The teacher (instructor) will start class and open the document *Function_Match.tns*.
2. Students log in to the TI-Nspire Navigator network.
3. The teacher starts the poll.

Note: Because of the way this question is configured, the equation that a student enters will be previewed. The teacher will select a Live Presenter to demonstrate how to enter and preview an equation. Ask the Live Presenter to enter $y=2$. Have the other students notice that when the 2 is entered, the equation appears on the graph below. Ask them not to enter anything yet.

The teacher will:

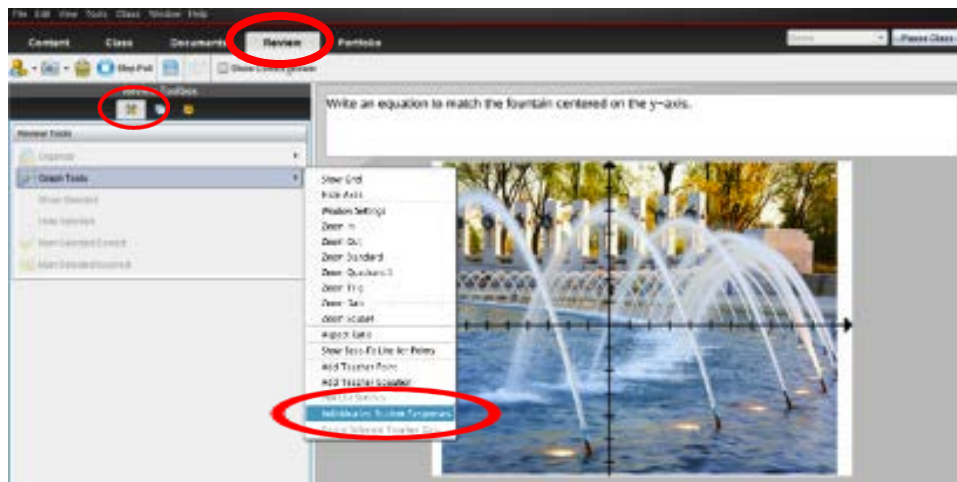
4. Stop the Live Presenter, and move to the Review Workspace. Turn off **Show Correct Answer** if it has been checked.
5. Select the **Page Sorter** pane, and then select **Student Data**.
6. In the bottom right-hand corner of the Review Workspace, change the Data View to the graph.



Demonstration – Function Match on Image

TI PROFESSIONAL DEVELOPMENT

7. In the Review Workspace, select the **Review Tools** pane. Then select **Graph Tools > Individualize Student Responses**. At this point, no function appears on the graph.



8. The student who was the Live Presenter will press **Enter** on his/her handheld. A line will appear at $y=2$ on the screen.
- Once a student presses **Enter**, each graph of the function will appear in the Review Workspace. Students can edit their functions until the teacher stops the poll.



The teacher will:

9. Ask students to start trying to match the stream of water centered on the y -axis or the brace of the fence that goes through the origin.
10. Tell them to watch the Review Workspace as they press **Enter** so they can determine which function is theirs. Graphs will be displayed with different colors.
11. Allow some time for the participants to explore entering functions.



Image from Fountain Question

12. After participants successfully match the center stream of water, have them try to match the next arc to the right. Point out that this will be more difficult but this models a method of differentiation where successful students are given more challenging opportunities.





Demonstration – Function Match on Image

TI PROFESSIONAL DEVELOPMENT

13. After students successfully match the first object, have them try to match the next arc to the right on the fountain image or a different brace on the fence image.

- Point out that this will be more difficult but this models a method of differentiation where successful students are given more challenging opportunities.



Image from Fence Question

14. Use Class Capture to determine if all are successfully working on the task. Then, end the Class Capture, and return to the Review Workspace.

15. Stop the poll, and show additional Data View options.

$$y = -0.15x^2 + 5$$

$$y = -0.32(x - 3.8)^2 + 4.5$$

$$y = -0.8x^2 + 4$$

$$y = -x^2 + 5$$

Response	Frequency
$y = -x^2 + 5$	1
$y = -0.15x^2 + 5$	1
$y = -0.8x^2 + 4$	1
$y = -0.32(x - 3.8)^2 + 4.5$	1

Review Toolbox

☒ Display Student Responses

Student	Response	Time
<input checked="" type="checkbox"/> AAA	$y = -x^2 + 5$	02:30:14.143 AM
<input checked="" type="checkbox"/> BBB	$y = -0.8x^2 + 4$	02:27:52.889 AM
<input checked="" type="checkbox"/> Allan	$y = -0.32(x - 3.8)^2 + 4.5$	02:35:13.681 AM
<input checked="" type="checkbox"/> CCC	$y = -0.15x^2 + 5$	02:30:29.228 AM

16. Teacher and students will discuss the activity and the mathematics that it supports.

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TI-Nspire™ Navigator™ Performance Reflection

TI PROFESSIONAL DEVELOPMENT

Objective

- Reflect on actual student data that becomes accessible with the TI-Nspire™ Navigator™ System.

About the Lesson

- Participants will examine student data collected using the TI-Nspire Navigator System.
- Participants will reflect on the results and attempt to identify misconceptions and determine remediation steps. This practice is aligned with the CCSS of “critique the reasoning of others” as well as the “attend to precision” practice.

Sample Student Responses: Pre-Test Questioning

Quick Poll

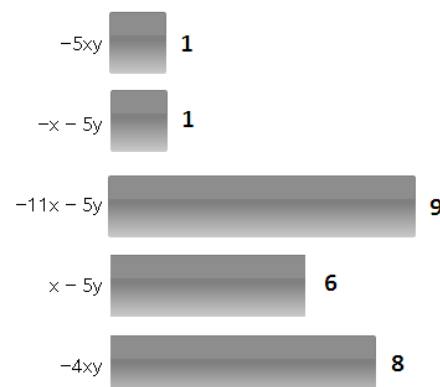
Simplify the expression.

$$-5x - 3y - (-6x) - 2y$$

☒ $-5xy$
☐ $-x - 5y$
☐ $-11x - 5y$
☐ $x - 5y$
☐ $-4xy$

Simplify the expression.

$$-5x - 3y - (-6x) - 2y$$



1.1 1.2 QP

Albert wants to simplify the expression:
 $8(3-y) + 5(3-y)$
 Which of the following is equivalent to the expression above?

☐ A. $39-y$
☐ B. $13(3-y)$
☐ C. $40(3-y)$
☐ D. $13(6-2y)$

Albert wants to simplify the expression:
 $8(3-y) + 5(3-y)$
 Which of the following is equivalent to the expression above?

A. $39-y$ 5
 B. $13(3-y)$ 14
 C. $40(3-y)$ 0
 D. $13(6-2y)$ 2

- What should the teacher gather from the student responses?
- Are there any follow-up pre-test questions a teacher might ask?



Quick Poll

Express $3 \cdot 3^3$ as a power.

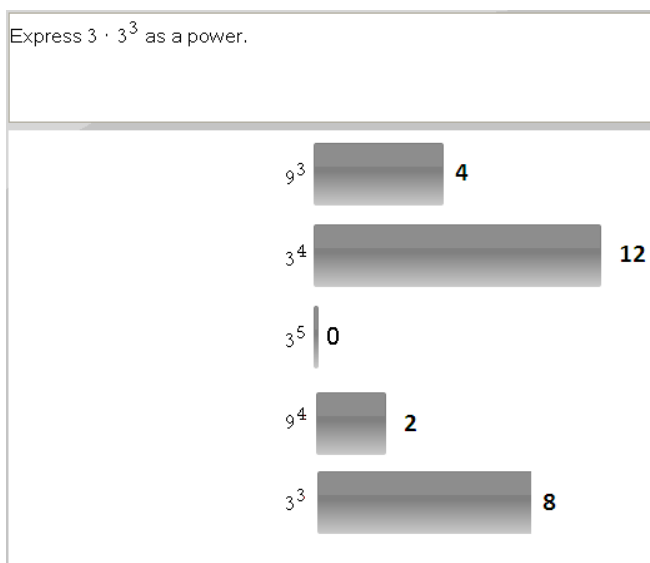
☒ 9^3

☐ 3^4

☐ 3^5

☐ 9^4

☐ 3^3



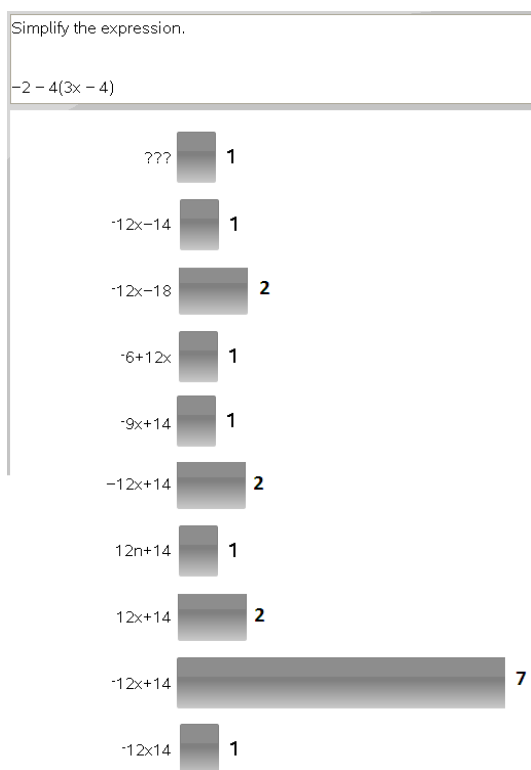
- Should the teacher have included any additional possible responses?
- Are there any student responses that surprised you?
- How could the teacher use TI-Nspire to begin the lesson?

Sample Student Response: Remediation Questioning

Quick Poll

Simplify the expression.

$-2 - 4(3x - 4)$



Note: You are able to mark more than one answer correct in the Student Data, which can then be saved to the Portfolio.

- During a discussion with the class, which responses should the teacher “mark correct”?
- What discussion with the class can happen around the incorrect responses?


Sample Student Response: During the Lesson

1.1 1.2 QP

Write an expression equivalent to $8(3-y)+5(3-y)$.

Student: Type response here.

Write an expression equivalent to $8(3-y)+5(3-y)$.

$13(3-y)$	5
$39-13y$	3
$13(3-x)$	2
$39-y$	2
$(24-8y)+(15-5y)$	1
$13(3+y)$	1
$24+15$	1
$39(y)$	1
$39-3y$	1
$5(3-y)+8(3-y)$	1
$7(3-y)+5(3-y)$	1
$8(3+y)+3(5+y)$	1

- Which responses should the teacher “mark correct”?
- What topics of discussion can the class review or preview because of the student responses?

I have learned more about writing the domain and range of a function. 1

My question is working on more complicated problems like number 8 on the bell ringer.

I have learned that a zero in the denominator is bad. 1

My question is how do you find the domain and range of a graph like the one on this quiz?

I have learned how to visualize graphs and their transformations quickly and clearly. 1

My question is absolute value graphs

I have learned how to picture and draw graphs just by looking at the equation 1

My question is how do i work out the problems with division in the equation

I have learned how to find domain and range of equations without using the calculator 1

My question is how do you do the equations that are fractions

I have learned how to find domain of a graph with a denominator 1

My question is keeping the reflections straight: $-f(x)$, $f(-x)$, etc

I have learned how to find the domain 1

My question is how to look at the graph and determine the range

I have learned how to draw graphs by hand and how to work $f(x)$ problems. 1

My question is how do you know when to use $[]$ and when to use $()$

- How can the teacher use the student responses to “I have learned ...” and “My question is ...” to proceed with the lesson?



1.1 1.2 1.3 *QP

$(x+3)^2 = x^2 + 9$

☒ True

☐ False

#3

True 9

False 8

#3

True 0

False 17

- Upon receiving the student data for QP #3, the teacher noticed that the class was split in their responses. The teacher asked the students to discuss the poll with a different student in the classroom and resubmit a response. How does the role of the teacher in this scenario differ from the traditional role of the classroom teacher?
- What are other ways that the teacher can use student data as formative assessment?



Graphing a Scatter Plot

TI PROFESSIONAL DEVELOPMENT

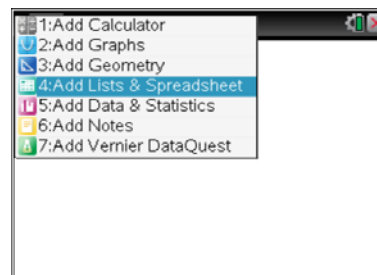
Activity Overview

This activity describes how to enter data into a Lists & Spreadsheet application and then generate a scatter plot of the data using Quick Graph. Information is also provided on graphing the data on a separate page using the Data & Statistics application.

Part One – Entering Data in a Spreadsheet

Step 1:

Press and select **New Document** to start a new document.



Step 2:

Choose **Add Lists & Spreadsheet**.

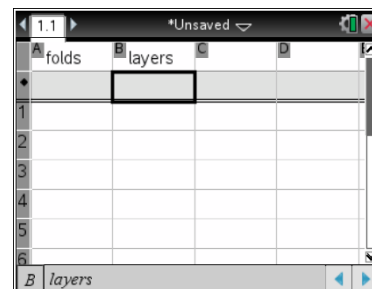
Note: To add a Lists & Spreadsheet page to an existing document, press and choose **Add Lists & Spreadsheet**.

Alternatively, press and select .

Step 3:

In column A, press on the Touchpad to move to the cell at the top of column A. Be sure to move to the top of the column.

Alternatively, click in the cell at the top of column A.



Step 4:

Type the list name **folds** next to the letter A, and press .

Step 5:

Move to the cell at the top of column B, enter the list name **layers**, and press .

Note: The data entered below are from the “paper folding” activity that many teachers use to introduce exponential functions.



Graphing a Scatter Plot

TI PROFESSIONAL DEVELOPMENT

Step 6:

Enter data, as shown, into the two lists.

Place the cursor in cell A1 for column A or in cell B1 for column B.

Enter the first number.

Note: Pressing **enter** or **▼** will move the cursor to the next cell in the column.

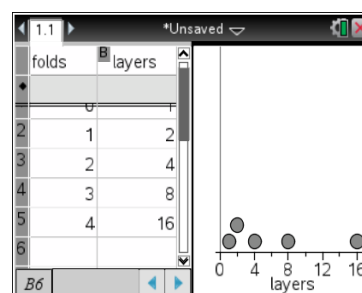
	folds	layers
1	0	1
2	1	2
3	2	4
4	3	8
5	4	16

Part Two – Graphing Data with Quick Graph

Step 7:

To create a plot on the same page, ensure that the cursor is anywhere in column A or B and select **Menu > Data > Quick Graph**.

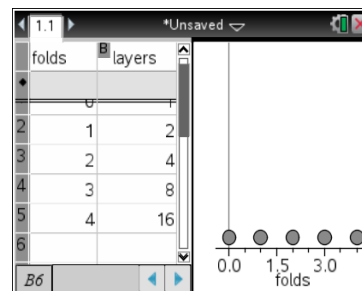
The screen will automatically split vertically—the Lists & Spreadsheet application remains in the left work area while a Data & Statistics application is inserted into the right work area. A dot plot appears. This is a plot of the data in the list in which the cursor was located when Quick Graph was selected.



Note: The dark rectangle around the Data & Statistics application work area indicates that the application is active. To move from one work area to another, press **ctrl** **tab** or use the Touchpad and press to select the desired application.

Step 8:

To change the list that is graphed, move the cursor over the horizontal axis label. The message **“Click or Enter to change variable”** will appear.



Step 9:

Press or **enter** to display the variables—in this case, the names of the lists entered in the spreadsheet. Press or **enter** to select the variable **folds**. A dot plot of the **folds** data is graphed.



Graphing a Scatter Plot

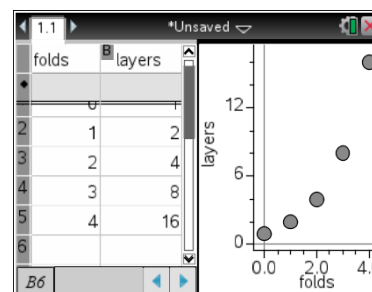
TI PROFESSIONAL DEVELOPMENT

Step 10:

Move the cursor to the middle of the left side of the graph screen.

The message “**Click or Enter to add variable**” will appear. Press

or **enter** to display the variables. Press **▼** to highlight the variable **layers**. Press or **enter** to select the variable **layers**.



Note: Had both lists been selected before the Quick Graph tool was selected, a scatter plot would have been graphed rather than a dot plot.

Step 11:

To select both lists and graph a scatter plot with Quick Graph, first delete the current plot.

Otherwise, two separate plots will be displayed on the right side of the screen. Click in the

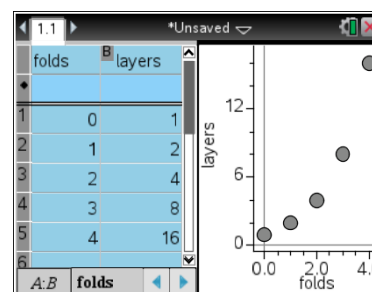
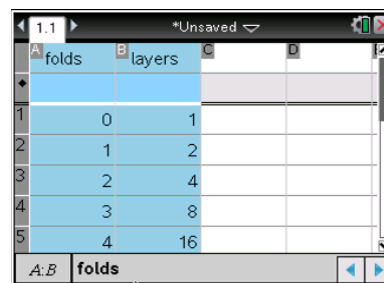
Data & Statistics application work area on the right side of the page. Press **ctrl** **K** to

select the application. The bold outline around that application will flash. Press **del** to

delete the plot.

- To select multiple lists, place the cursor in a cell in the **folds** column, and continue to press **▲** until the entire list is highlighted.
- Press and hold **⇧shift**, and press **▶** to highlight both lists.
- Release the **⇧shift** key.
- Select **Menu > Data > Quick Graph**.
- A scatter plot will be created with the list to the left as the independent variable list.

Note: To clear all data in one or more lists, first select the list(s) as described above. Then, select **Menu > Data > Clear**.

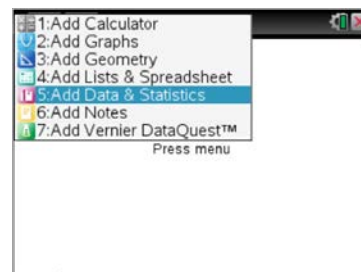




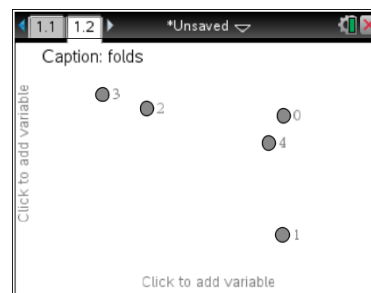
Part Three – Graphing Data on a Separate Data & Statistics Page

Step 12:

After entering data in a Lists & Spreadsheet page, press **ctrl** **doc** to add a new page to the document. Select **Add Data & Statistics**.



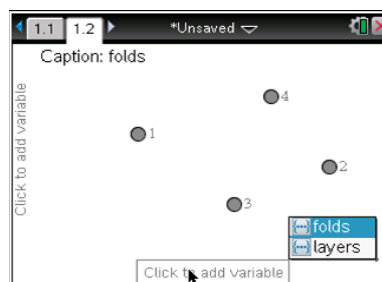
Note: When the Data & Statistics page is added, the list name that appears next to the word “Caption” is the first list name, alphabetically, in the spreadsheet. However, if there are any categorical data lists, the first categorical list name, alphabetically, will be displayed when the Data & Statistics page is added.



Step 13:

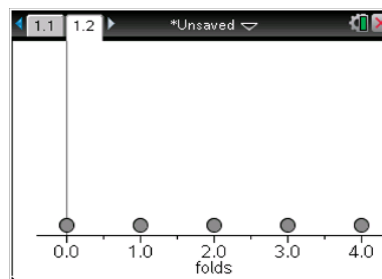
To choose the variable for the horizontal axis, move the cursor to the “Click to add variable” message at the bottom of the screen. Press **2nd** to display the variables.

Alternatively, after adding the Data & Statistics page, press **tab** to display the variables available for the horizontal axis.



Step 14:

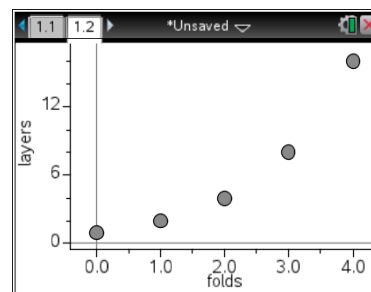
Select the variable **folds**.



Step 15:

Move the cursor to the middle of the left side of the screen. When “Click or Enter to add variable” appears, press **2nd** to display the variables. Select the variable **layers**.

Alternatively, after adding the horizontal axis variable, press **tab** to display the variable choices for the vertical axis.





Demonstration – Travel Distance

TI PROFESSIONAL DEVELOPMENT

Objective

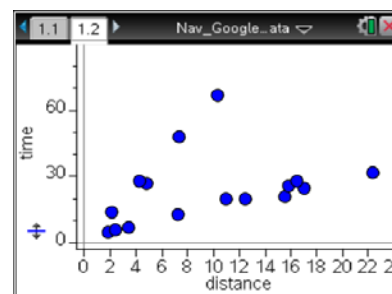
- Model an inquiry-based lesson that integrates math and science using many features of the TI-Nspire™ Navigator™ System.

About the Lesson

- Participants will take on the roles of students to experience an inquiry lesson on travel distance using the TI-Nspire Navigator System.
- Participants will be exposed to the various components of the TI-Nspire Navigator System as directed by the instructor.

TI-Nspire™ Navigator™ Features

- Sending a Document
- Class Capture
- Sending Quick Poll questions
- Student Data
- Review Workspace
- Aggregating student generated data



TI-Nspire™ Technology Skills:

- Opening a TI-Nspire document
- Navigating a TI-Nspire document
- Collaboratively building a list of data to plot
- Creating a scatter plot

Travel Distance Activity

This is a demonstration activity, but the steps are included here for later use by the participants in their own classrooms.

1. Open the TI-Nspire document *Travel_Distance_QP.tns*.
2. Start the Poll, and ask students to enter their estimated travel distance and time from their home to their place of work.
3. After students submit their data, display the data in the List view. Right-click on the data, and select **Send Table to new Document**.
4. Send the TI-Nspire document with the aggregated data to the participants.
5. Ask a few Quick Poll questions:
 - Who traveled the farthest?
 - Who spent the most time en route?
6. Ask students to set up a scatter plot using a Data & Statistics page. Use Class Capture to monitor their progress.
7. Ask a Quick Poll question: What did you choose for the independent variable?

TI PROFESSIONAL DEVELOPMENT

- ## Notes for Today's Activity



Practice Assessment Documents

TI PROFESSIONAL DEVELOPMENT

Objectives

- To become more familiar with the available types of assessment questions for TI-Nspire™ documents.
- To practice sending and collecting TI-Nspire documents.
- To practice saving documents containing assessment questions to the Portfolio.
- To practice opening class documents with assessment questions and reviewing the class results.

About the Lesson

- Participants will role-play in this activity as a teacher and/or a student.
- The purpose of this activity is not to create the assessment documents but to use them once they are created.

TI-Nspire™ Navigator™ Features

- Sending a Document
- Class Capture
- Collecting a Document
- Portfolio Workspace
- Student Data
- Review Workspace

TI-Nspire™ Technology Skills:

- Opening a TI-Nspire™ document
- Navigating a TI-Nspire document
- Answering various question types in a TI-Nspire document

Tech Tips:

- To work with a TI-Nspire document that has been collected, right-click on the collected document in the Class Record.

Lesson Materials:

Equipment for the TI-Nspire™ Navigator™ System

- Computer with TI-Nspire™ Navigator™ Teacher Software (for a pair of participants) with two USB ports
- Two TI-Nspire™ learning handhelds per participant
- Standard A to Mini-B USB cables

Equipment for the TI-Nspire™ Navigator™ NC System

- Computer with TI-Nspire™ Navigator™ NC Teacher Software and TI-Nspire™ Student Software



Practice Assessment Documents

TI PROFESSIONAL DEVELOPMENT

Roles

TI-Nspire™ Navigator™ System

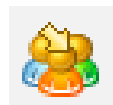
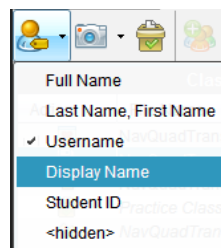
Working in pairs, one participant will assume the teacher role—the other, the student role. The “teacher” will operate the computer, and the “student” will operate two TI-Nspire handhelds. Each participant will have an opportunity to change and experience both roles.

TI-Nspire™ Navigator™ NC System

Working in groups of three, assign one role as the teacher and two roles as the students. The “teacher” will use the TI-Nspire Navigator NC Teacher Software, and the “students” will use the TI-Nspire Student Software. Each participant will have an opportunity to change and experience both roles.

Sending the Document

1. The teacher starts the TI-Nspire™ Navigator™ Teacher Software.
2. Click the **Student Name Format** icon and select **Display Name** to change how each student will display in all Workspaces.
3. Begin class.
4. Send one of the assessment documents provided by your instructor to all students in the class.



Reflection:

Why do you want to send the file to all students instead of only those who are logged in?

5. Have your “students” log in to the Practice Class and work through the assessment document. Ask them to make at least one mistake so that you can later view incorrect and correct responses in the Review Workspace.

Reflection:

- How do the students know that they have received the document that was sent?
- How does the teacher know who has received the document that was sent?
- Where should the students expect to find the document that was sent?

Class Record		
Action	File Name	Status
	NavLinearTransfor...	2 of 5

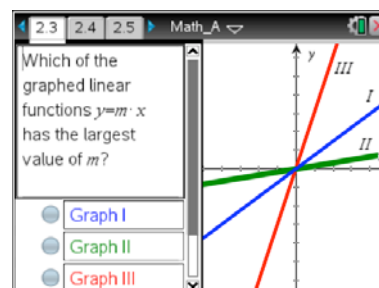
Jon
 Deb
 Marco
 Sonja
 Raymone



Practice Assessment Documents

TI PROFESSIONAL DEVELOPMENT

6. Monitor students using the Class Capture tool.
7. The document has several different question types.
 - The circles preceding each option on a Multiple Choice question indicate that there is only one correct answer for this question.
 - The squares in front of each choice on a Multiple Choice question indicate multiple correct answers are possible.
 - To receive full credit for this type of question, the student must select all correct answers.

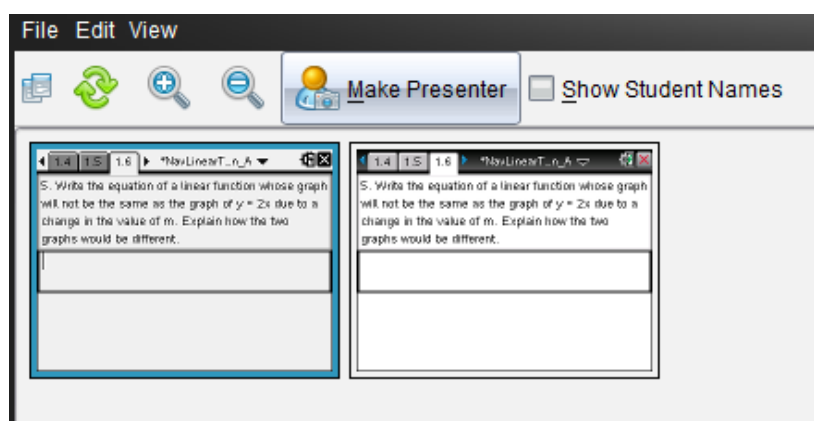


8. Page 1.6 is being used to send a message to the student.

Reflection:

What are some uses of a Notes page like this at the end of an assessment?

9. Using the Class Capture tool, determine when the class is finished by checking to see that all screen captures show the last page of the document.

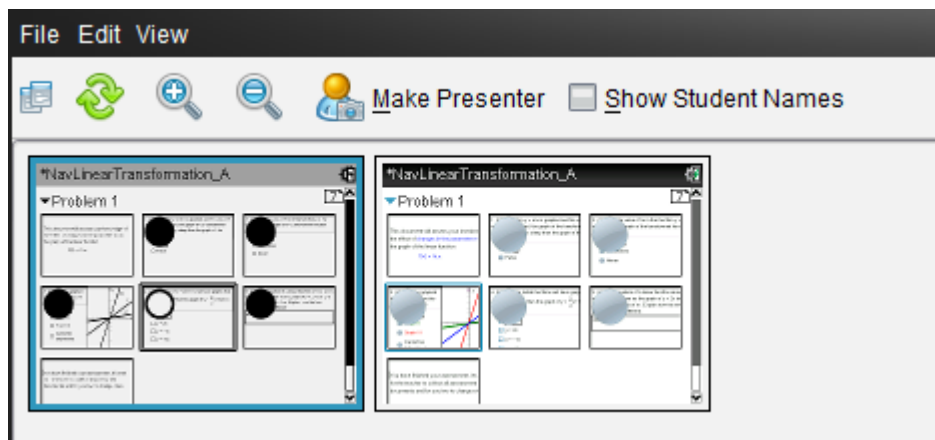




Practice Assessment Documents

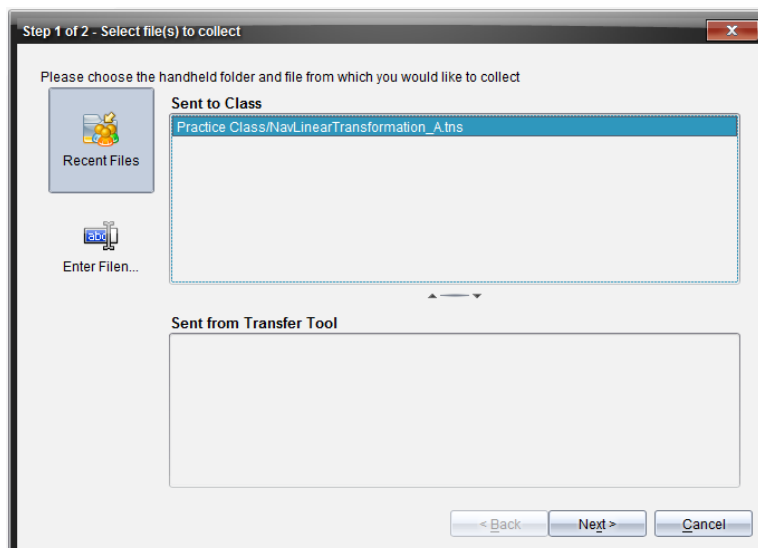
TI PROFESSIONAL DEVELOPMENT

Tip: Alternatively, ask students viewing the document to press **Ctrl+up arrow** when they have finished answering the questions. This displays a thumbnail view of the pages. An added benefit is the ability to determine that the student has answered all of the questions. Notice in the left screen capture below there is an empty circle. The empty circle indicates that no answer has been selected for the question.



Collecting the Document

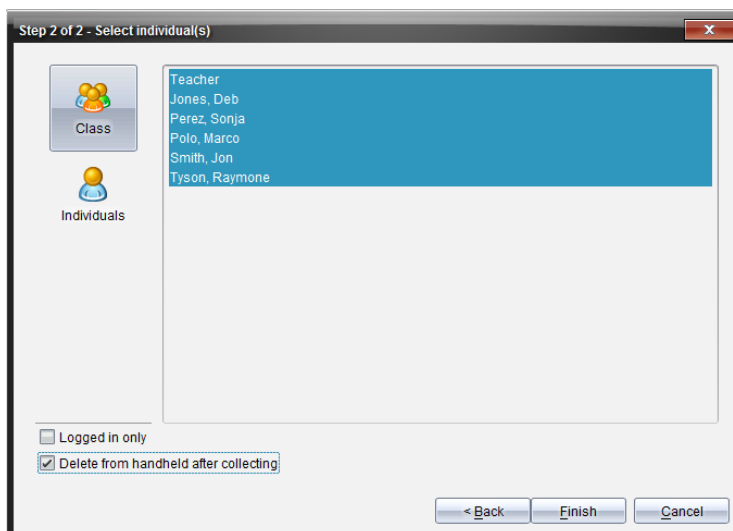
1. To collect the document, click the **Collect from Class** icon.
2. Select the appropriate document from those listed.
3. Click **Next**.



- Collecting through the **Collect from Class** icon gives you the option of deleting the document after collecting it from the student handhelds. You can also choose to only collect from some members of the class.

Practice Assessment Documents **TI PROFESSIONAL DEVELOPMENT**

- Click **Finish** at the bottom of the dialog box.



Reflection:

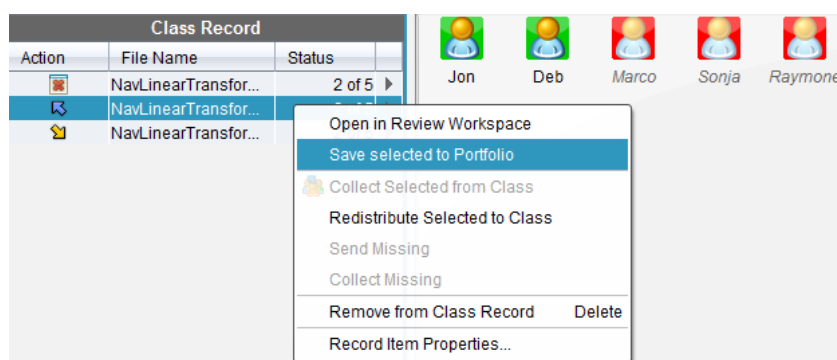
Discuss when you might want to delete the document and when you might want to leave the document on the student handhelds.

- Select a File Name in the Class Record to view the student icons. Green student icons have successfully transferred the file back to TI-Nspire Navigator. Red icons have not.

Class Record							
Action	File Name	Status					
	NavLinearTransfor...	2 of 5 ▶					
	NavLinearTransfor...	2 of 5 ▶	Jon	Deb	Marco	Sonja	Raymone
	NavLinearTransfor...	2 of 5 ▶					

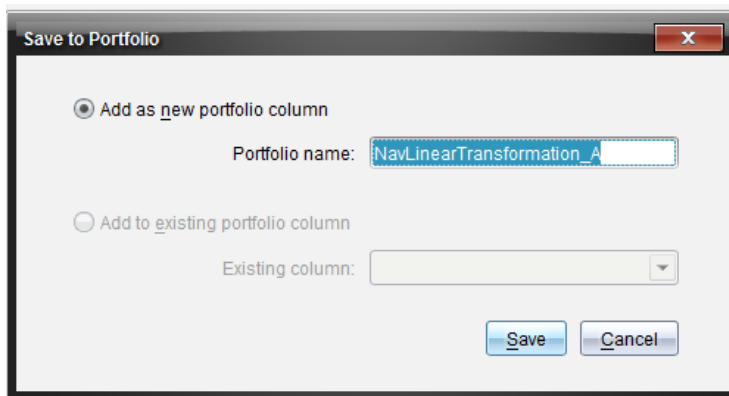
Saving the Results in the Portfolio

- Right-click on the Collected File Name in the Class Record section of the Class Workspace, and choose **Save selected to Portfolio**.
 - Be sure to select the File Name on the row that displays the **Collect from Class** Action.





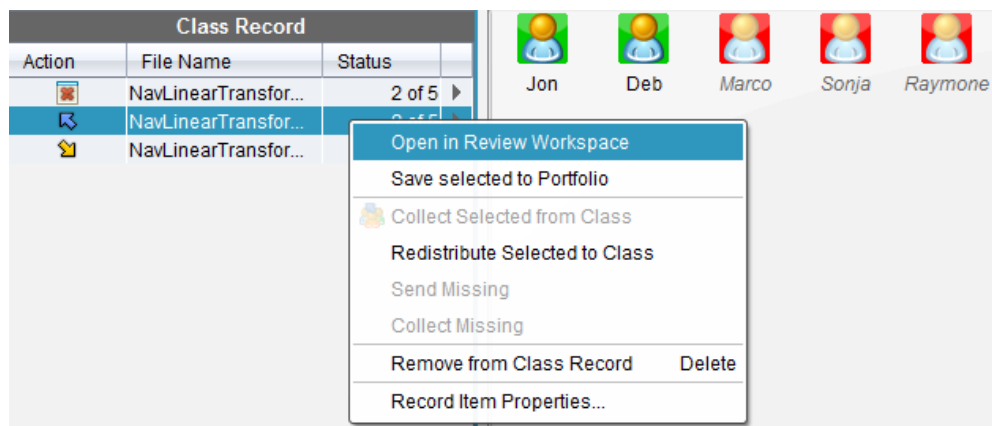
6. If desired, change the name of the portfolio column.



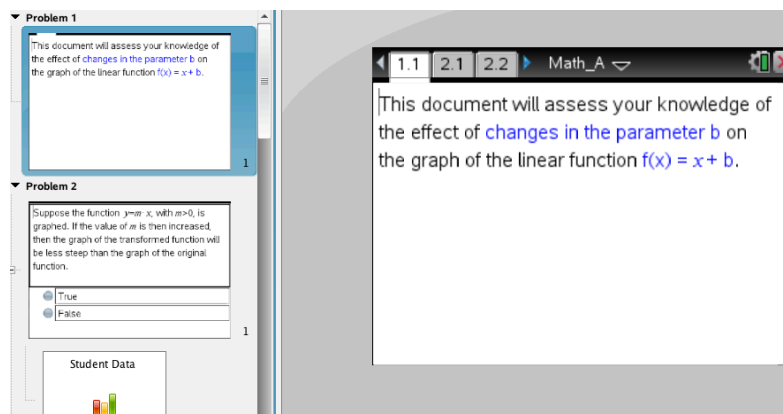
Note: The Portfolio Workspace will be discussed in detail later in the workshop.

Displaying Class Results

7. Right-click on the File Name in the Class Record section of the Class Workspace, and select **Open in Review Workspace**.

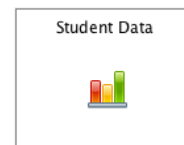


Page Sorter
pane of
Review
Toolbox



Practice Assessment Documents TI PROFESSIONAL DEVELOPMENT

8. Using the Page Sorter view of the document, click on the Student Data icon to display the results for the associated question.



9. Scroll through the Page Sorter view (or use the down arrows on the computer keyboard) to move through the document and to display the Student Data for each question.

Reflection:

When you show the Class Results for problem 5, why are none of the answers marked correct?

Changing Roles

Now change roles. Return to the beginning of this activity, and repeat all of the steps. But this time, send a different assessment document.

Notes for the TI-Nspire Navigator NC System:

The teacher can send any type of document through TI-Nspire Navigator NC Teacher Software, even though students can only open TI-Nspire or PublishView documents through TI-Nspire Student Software.

All documents sent through TI-Nspire Navigator NC Teacher Software will be located in the TI-Nspire class folder on the student computer.

The teacher can collect any type of document and save it to the Portfolio. For a non-TI-Nspire document, students must save their work before the teacher collects the document. In the Portfolio Workspace, right-click on a non-TI-Nspire document and choose "Open for Editing" to view the document in its native application.

Assignment Summary	BR7_1.1m	Lab 3.2.1m	How Much	Lab 3.1.1	Lab 3.1.2
nn Actions					
s Average	88%	---	---	---	---
	11-03	11-03	11-03	11-01	11-01
71307					
12156	100%				
75183	80%				
95655	80%				
11979	60%				
25071	100%				
3158	80%				
00179	100%				
88753	100%				

Edit Score
 Open in Review Workspace
 Open for Editing

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Inserting an Image into a TI-Nspire™ Document

TI PROFESSIONAL DEVELOPMENT

Activity Overview

In this activity, you will learn how to use the TI-Nspire™ family of Teacher Software to insert images into the Graphs and Geometry applications. You will also learn how to move, resize, compress, and stretch an image, as well as make it appear more transparent.

Materials

- TI-Nspire™ Teacher Software

Step 1:

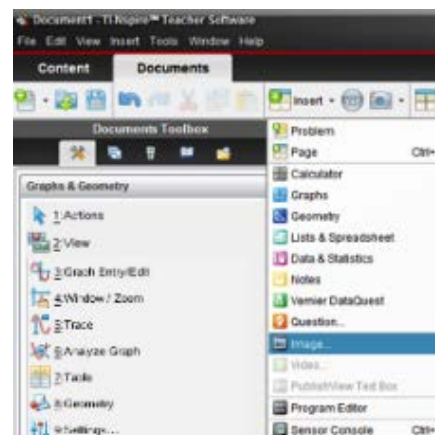
Open the Teacher Software. If the Welcome Screen appears when the software is opened, click to create a new document with a Graphs application as its first page. Otherwise, insert a Graphs application by selecting **Insert > Graphs**.

Note: Images can be inserted into Graphs, Geometry, Data & Statistics, Notes, and Question applications.

Step 2:

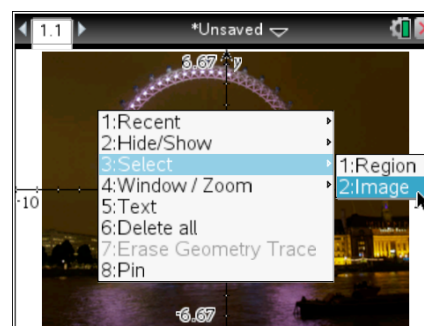
Insert an image into the Graphs application by selecting **Insert > Image**. A selection of images is preloaded in the **My Documents > TI-Nspire > Images** folder. Select **Ferris Wheel.jpg** and click Open.

Note: Although the Teacher Software comes with a selection of preloaded images, all jpg, jpeg, bmp, and png images are supported. The optimal format is .jpeg 560 × 240. Larger images may take the document longer to load on the handheld. Images appear in grayscale for TI-Nspire™ handhelds with Touchpads and Clickpads.



Step 3:

Images can be moved, resized, and vertically or horizontally stretched or compressed. To select an image in the Graphs, Geometry, or Question application, right-click on the image and choose **Select > Image**. To select an image in the Notes application, click the image. To move the image, grab and move the image. To resize the image, grab and move a corner. To vertically stretch or compress the image, grab and move the top or bottom edge. To horizontally stretch or compress the image, grab and move the left or right edge.





Inserting an Image into a TI-Nspire™ Document

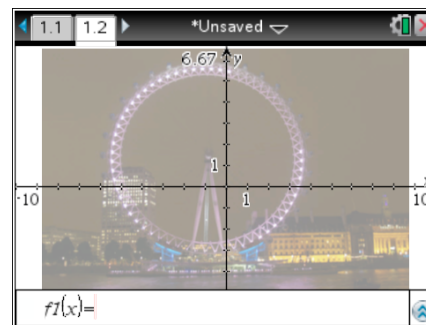
TI PROFESSIONAL DEVELOPMENT

Note: To right-click an object on a handheld, press **ctrl** **menu**. To grab an object, press **ctrl** . To let go of an object, press **esc**.

Step 4:

To make an image appear more transparent, insert the image in a Geometry application, and then change the page to a Graphs application.

Select **Insert** > **Geometry**. Then insert an image by selecting **Insert** > **Image**. Again, choose **Ferris Wheel.jpg**. To change the Geometry application to a Graphs application, select **View** > **Graphing**.





Resources

TI PROFESSIONAL DEVELOPMENT

Objectives

- Gain comfort with the Content Workspace of the TI-Nspire™ Navigator™ Teacher Software.
- Investigate resources to support the use of the TI-Nspire™ Navigator™ System in the classroom.

About the Lesson

- Participants will visit websites containing resources supporting their TI-Nspire Navigator use in the classroom including:
 - Support for the TI-Nspire Student Software;
 - Support for the TI-Nspire Navigator System; and
 - Classroom-ready lessons.

TI-Nspire™ Technology Skills:

- Preview lessons and documents using the TI-Nspire Navigator Teacher Software
- Download a TI-Nspire lesson and document

Lesson Materials:

- Computer with Internet access and TI-Nspire Navigator Software

TI-Nspire™ Navigator™ Teacher Software Features

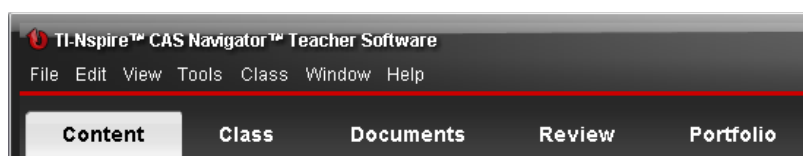
- Browse for lessons at Math Nspired, Science Nspired, and TI Math
- Preview and download lessons and documents
- Send a document to the class or to an individual handheld through the Content Workspace

Overview of Workspaces

There are five different workspaces in the TI-Nspire Navigator Teacher Software:

1. Content
2. Class
3. Documents
4. Review
5. Portfolio

To move between the workspaces, click on the appropriate tab.



Each workspace has a specific purpose, but they work together to create a complete package for the TI-Nspire Navigator classroom. Depending on the selected workspace, the menus, options, and icons will change appropriately.

The focus of this activity will be the Content Workspace. Here, we will identify activities for the classroom, with brief use of the Documents Workspace, to interact with a downloaded activity.

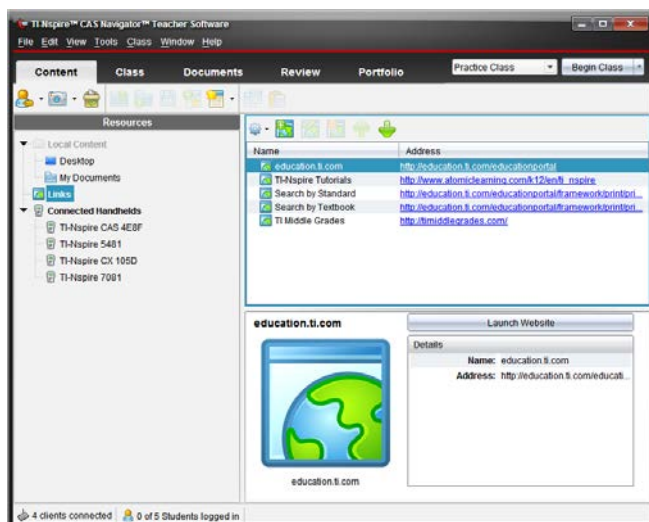


Accessing Resources using the Software

Access many online resources from within the TI-Nspire Navigator Software.

1. Open the TI-Nspire Navigator Teacher Software.
 - If necessary, close the “Welcome Screen” by clicking the red X in the upper right hand corner.

The software usually opens in the Documents Workspace, but we want to view locations for various content. Click on **Content** to open the Content Workspace.



2. The Resources column on the left side of the window contains various resources broken down into three categories: Local Content, Links and Web Resources, and Connected Handhelds.
 - Local Content: Browse your computer, and create shortcuts to folders on your computer for easy access to your files.
 - Links (and Web Resources): Links to TI resource material and personalized links can be added and removed.
 - Connected Handhelds: Browse the documents of connected handhelds (This will not appear if no handhelds are connected.)

Video Tutorials for the TI-Nspire Handheld, Software, and Navigator System

1. Visit the **Atomic Learning** website by clicking **Links** in the Resources column, and then clicking the “TI-Nspire Tutorials” pre-loaded web address in the right-hand window
[\(www.atomiclearning.com/k12/ti_nspire/\)](http://www.atomiclearning.com/k12/ti_nspire/).





Resources

TI PROFESSIONAL DEVELOPMENT

- Upon arriving at the Atomic Learning website, you can view short video tutorials that highlight skills for the TI-Nspire handheld and computer software, including:

- Creating and saving a new document
- Finding and opening a document
- Tracing a graph

- To view the available tutorials for TI-Nspire Navigator, click on the “TI-Nspire Navigator” link on the Atomic Learning website.

- You will be directed to a list of short video tutorials on TI-Nspire Navigator skills, including:

- Creating a class
- Starting a class session
- Sending, collecting, and deleting documents
- Using a Quick Poll
- Using the Portfolio
- Using Class Capture and Live Presenter



TI-Nspire™ Handheld Tutorials

TI-Nspire™ Software Tutorials

A. Basics		
	Key #	Length
1. Using the CK keypad <i>Revised</i>	85834	6:25
2. Using the TI-Nspire™ with Touchpad keypad	85835	6:28
3. Using the Scratchpad <i>Revised</i>	85836	3:17
4. Creating & saving a new document	85837	1:38
5. Finding & opening a document	85838	2:36
6. Changing page layout & position	85839	2:55
7. Changing document & system settings <i>Revised</i>	85840	4:30
8. Accessing & using the catalog	85841	3:30
9. Using templates in Notes	85842	6:47
10. Transferring files and screen captures <i>Revised</i>	85843	3:18
11. Updating the Handheld OS	85844	1:39

TI-Nspire™ Navigator Tutorials

TI-Nspire™ Navigator™		
A. Using TI-Nspire™ Navigator™		
	Key #	Length
1. Creating a class	72077	9:19
2. Starting a class session	72078	1:20
3. Sending, collecting, and deleting documents	72079	2:41
4. Using a poll	72080	3:17
5. Using the Student Portfolio	72081	2:35
6. Using Screen Capture and Live Presenter	72082	3:01
7. Creating a report using Class Analysis	72083	1:34
8. Exporting student responses from Class Analysis	72084	1:31

Add a Personal Web Link

- While viewing the pre-loaded web links, click on the “Add Link” icon above the existing links.
- Type one of the following names and web addresses and click **Add Link**.
 - For Math Nspired, and web address is <http://mathnspired.com>.
 - For Science Nspired, the web address is <http://sciencenspired.com>.



Add Link

Name

Math Nspired

Address

<http://mathnspired.com>

Add Link

Cancel

- A new link is added to your list of web links.

One of the reasons to add this website to your personal list of links is to easily gain access to additional video tutorials on TI-Nspire technology. By visiting the Resource Center selecting Video Tutorials, you will be directed to a multitude of videos related to interacting with TI-Nspire documents.



About Math Nspired What's New Resource Center Getting Started Video Tutorials ▶ Webinars TI Professional Development	<h3>Video Tutorials</h3> <p>Learn as you go with online video tutorials that are built into many of the Math Nspired lessons.</p> <table border="1"> <tr> <td>Preview Videos</td> <td>Automatically plays when you go to a lesson page giving you an idea of what the lesson is all about. Also available for download from the unit pages.</td> </tr> <tr> <td>Tech Tip Videos</td> <td>Math Nspired just-in-time video tutorials that show you step-by-step how to use TI-Nspire technology.</td> </tr> </table>	Preview Videos	Automatically plays when you go to a lesson page giving you an idea of what the lesson is all about. Also available for download from the unit pages.	Tech Tip Videos	Math Nspired just-in-time video tutorials that show you step-by-step how to use TI-Nspire technology.
Preview Videos	Automatically plays when you go to a lesson page giving you an idea of what the lesson is all about. Also available for download from the unit pages.				
Tech Tip Videos	Math Nspired just-in-time video tutorials that show you step-by-step how to use TI-Nspire technology.				

Pre-Made Lessons for Classroom Use

1. Visit Math Nspired or Science Nspired using the link that was just created, and select a subject.



Middle Grades Math, Algebra 1, Geometry, Algebra 2, Precalculus, Calculus, Statistics



Life Science, Earth Science, Physical Science, Biology, Chemistry, Physics

2. Select a unit from the list. A table appears with an image from each activity. The table contains links to download, recommend, and save each activity. It also identifies each activity type:

Icon	Type	Description
	Bell Ringer	Bell ringers are short lessons designed to help transition quickly into class after the bell rings.
	Action Consequence Simulation	Interactive, engaging lessons allow students to perform actions on a mathematical object or scientific simulation, observe consequences, and make conjectures. Each lesson contains a pre-made TI-Nspire™ document, a Student Activity, and Teacher Notes.
	Create Your Own	In addition to the Student Activity and Teacher Notes, the lesson also includes step-by-step instructions on how to create the TI-Nspire document.
	Data Collection with Probes	Data Collection Labs give students the opportunity to collect and analyze real-world data with more than 50 data collection sensors from Vernier Software and Technology™.
	TI-Nspire™ Navigator™ Compatible	The Teacher Notes identify opportunities to use the TI-Nspire Navigator System, including opportunities for Quick Polls, Class Captures, and Live Presenter.

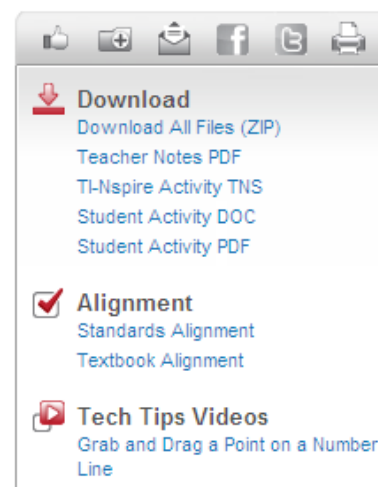


Resources

TI PROFESSIONAL DEVELOPMENT

3. Select an activity from the table. Each activity page shows objectives, relevant vocabulary, and additional information about the lesson. A video offers a preview of the lesson, and related lessons are recommended.

Icons above the Download section allow you to recommend, save, email, and print an activity. Links to Facebook and Twitter are also available. The Download section contains links to activity files. Links for Standards and Textbook Alignment and relevant Tech Tip Videos are also available.



4. Select the Standards Alignment link on the left. Select a set of standards from the drop-down box, and click **View Standards**. A list of performance/content standards appears for each grade, along with a list of the relevant strands and performance indicators.

Please select which set(s) of standards you wish to view:

All

-
- Achieve ADP End of Course Exam Content Standards
- Achieve, Inc. K-12 Benchmarks
- Alabama Assessment Standards
- Alabama Standards
- Alaska Assessment Standards
- Alaska Standards
- Alberta Standards
- Arizona Assessment Standards

Press and hold the Ctrl key to select multiple sets

View Standards

5. Select the Textbook Alignment link on the left. Select a textbook from the drop-down box, and click **View Textbooks**. A portion of the textbook's table of contents appears, which identifies the relevant chapter, section, lesson, and page numbers for the selected Math Nspired lesson.

Please select which textbook(s) you wish to view:

All

-
- TI:AM - Algebra 2 and Trigonometry c2009
- TI:AM - Geometry c2008
- TI:AM - Integrated Algebra 1 c2007
- TI:AW - Conceptual Physical Science Explorations c2007
- TI:AW - Conceptual Physics c2006
- TI:AW - Stats Modeling the World_c2004
- TI:CGP - California Algebra I c2007 (TE)
- TI:CGP - California Mathematics Course One c2007 (TE)

Press and hold the Ctrl key to select multiple sets

View Textbooks



Resources

TI PROFESSIONAL DEVELOPMENT

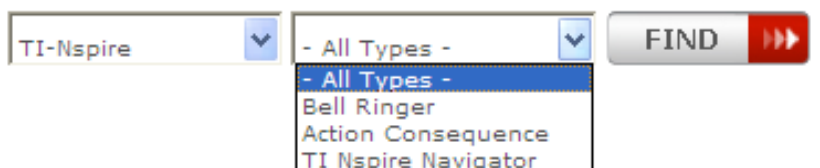
6. If you visited Math Nspired, visit TI Math at <http://timath.com>.

Additional lessons are available for Algebra 1, Geometry, Algebra 2, Precalculus, Calculus, and Statistics.



Each activity has step-by-step instructions, a student handout, a TI-Nspire document, and a see-it-in-action video of the TI-Nspire document.

After you have decided on a subject area, be sure to change the device type to “TI-Nspire” and press **FIND**.

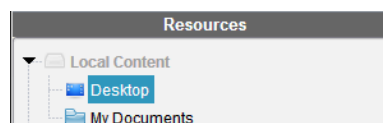


Note: You might want to add this link to your software links for easy access.

Downloading and Previewing a Lesson

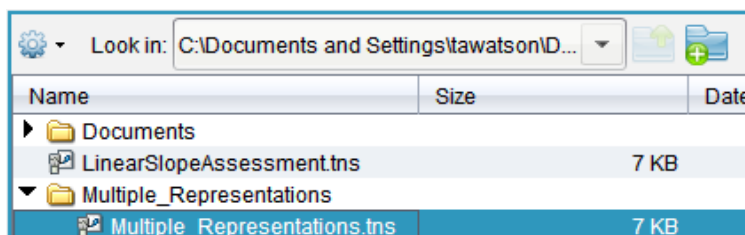
To make a decision on the value of a lesson, the lesson must be previewed by the teacher. The Student Activity and Teacher Notes, as well as the TI-Nspire document, can be downloaded to the teacher computer. The Student Activity and Teacher Notes can be previewed at the website. However, to preview a TI-Nspire document (.tns file) beyond a video clip provided on the website, the file must be downloaded to the teacher computer.

1. Select a lesson from the Math Nspired or Science Nspired website; and download the TI-Nspire document, Student Activity, and Teacher Notes separately. Save the documents to a location specified by your instructor.
2. After the documents have been downloaded, go to the Content Workspace. Browse your computer using the Local Content area of the Resources panel to locate the lesson files.



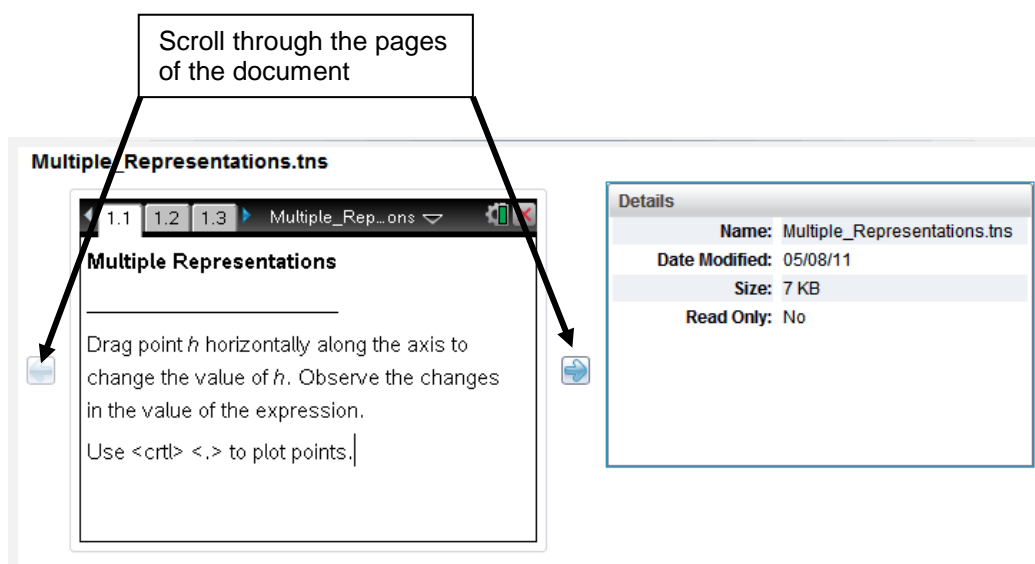
Note: Lesson files can be downloaded as one zip file. However, the files would need to be unzipped to be accessed in the Resources panel.

3. Select the TI-Nspire document for the activity.



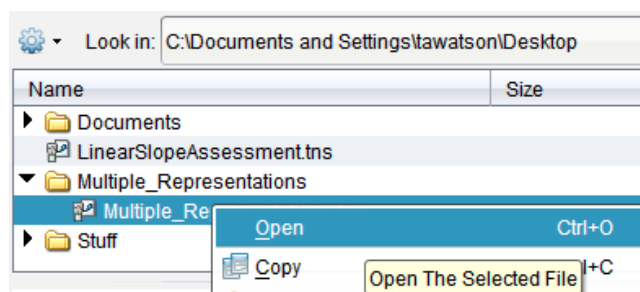


4. From within the Content Workspace, you will be able to preview the document using the arrows to scroll through the pages.

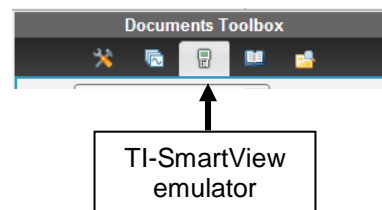


5. To interact with the document, you will need to open the document. Right-click on the file, and select **Open**.

- The document will open in the Documents Workspace.



6. Using the TI-SmartView™ emulator in the Documents Toolbox, you can interact with the document as if you were viewing it on a handheld.

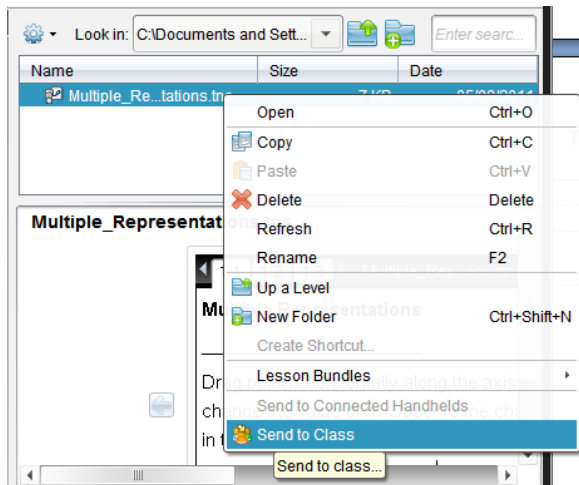




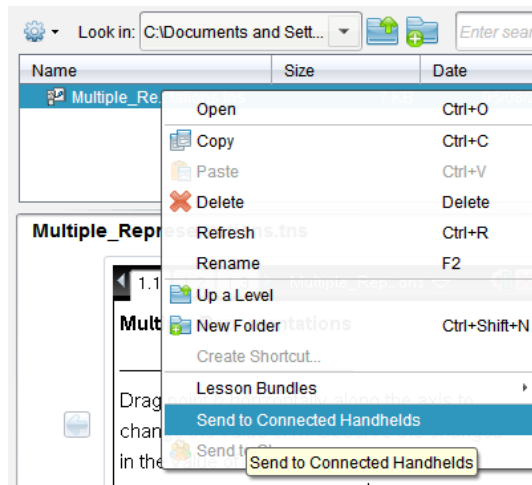
Sending a Document From the Content Workspace

1. Right-click on the document that is to be sent, then select **Send to Class**.

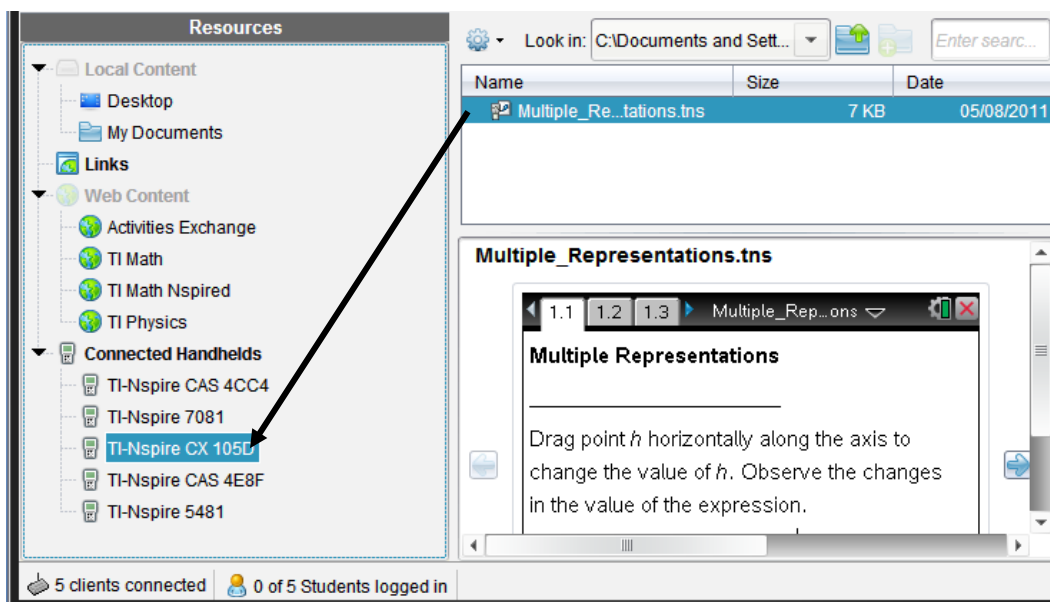
If the Navigator class is running, the option **Send to Class** will be available.



If the Navigator class is NOT running, the option **Send to Connected Handhelds** will be available.



If you would like to send a document to one particular connected handheld, drag the file to the connected handheld listed in the Resources pane.





Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

Objectives

- Demonstration of advanced questioning techniques (expressions with showing work, equations on image, dropping points, and lists).
- Practice using advanced questioning techniques.

About the Lesson

- Participants will answer advanced-question Quick Polls, and the instructor will provide an overview of the Review Workspace for each question.
- Participants will role-play as teacher and student to send and review advanced-question Quick Polls.
- Participants can change roles and repeat the lesson.

TI-Nspire™ Navigator™ Features

- Sending a Quick Poll
- Review Workspace

Demonstration of Various Question Types

As participants, you will be students in a classroom with a TI-Nspire Navigator System. The instructor will guide you through a few advanced questions and review the results in the Review Workspace. In this part of the activity, focus on interacting with the questions as a student. You will have the opportunity to try this in a teacher/student role at the completion of the demonstration.

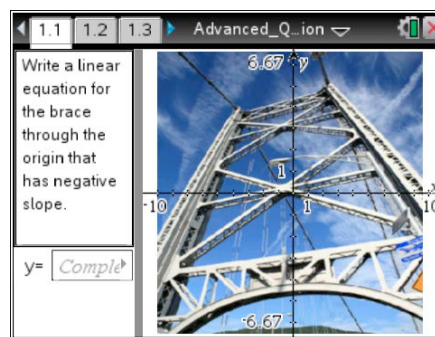
Roles

TI-Nspire™ Navigator™ System

Working in pairs, one participant will assume the teacher role—the other, the student role. The “teacher” will operate the computer, and the “student” will operate two TI-Nspire handhelds. Each participant will have an opportunity to change and experience both roles.

TI-Nspire™ Navigator™ NC System

Working in groups of three, assign one role as the teacher and two roles as the students. The “teacher” will use the TI-Nspire Navigator NC Teacher Software, and the “students” will use the TI-Nspire Student Software. Each participant will have an opportunity to change and experience both roles.



TI-Nspire™ Technology Skills:

- Creating a TI-Nspire document with Question pages
- Answering questions

Lesson Materials:

Equipment for the TI-Nspire™ Navigator™ System

- Computer with TI-Nspire™ Navigator™ Teacher Software (for a pair of participants) with two USB ports
- Two TI-Nspire™ learning handhelds per participant
- Standard A to Mini-B USB cables

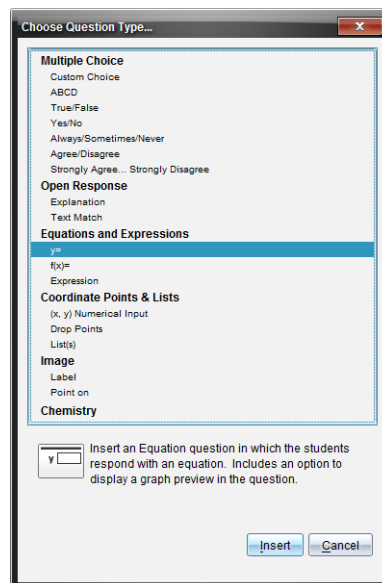
Equipment for the TI-Nspire™ Navigator™ NC System

- Computer with TI-Nspire™ Navigator™ NC Teacher Software and TI-Nspire™ Student Software

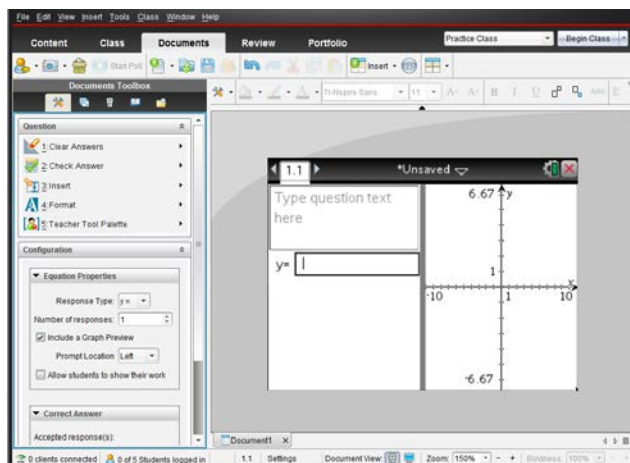


Equation on Image Question

1. Open the TI-Nspire Navigator Teacher Software, and begin the class. Have the “students” login.
2. Open a new TI-Nspire document, and insert a new Equations and Expressions question. Select **y=**.
3. In the Document Tools pane, there are several properties that you can modify:
 - **Response Type:** Choices are an equation in the form **y=** or **f(x)=**, or expression.
 - **Number of Responses:** Students may enter up to 5 equations or expressions.
 - **Include a Graph Preview:** After the student enters an equation, the graph can be included for the students to preview it on a split screen.



- **Prompt Location:** Allows you to control the location of the question.
- **Allow students to show their work:** Gives students space to show algebraic steps.
- If you would like to enter the correct answer to the question into the document, you can enter it in the Correct Answer box. Then choose whether or not to *Accept equivalent responses as correct*.
- For this activity, make the following selections:
 - Response type: “y =”
 - Number of Responses: 1
 - Include a Graph Preview: on
 - Prompt Location: Left

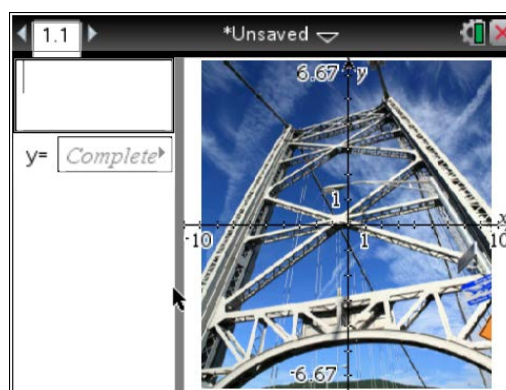
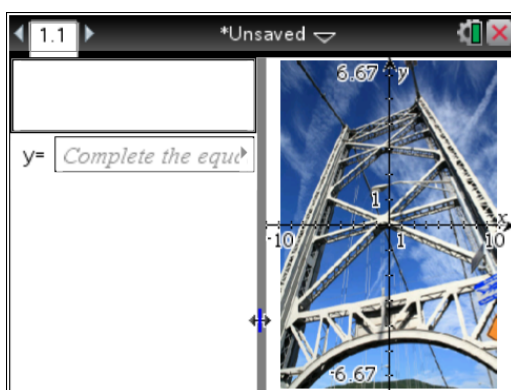
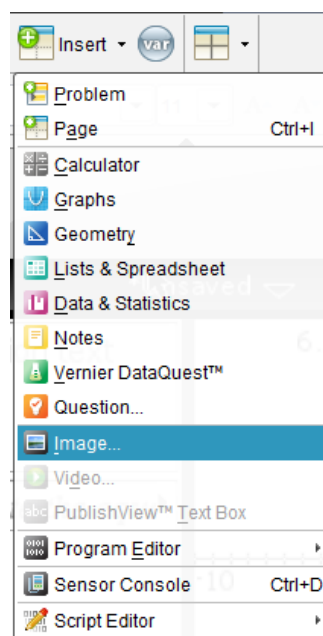




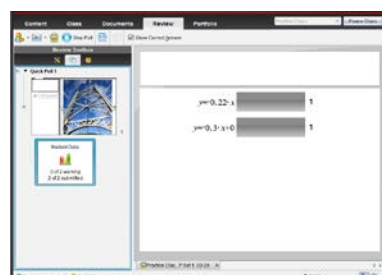
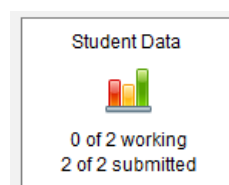
Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

4. Insert the bridge image on the coordinate plane.
 - Click on the graph side of the window to make it active.
 - Select **Insert > Image**.
 - If necessary, browse for the file "Bridge2.jpg".
5. After the image is inserted, the two work areas can be resized as desired.
 - Move the cursor to the middle of the page, and drag the margin to the left to make the image approximately two-thirds of the page and the equation entry work area approximately one-third.



6. Start the poll. Have the "students" enter and submit a linear equation for the brace through the origin that has negative slope.
7. When all students have submitted an answer, stop the poll.
8. Review the class results by clicking on the Student Data icon.
 - The default view is a bar graph for each unique answer submitted by the class.



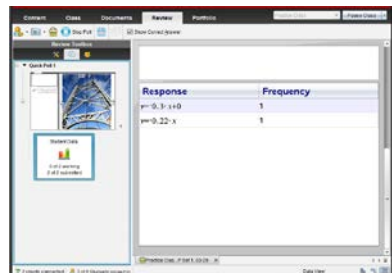
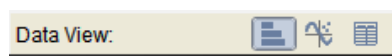


Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

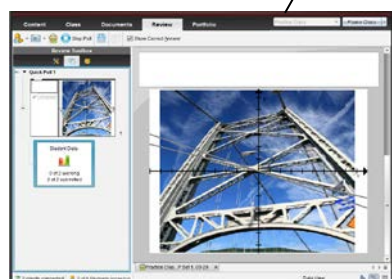
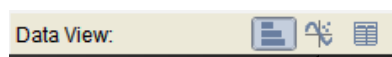
9. There are two other Data Views of the class results: graph and frequency table.

- Change the Data View to the frequency table.
- The equations are displayed in a frequency table view for discussion.



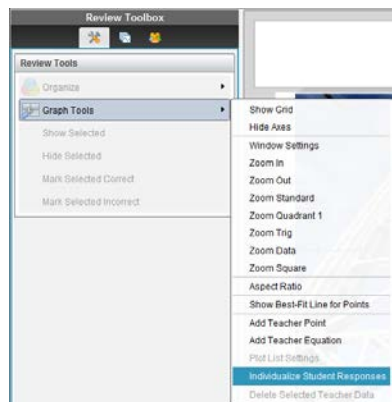
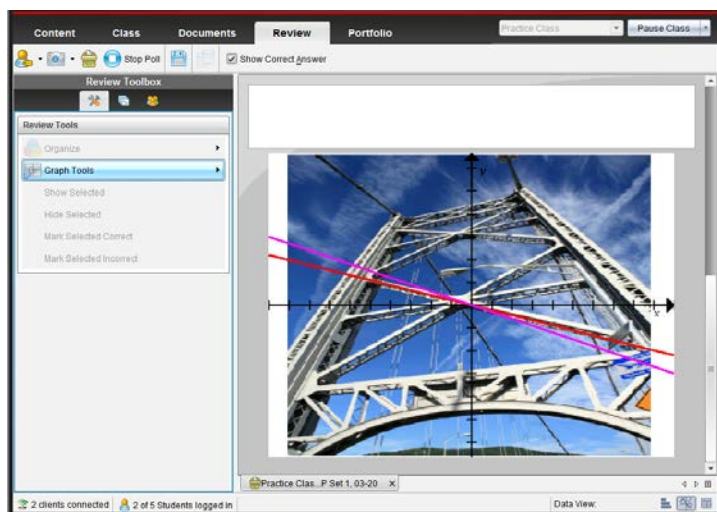
10. The graphical Data View will display all of the students' graphs as well as the image.

- Change the Data View to the graph.



11. To individualize the student graphs, select the Review Tools in the Review Toolbox. Then select **Graph Tools > Individualize Student Responses**.

- The graphs of the student equations will be displayed in a variety of colors.



12. If time permits, change teacher/student roles, and repeat this activity.

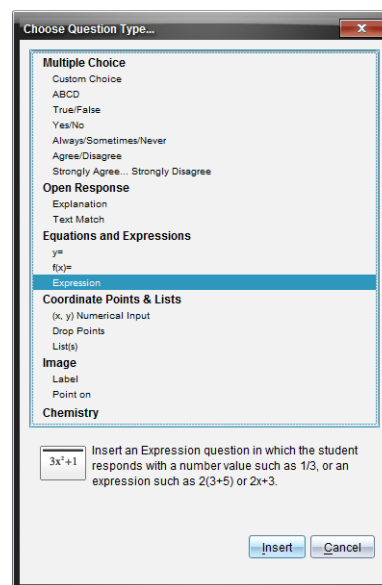


Advanced Questioning

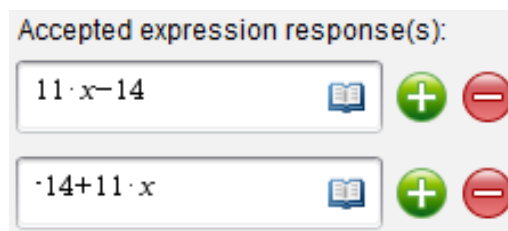
TI PROFESSIONAL DEVELOPMENT

Expression Question – Change teacher/student roles for this question.

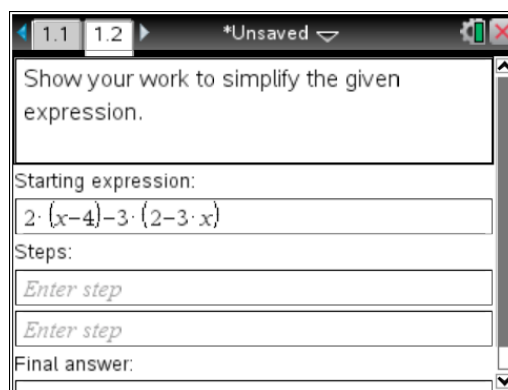
- Return to the Documents Workspace, and insert a new Equations and Expressions question. Select **Expression**.
- In the Document Tools pane, there are several properties that you can modify:
 - Response Type*: Students may enter an expression or a number.
 - Allow students to show their work*: Gives students space to show algebraic steps.
 - If you would like to enter a correct answer to the question, you can enter it in the Correct Answer box.
 - Accept equivalent responses as correct*: Uses a CAS engine to determine whether the student response is equivalent to the accepted expression response(s).



- For this activity, make the following selections:
 - Allow students to show their work: on
 - Accepted expression response(s):
 $11x - 14$ and $-14 + 11x$
 - Accept equivalent responses as correct: off



- In the text box, type: 'Show your work to simplify the given expression.'
- In the 'starting expression' box, type:
 $2(x - 4) - 3(2 - 3x)$



- Start the poll.
- Have the "students" answer the question, showing their work and submitting it when they are finished.

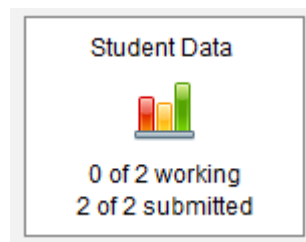




Advanced Questioning

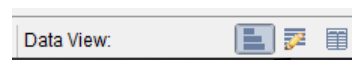
TI PROFESSIONAL DEVELOPMENT

7. When all students have submitted an answer, stop the poll.
8. Review the class results by clicking on the Student Data icon.
 - The default view is a bar graph for each unique answer submitted by the class.
 - If the Show Correct Answer option is selected, the correct student responses will be green.



Note: All accepted expression responses that the teacher entered will be displayed, whether or not a student entered the response.

9. Change the Data View to the Show Work view.



Smith, Jon	Jones, Deb
Starting Expression: $2 \cdot (x-4) - 3 \cdot (2-3 \cdot x)$	Starting Expression: $2 \cdot (x-4) - 3 \cdot (2-3 \cdot x)$
$2 \cdot x - 8 - 6 + 9 \cdot x$	$2 \cdot x - 8 - 6 - 9 \cdot x$
$11 \cdot x - 14$	$-7 \cdot x - 14$
Final Answer: $11 \cdot x - 14$	Final Answer: $-7 \cdot x - 14$

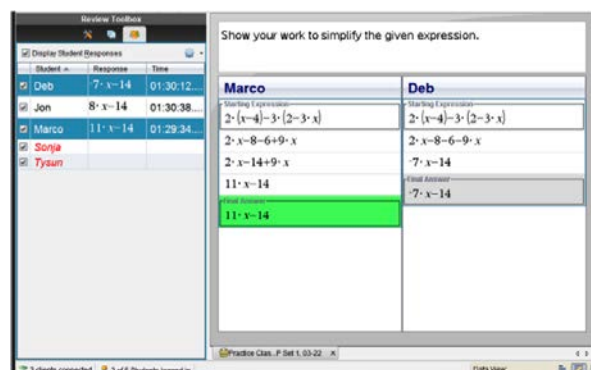
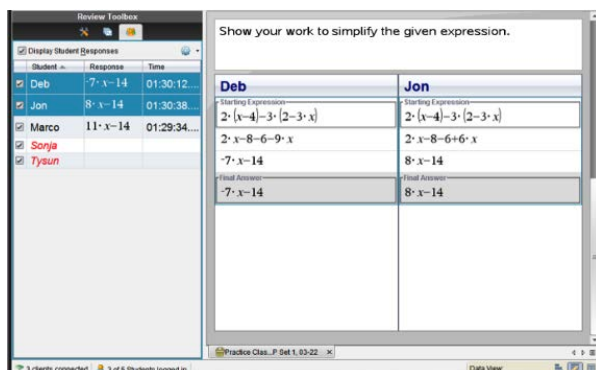


Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

10. The Show Work view allows for comparison of two students' work side-by-side.

- To change the students viewed, use the Students toolbox to select any two students for comparison.

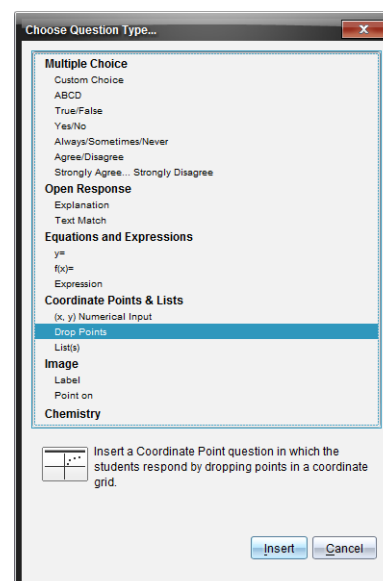


11. If time permits, change teacher/student roles, and repeat this activity.

Drop Points Question – Change teacher/student roles for this activity.

- Return to the Documents Workspace, and insert a new Coordinate Points & Lists question. Select **Drop Points**.
- In the Document Tools pane, there are several properties that you can modify:

- Number of Points*: Students may enter up to 5 points.
- Show coordinate labels*
- Prompt Location*
- If you would like to enter a correct answer to the question, you can enter it in the Correct Answer box.
- For this activity, make the following selections:
 - Number of Points: 2
 - Show coordinate labels: on
 - Prompt Location: Left
- If desired, enter Acceptable Answer(s). While it would be impossible to enter every acceptable answer, you can enter several to be automatically marked correct in the Review Workspace.

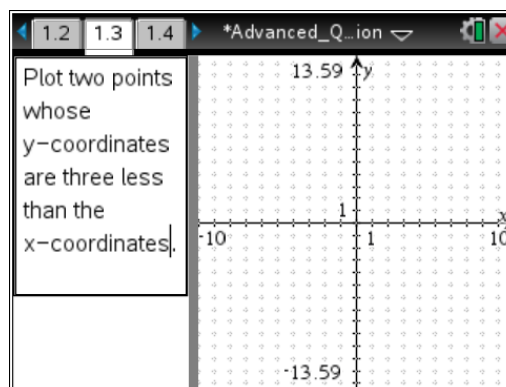




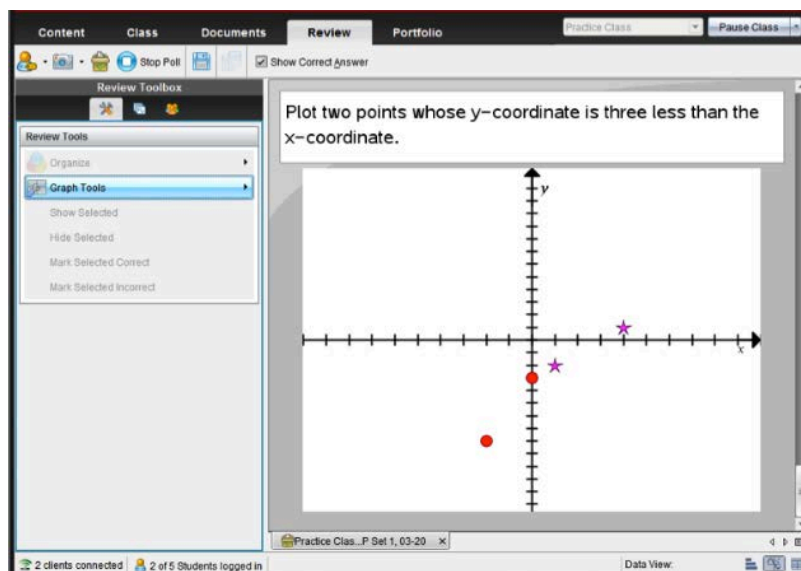
Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

3. In the text box, type the following prompt: 'Plot two points on the graph whose y- coordinates are three less than the x-coordinates.'
4. Resize the window.
5. Start the poll.
6. Have the "students" plot the first point on the Cartesian plane by moving to the location of the point and then pressing **Enter**.



7. Then the "students" should move to a second point and press **Enter**.
 - Instruct the students that they can move their points if they drop them incorrectly by grabbing the point and then dragging and dropping the point to a new location.
8. Once the "students" have plotted both points, have them submit their poll. Stop the poll.
9. Review the class results by clicking on the Student Data icon.
 - The same three Data Views that were available for the previous question are also available for this question type. For this exercise, we will focus on the graphical display.
10. Change the Data View to the graph. The points that the students dropped will be displayed.
11. To individualize the student graphs, select the Review Tools pane in the Review Toolbox. Then select **Graph tools > Individualize Student Responses**.



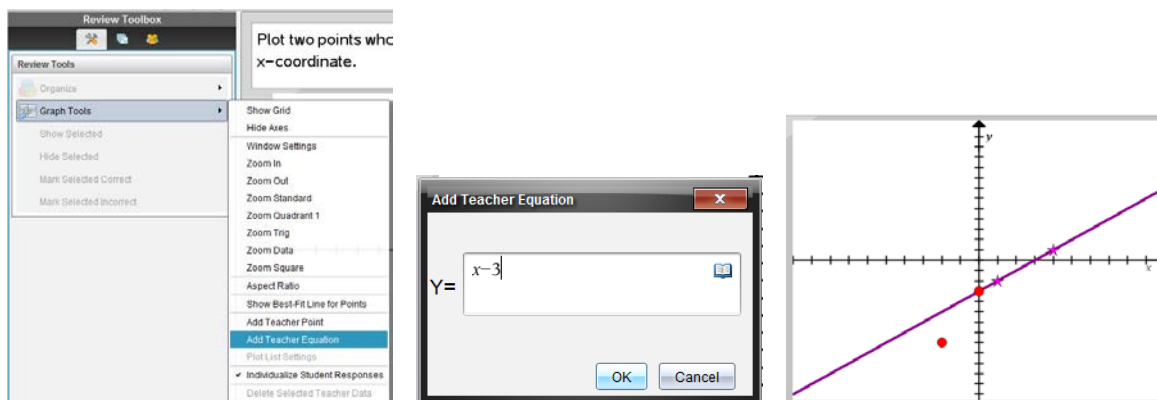


Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

12. Add a teacher equation to the scatter plot to judge how well the student answers fit the equation.

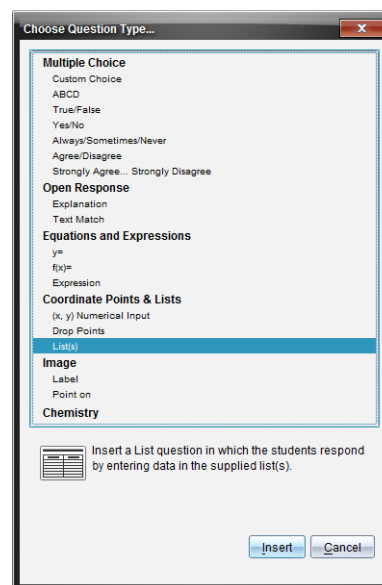
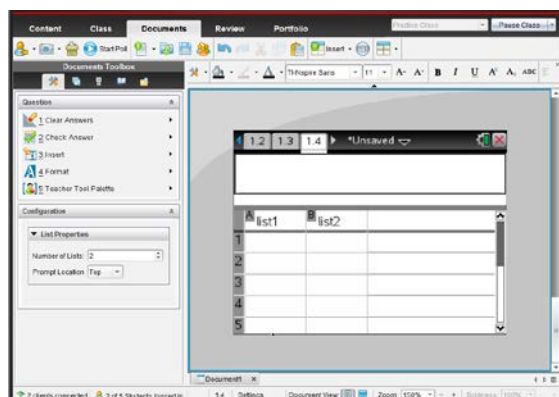
- In the Review Toolbox, select the Review Tools pane and choose **Graph Tools > Add Teacher Equation**.
- If needed, click the book icon in the Add Teacher Equation dialog box for math templates.



13. If time permits, change teacher/student roles and repeat this activity.

List(s) Question – Change teacher/student roles for this activity.

1. Return to the Documents Workspace, and insert a new Coordinate Points & Lists question. Select **List(s)**.
2. In the Document Tools pane, there are two properties that you can modify:
 - *Number of Lists*: Students may enter up to 5 lists.
 - *Prompt Location*
- For this activity, make the following selections:
 - Number of Lists: 2
 - Prompt Location: Top

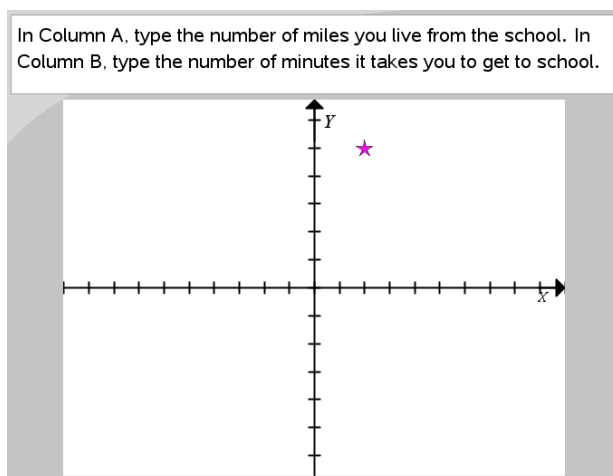
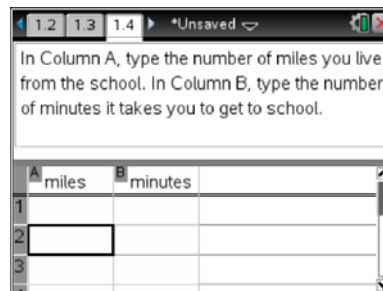




Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

3. In the text box, type the following prompt:
'In Column A, type the number of miles you live from the school.
In Column B, type the number of minutes it takes you to get to school.'
4. Name Column A as **miles** and Column B as **minutes**.
5. Resize the split screen so the entire question can be seen without scrolling.
6. Start the poll.
7. Ask the students to enter the requested data and submit the poll.
8. When all students have submitted their answers, stop the poll.
9. Review the class results by clicking on the Student Data icon. The same three Data Views that were available for the previous question are also available for this question type. For this exercise, we will focus on the graphical display.
10. Change the Data View to the graph, and the list values that the students entered will be displayed in a scatter plot.
11. To individualize the student graphs, select the Review Tools pane in the Review Toolbox and then choose **Graph Tools > Individualize Student Responses**.





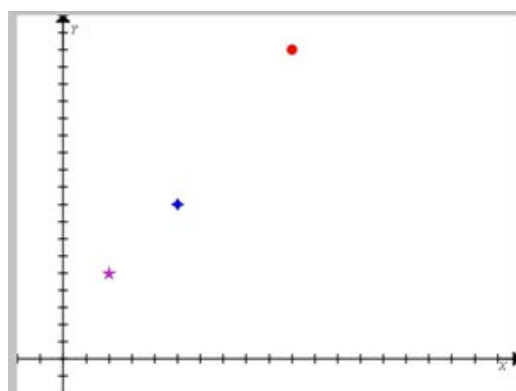
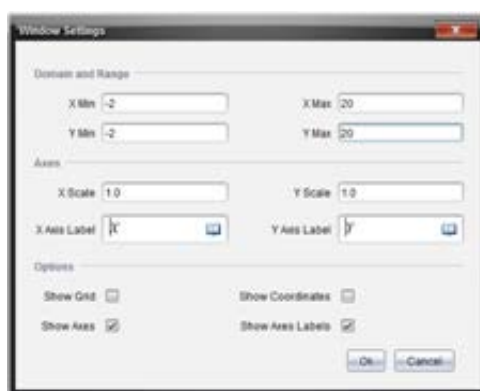
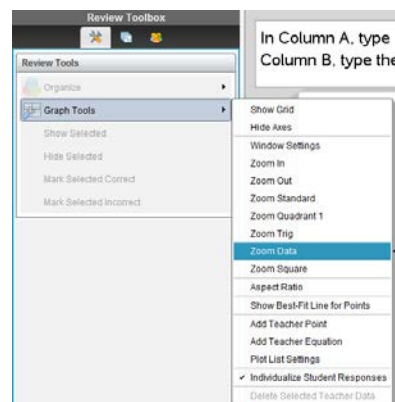
Advanced Questioning

TI PROFESSIONAL DEVELOPMENT

12. The viewing window of the scatter plot might need to be adjusted to view all ordered pairs that were submitted. To adjust the viewing window, select Graph Tools, then select one of the following options:

- Window Settings to manually change the window.
- Zoom Data to automatically change the window to show all of the data.

Note: Alternatively, right-click on the graph, and select **Graph Tools > Window Settings** and/or **Graph Tools > Zoom > Zoom Data**.

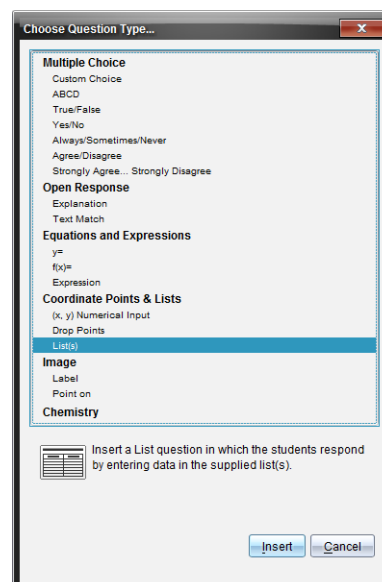


Note: In a later activity, you will learn how to aggregate the data to send all of the collected data to the entire class.

13. If time permits, change teacher/student roles, and repeat this activity.

Label/Point On Image Question – Change teacher/student roles for this activity.

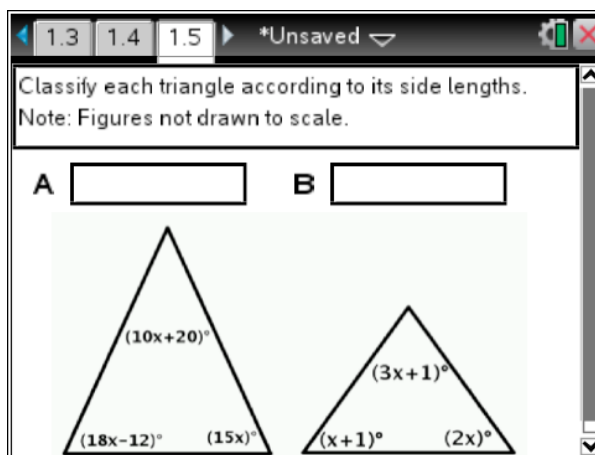
1. Return to the Documents Workspace, and insert a new Image question. Select **Label**.
2. In the Document Tools pane, there are two properties that you can modify:
 - *Number of Responses*: The number of label boxes on the image.
 - *Answers*: Correct answers for each label box.
 - For this activity, make the following selections:
 - Number of Responses: 2
 - Answers:
 - A – equilateral
 - B – scalene



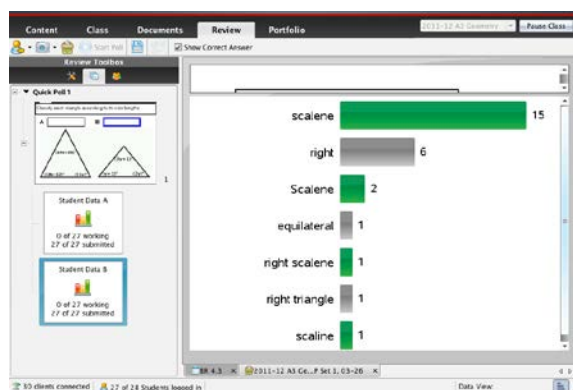
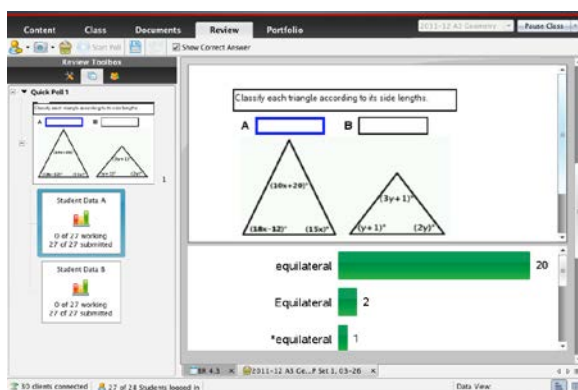


Advanced Questioning TI PROFESSIONAL DEVELOPMENT

- In the text box, type the following:
'Classify each triangle according to its side lengths. Note: Figures not drawn to scale.'
- Insert the triangle image by selecting **Insert > Image** and browsing for the file "triangles.png" provided by your instructor.
- Move the label boxes to an appropriate location.
- Start the poll.



- Ask the students to answer the question (reminding them the **tab** button will toggle between the label boxes) and submit the poll.
- When all students have submitted their answers, stop the poll.
- Review the class results by clicking on the Student Data icon for each answer. There will be an icon for each label box in the question.



- Responses to this question type are scored by text match. If a student misspells a word or answers creatively, it will not be marked correct. Right-click on additional correct responses and select "Mark this Response Correct".
- If time permits, change teacher/student roles, and repeat this activity.

Reflection:

- How can you use each of these questioning techniques in your classroom?
- What advantages do you foresee by using each of these assessment features in your classroom?
- Can you think of other ways each of these questioning techniques can be used to assess student learning?



Objectives

- Participants practice additional features of the Portfolio Workspace: modifying the answer key, changing student scores, sorting according to scores, excluding questions, previewing documents, and exporting the data.
- Participants practice sending and collecting missing work for a student through the Portfolio Workspace.

About the Lesson

- In this lesson, participants learn about various features of the Portfolio. In order to learn about these features, all participants will play the roles of Teacher and Student.
- Pairs of participants will log in to one TI-Nspire™ Navigator™ class as Jon Smith and Deb Jones and complete three simple assessments per student.

TI-Nspire™ Navigator™ Features

- Sending missing documents
- Collecting missing documents
- Editing Portfolio Workspace data
- Exporting Portfolio Workspace data

Preparing the Portfolio Workspace

Work with a partner to log in to the TI-Nspire Navigator class and complete the following assessment.

1. Begin the class. One person can log in as Jon Smith, while the other can log in as Deb Jones.
2. Send the document *Understanding_Slope_PW.tns* to the class. Complete page 1.3 as stated below.
Jon: "Flat lines have zero slope. Sometimes the fractions can be reduced."
Deb: "A rising line has a positive slope. A falling line has a negative slope."
3. Once the students have entered their observations of the investigation onto page 1.3, collect the documents from the class, delete students' documents, and save the results to the Portfolio.
4. Now send the document *Slope_From_Graph_PW.tns* to the class. Have Jon and Deb complete the quiz as shown below.

	Page 1.2	Page 1.3	Page 1.4	Page 1.5
Jon	1/3	2	3	1/4
Deb	-1/3	2	3/2	-1/4

TI-Nspire™ Technology Skills:

- Sending, collecting, and adding a missing student's document to the Student Portfolio
- Editing items in the Portfolio Workspace
- Exporting data

Lesson Materials:

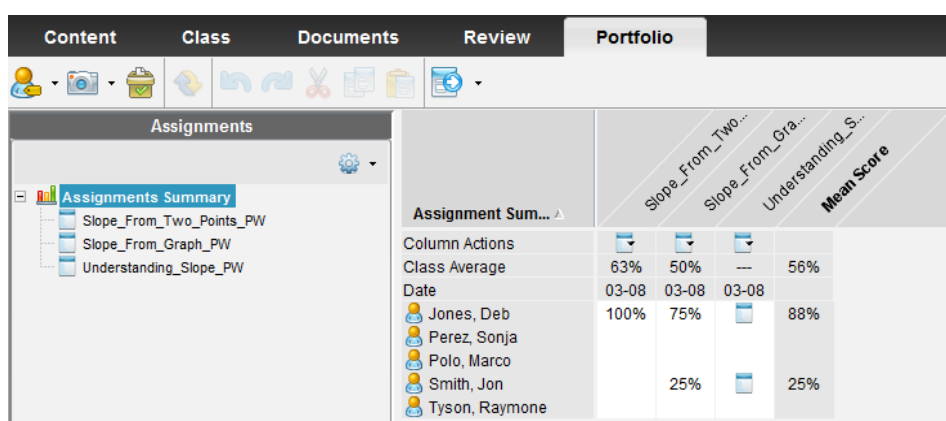
TI-Nspire™ documents

- Understanding_Slope_PW.tns
- Slope_From_Graph_PW.tns
- Slope_From_Two_Points_PW.tns

- As the teacher, collect the documents from the class, students' documents, and save the results to the Portfolio.
- Send the *Slope_From_Two_Points_PW.tns* file only to Deb Jones. Complete Deb's quiz as shown below.

	Page 1.2	Page 1.3	Page 1.4	Page 1.5
Deb	1	5/4	5/2	-1/2

- As the teacher, collect the document from the class, delete students' documents, and save the results to the Portfolio.
- End the class.
- You are now ready to learn about some of the features of the Portfolio Workspace.



Content	Class	Documents	Review	Portfolio																																													
<div> </div>																																																	
<div> <div> Assignments <ul style="list-style-type: none"> Assignments Summary Slope_From_Two_Points_PW Slope_From_Graph_PW Understanding_Slope_PW </div> <div> Assignment Sum... <table> <tr> <th></th><th>Slope_From_Two...</th><th>Slope_From_Gra...</th><th>Understanding_S...</th><th>Mean Score</th></tr> <tr> <td>Column Actions</td><td></td><td></td><td></td><td></td></tr> <tr> <td>Class Average</td><td>63%</td><td>50%</td><td>---</td><td>56%</td></tr> <tr> <td>Date</td><td>03-08</td><td>03-08</td><td>03-08</td><td></td></tr> <tr> <td>Jones, Deb</td><td>100%</td><td>75%</td><td></td><td>88%</td></tr> <tr> <td>Perez, Sonja</td><td></td><td></td><td></td><td></td></tr> <tr> <td>Polo, Marco</td><td></td><td></td><td></td><td></td></tr> <tr> <td>Smith, Jon</td><td></td><td>25%</td><td></td><td>25%</td></tr> <tr> <td>Tyson, Raymone</td><td></td><td></td><td></td><td></td></tr> </table> </div> </div>						Slope_From_Two...	Slope_From_Gra...	Understanding_S...	Mean Score	Column Actions					Class Average	63%	50%	---	56%	Date	03-08	03-08	03-08		Jones, Deb	100%	75%		88%	Perez, Sonja					Polo, Marco					Smith, Jon		25%		25%	Tyson, Raymone				
	Slope_From_Two...	Slope_From_Gra...	Understanding_S...	Mean Score																																													
Column Actions																																																	
Class Average	63%	50%	---	56%																																													
Date	03-08	03-08	03-08																																														
Jones, Deb	100%	75%		88%																																													
Perez, Sonja																																																	
Polo, Marco																																																	
Smith, Jon		25%		25%																																													
Tyson, Raymone																																																	

Adding a Missing Document to the Portfolio Workspace

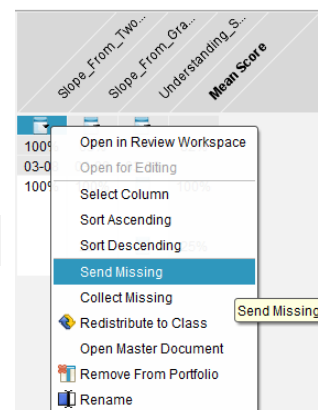
It is not unusual for a student to miss an assignment. If you are using the Portfolio Workspace as a location to store grades and monitor progress, you will want to add missing assignments.

Jon Smith did not receive the *Slope_From_Two_Points_PW* assignment. Follow the steps below to send him the document, have him complete the assignment, and collect the document to include his grade in the Portfolio.

- Begin the class, and have Jon log in to the class.
- In the Portfolio Workspace, click on the Column Actions drop-down menu for the missing assignment and select **Send Missing**.
- Have Jon complete the document as shown below.

	Page 1.2	Page 1.3	Page 1.4	Page 1.5
Jon	3/5	5/4	9/8	1/2

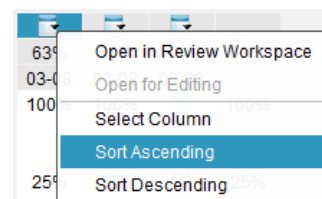
- When Jon has completed the assignment, right-click the name of the document in the Portfolio Workspace, and select **Collect Missing**.



Sorting Scores

If you have a class size of 25 to 32, it can be difficult to quickly determine who is struggling and who is excelling on a particular assignment. In the Portfolio Workspace, you can sort the scores from high to low or from low to high in order to quickly observe patterns in student scores.

1. Determine the assignment to be sorted in ascending or descending order.
2. Click on the Column Actions cell for the selected assignment.
3. Select **Sort Ascending** or **Sort Descending**.
4. Select other assignments, and practice this skill.





5. To sort by the Display Name, click on the **Assignment Summary** label.
 - By repeatedly clicking on the **Assignment Summary** label, the ordering will rotate between alphabetical, reverse alphabetical, and alphabetical by last name.

Assignment Summary	Assignment Sum... ▼	Assignment Sum... ▲
Column Actions	Column Actions	Column Actions
Class Average	Class Average	Class Average
Date	Date	Date
Smith, Jon	Tyson, Raymone	Jones, Deb
Jones, Deb	Smith, Jon	Perez, Sonja
Polo, Marco	Polo, Marco	Polo, Marco
Perez, Sonja	Perez, Sonja	Smith, Jon
Tyson, Raymone	Jones, Deb	Tyson, Raymone

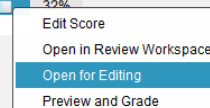
6. To sort by the Mean Score column, right-click on **Mean Score**, and select **Sort Ascending/Descending**.

Grading a Document in the Portfolio


A teacher might save a document in the Portfolio for which some or all of the grading is based on non-question pages. Perhaps the students were required to construct an object or graph and to analyze data.

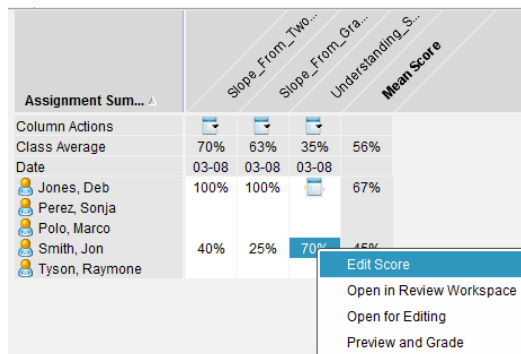
1. In the Portfolio Workspace, the  icon in the cells for "Understanding_Slope_PW" indicates that a document was saved by the teacher that did not contain any Question pages. To preview and grade the document for each student, right-click on the  icon and select **Open for Editing**.
 - The student's document will open in the Documents Workspace.

Assignment Sum... ▲	Slope_From_Two...	Slope_From_Gra...	Understanding_S...	Mean Score
Column Actions				
Class Average	70%	63%	---	66%
Date	03-08	03-08	03-08	
Jones, Deb	100%	100%		100%
Perez, Sonja				
Polo, Marco				
Smith, Jon	40%	25%		32%
Tyson, Raymone				



2. After reviewing the student document and determining a grade, return to the Portfolio Workspace to enter a grade for the student work using one of the following two methods.

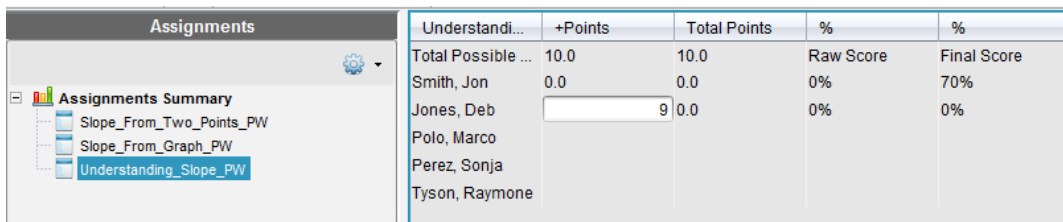
3. To enter a final percentage only: Right-click on the  icon, and select **Edit Score**. Enter the final percentage number for the assignment.



Assignment Sum...	Slope _From _Two...	Slope _From _Gra...	Understanding _S...	Mean Score
Column Actions				
Class Average	70%	63%	35%	56%
Date	03-08	03-08	03-08	
Jones, Deb	100%	100%		67%
Perez, Sonja				
Polo, Marco				
Smith, Jon	40%	25%	70%	45%
Tyson, Raymone				

Edit Score
 Open in Review Workspace
 Open for Editing
 Preview and Grade

- To enter a grade based on points for the assignment: Select the assignment “Understanding_Slope_PW” from the Assignments pane. Click on the cell under “+Points” and enter the Total Possible Points for the assignment. Then click on the cell for each student, and enter the points earned for the assignment.

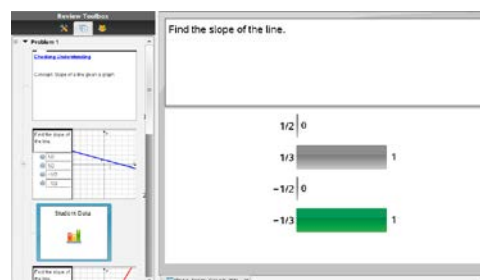


Assignments	Understandi...	+Points	Total Points	%	%
Assignments Summary					
Slope_From_Two_Points_PW					
Slope_From_Graph_PW					
Understanding_Slope_PW					
Total Possible ...	10.0	10.0	Raw Score	Final Score	
Smith, Jon	0.0	0.0	0%	70%	
Jones, Deb	9	0.0	0%	0%	
Polo, Marco					
Perez, Sonja					
Tyson, Raymone					

Changing the Answer Key

Follow the steps below to change an answer response that has been scored incorrectly.

- From the Assignments Summary in the Portfolio Workspace, click on the Column Actions cell for the “Slope from Graph” assignment.
- Select **Open in Review Workspace**.
- In the Page Sorter pane of the Review Workspace, scroll down to the question to be adjusted (Question Page 1.2), and click on its Student Data icon.
- Make the adjustments to the correct answer. (The correct answer, of course, is $-1/3$ not $-1/2$.)
 - Right-click on the bars representing the correct answer, and select “Mark this Response Correct.”
 - The Portfolio scores are automatically updated.
- Close the Review Workspace document.





Editing a Student's Score for an Entire Assignment

Follow the steps below if you realize that a student's score for an entire assignment is incorrect.

1. In the Portfolio Workspace, right-click on the score to be changed, and select **Edit Score**.
2. Type the new score, and press **Enter**.

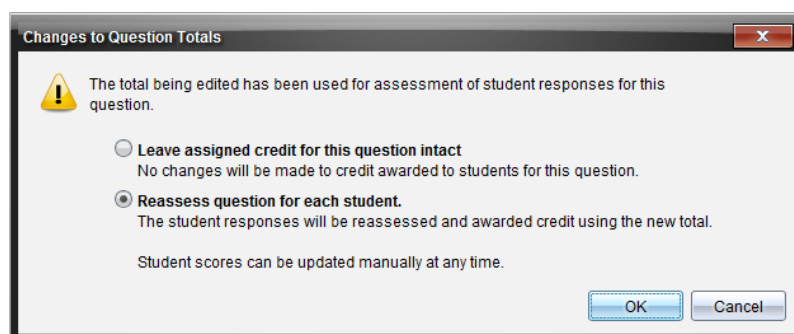
Assignment Sum...	Slope_From_Two...	Slope_From_Gra...	Understanding_S...	Mean Score
Column Actions				
Class Average	70%	63%	80%	71%
Date	03-08	03-08	03-08	
Jones, Deb	100%	100%	90%	97%
Perez, Sonja				
Polo, Marco				
Smith, Jon	40%	25%		
Tyson, Raymone				

Assignment Sum...	Slope_From_Two...	Slope_From_Gra...	Understanding_S...	Mean Score
Column Actions				
Class Average	70%	63%	80%	71%
Date	03-08	03-08	03-08	
Jones, Deb	100%	100%	90%	97%
Perez, Sonja				
Polo, Marco				
Smith, Jon	40%	40%	70%	45%
Tyson, Raymone				

Changing the Total Possible Points for a Question

Follow the steps below if you decide that a question is worth more than the standard one point.

1. Select the assignment "Slope_From_Two_Points_PW" in the Assignments pane.
2. Click in the cell immediately below a question column (such as Q3), type 2, and press **Enter**.
3. Select the appropriate option for the change, and click **OK**.





Grading Student Responses from the Portfolio

Follow the steps below to award credit for an open response question or to award partial-credit for student responses.

1. Select the assignment "Slope_From_Two_Points_PW" in the Assignments pane.
2. Click in the cell for a particular student for a question. The student's response and correct answer will be displayed in the lower portion of the window.
3. Give Jon Smith a partial score for his response to Q4, and press **Enter**.

Slope_From...	Q1	Q2	Q3	Q4	+Points	Total Points
Total Possible ...	1.0	1.0	2.0	2.0	0.0	6.0
Smith, Jon	0.0	1.0	0.0	1.0	0.0	1.0
Jones, Deb	1.0	1.0	2.0	2.0	0.0	6.0
Polo, Marco						
Perez, Sonja						
Tyson, Raymone						
Average	50%	100%	50%	50%	0.0	3.5

Q4 Question:
Find the slope of the line between the points (1,1) and (9,-3).

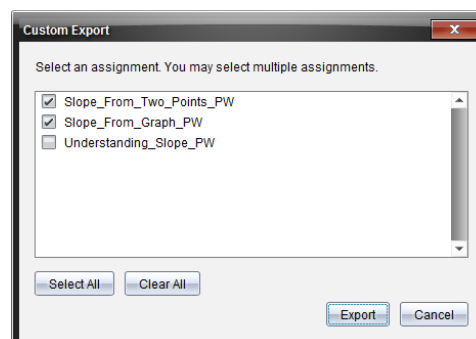
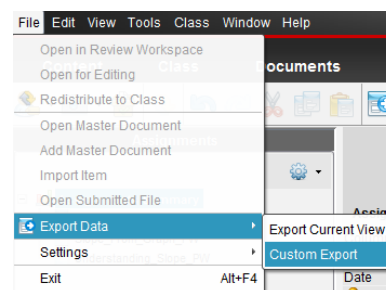
Smith, Jon Answered:
 $\frac{1}{2}$

Correct Response:
 $-\frac{1}{2}$; tolerance: +/- 0

Exporting Data from the Portfolio

Some school grading programs accept data imported in Comma-Separated Values (CSV) format. Follow the steps below to export Portfolio data to a CSV file.

1. From the Portfolio Workspace, go to **File > Export Data > Custom Export**.
 - If **Export Current View** is selected, the data displayed to the right of the Assignments pane will be exported.
2. Select the assignment(s) data to be exported, and click **Export**.

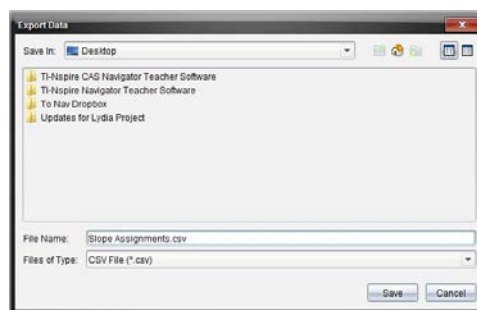




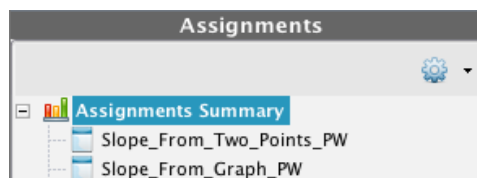
The Portfolio Workspace

TI PROFESSIONAL DEVELOPMENT

- Determine an appropriate name and convenient location for the file. Click **Save**.

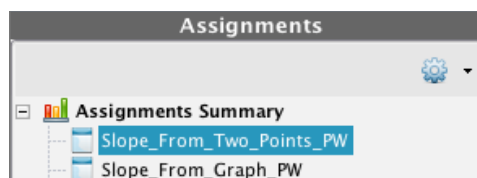


- Exporting when **Assignments Summary** is selected will result in a CSV file that contains final percentage scores only.



	A	B	C	D	E	F	G
1	Last Name	First Name	Student ID	Slope_From	Slope_From_Graph_PW		
2				3/8/2012	3/8/2012		
3	Smith	Jon		33	40		
4	Jones	Deb		100	50		
5	Polo	Marco					
6	Perez	Sonja					
7	Tyson	Raymone					

- Selecting **Export Current View** when an individual assignment is selected will result in a CSV file that contains question details, total points, and the final percentage scores.



	A	B	C	D	E	F	G	H	I
1	Slope_From	Q1	Q2	Q3	Q4	Additional	Total Points	%	%
2	Total Possible	1	1	2	2	0	6	Raw Score	Final Score
3	Smith, Jon	0	1	0	1	0	2	33%	33%
4	Jones, Deb	1	1	2	2	0	6	100%	100%
5	Polo, Marco								
6	Perez, Sonja								
7	Tyson, Raymone								
8	Average	50%	100%	50%	75%	0	4	67%	67%

Reflection:

What makes the Portfolio Workspace more robust than a typical grade book?

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Data Aggregation

TI PROFESSIONAL DEVELOPMENT

Objectives

- To become familiar with the various data aggregation capabilities of the TI-Nspire™ Navigator™ System.
- To discuss various activities and concepts that can be enhanced by the use of data aggregation.

About the Lesson

- Participants will work together to practice data aggregation.
- One member of the group will play the role of the teacher while others play the roles of students.
- Participants will change roles until all members of the group feel comfortable with aggregating data.
- Participants will discuss the types of activities and concepts that can be explored using data aggregation.

TI-Nspire™ Navigator™ Features

- Collecting student-generated data
- Returning compiled data for analysis

Roles

TI-Nspire™ Navigator™ System

Working in pairs, one participant will assume the teacher role—the other, the student role. The “teacher” will operate the computer, and the “student” will operate two TI-Nspire handhelds. Each participant will have an opportunity to change and experience both roles.

TI-Nspire™ Navigator™ NC System

Working in groups of three, assign one role as the teacher and two roles as the students. The “teacher” will use the TI-Nspire Navigator NC Teacher Software, and the “students” will use the TI-Nspire Student Software. Each participant will have an opportunity to change and experience both roles.

What is Data Aggregation?

An important learning tool of the TI-Nspire Navigator System is the ability to collect individual student data and combine it into one data set. TI-Nspire Navigator allows the teacher to send the aggregated data set back to the individual students for investigation.

TI-Nspire™ Technology Skills:

- Answering Coordinate Points & Lists Quick Poll questions
- Entering and submitting data as requested
- Submitting a Quick Poll response

Tech Tips:

- Data aggregation is accomplished by collecting data through a question page.
- Aggregated data is sent back to the students through a document.

Lesson Materials:

Equipment for the TI-Nspire™ Navigator™ System

- Computer with TI-Nspire™ Navigator™ Teacher Software (for a pair of participants) with two USB ports
- Two TI-Nspire™ learning handhelds per participant
- Standard A to Mini-B USB cables

Equipment for the TI-Nspire™ Navigator™ NC System

- Computer with TI-Nspire™ Navigator™ NC Teacher Software and TI-Nspire™ Student Software



There are three main steps in this process:

1. Collecting data from the students.
2. Aggregating the data.
3. Sending the aggregated data back to the class.

Aggregating the data is accomplished using a **Coordinate Points & Lists** Question Type which has three options: (x,y) Numerical Input, Drop Points, and List(s).

Data Aggregation Using (x,y) Numerical Input

Data aggregation using the Question Type **(x,y) Numerical Input** is visually useful for students accustomed to the ordered pair relationship.

Individual student data → Data collected from class → Aggregated data sent back to class

The diagram illustrates the data aggregation process. On the left, a student's TI-Nspire interface shows a question: "Find two ordered pair solutions (x,y) to the given equation using the value of x assigned to you by the teacher. $3x - 2y = 6$." Below the question are two input boxes. An arrow points from this interface to a central "Data View" window. This window displays a list of ordered pairs and their corresponding scores: (0,-3) with a score of 1, (1,-3/2) with a score of 1, (2,0) with a score of 1, (3,3/2) with a score of 1, (4,3) with a score of 1, (5,9/2) with a score of 1, and (6,6) with a score of 1. An arrow points from the "Data View" window to a right-hand window titled "xcoord" and "ycoord". This window shows a table of aggregated data:

	xcoord	ycoord
1	-1	-9/2
2	-6	-12
3	0	-3
4	4	3
5	7	15/2

1. After the TI-Nspire Navigator class has been started and students have logged in to class, click the Quick Poll icon.
2. Select the Question Type **(x,y) Numerical Input**, and click **Insert**.
3. If desired, enter instructions for the students in the question field. A sample question is shown.



Coordinate Points & Lists
(x, y) Numerical Input

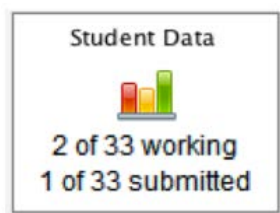
The screenshot shows the TI-Nspire interface with the question: "Find two ordered pair solutions (x,y) to the given equation using the value of x assigned to you by the teacher. $3x - 2y = 6$." Below the question are two input boxes for (x,y) coordinates.



Data Aggregation

TI PROFESSIONAL DEVELOPMENT

4. If desired, make adjustments to the configuration of the data being collected such as Number of Points, Graph Preview, and Prompt Location.
5. After the question is set up appropriately, send it to the class by clicking **Start Poll**.
 - The Review Workspace immediately opens, allowing the teacher to monitor the class progress.
6. Students enter their data and submit when finished.
 - The teacher can monitor the collection of the data in the Review Workspace using the Student Data icon.



Documents Toolbox

Question

- 1: Clear Answers
- 2: Check Answer
- 3: Insert
- 4: Format
- 5: Teacher Tool Palette

Configuration

Coordinate Point Properties

Number of Points: 2

☐ Include a Graph Preview

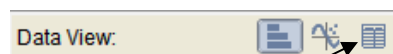
Prompt Location: Left

Correct Answer

Acceptable Answer(s):

(,)

7. When all students have submitted their data, the teacher can view the data by clicking on the **Student Data** icon.
8. Change the Data View to the Frequency Table.



Find two ordered pair solutions (x,y) to the given equation using the value of x assigned to you by the teacher.

(0,-3)	<input type="text"/>	1
(1,-3/2)	<input type="text"/>	1
(2,0)	<input type="text"/>	1
(3,3/2)	<input type="text"/>	1
(4,3)	<input type="text"/>	1
(5,9/2)	<input type="text"/>	1
(6,6)	<input type="text"/>	1
(7,15/2)	<input type="text"/>	1

Practice Class Poll 1 05-12 x Mathematics Class Poll 1 05-12 x

Data View:

Response	Frequency
$(-1, -\frac{9}{2})$	1
$(-6, -12)$	1
$(0, -3)$	1
$(4, 3)$	1



Data Aggregation

TI PROFESSIONAL DEVELOPMENT

9. Right-click on the Frequency Table, and select **List View**.
10. Right-click on the List View table, and select **Send Table to New Document**.
 - The new document opens with the aggregated data in a Lists & Spreadsheet page in the Documents Workspace.
11. Delete the extraneous information (student names) and rename the lists.
12. Send the document to the class for investigation.
 - For more details, see the section “Returning Aggregated Data to the Class” at the end of this activity sheet.

Student	X	Y
Euclid	-1	-9
Pierre Fermat	-6	
Hypatia	0	
Euclid	4	
Albert Einstein	7	
Charles Babbage	-5	
Hypatia	5	

	xcoord	ycoord
1	-1	-9/2
2	-6	-12
3	0	-3
4	4	3
5	7	15/2

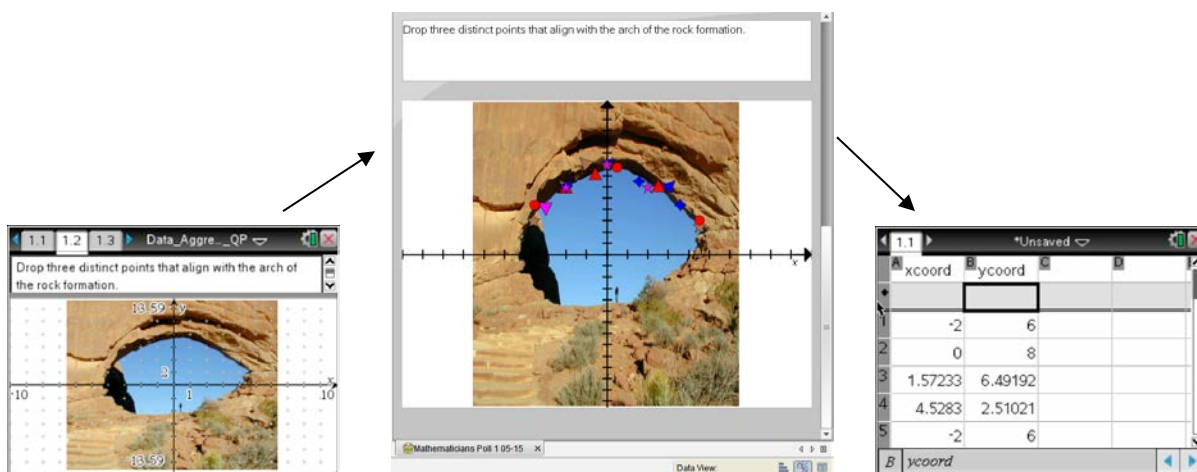
Reflection:

What is another data aggregation activity that would be useful in the classroom using this method?

Data Aggregation Using Drop Points

Data aggregation with the Drop Points Question Type is visually useful for gathering ordered pairs from a coordinate grid.

Individual student data → Data collected from class → Aggregated data sent back to class





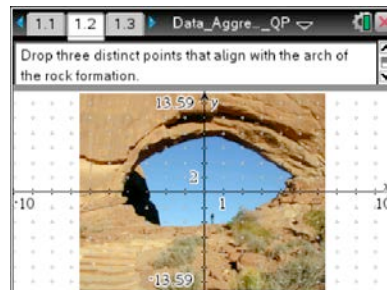
Data Aggregation

TI PROFESSIONAL DEVELOPMENT

1. After the TI-Navigator class has been started and students have logged-in to class, click the Quick Poll icon.
2. Select the Question Type **Drop Points**, and click **Insert**.
3. If desired, enter instructions for the students in the question field. A sample question is shown.

Coordinate Points & Lists

Drop Points



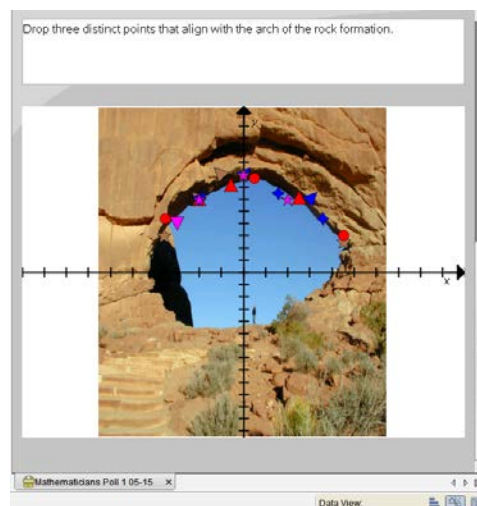
4. If desired, make adjustments to the configuration of the data being collected such as Number of Points, Show coordinate labels, Prompt Location, Acceptable Answer(s), and Accept equivalent responses as correct.
 - To insert an image onto the coordinate grid, choose **Insert > Image** on the software tool bar.



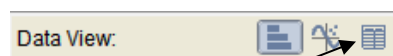
Data Aggregation

TI PROFESSIONAL DEVELOPMENT

5. After the question is set up appropriately, send it to the class by clicking **Start Poll**.
 - The Review Workspace immediately opens, allowing the teacher to monitor the class progress.
6. Ask students to drop their points and submit when finished.
 - The teacher can monitor the collection of the data in the Review Workspace using the Student Data icon.
7. When all students have submitted their data, the teacher can view the data by clicking on the **Student Data**.

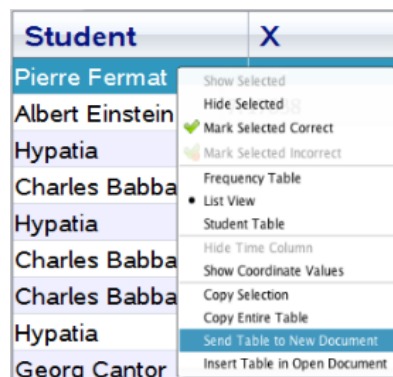


8. Change the Data View to the Frequency Table.



Response	Frequency
(-2,6)	5
(0,8)	3
(1.57233,6.49192)	1

9. Right-click on the Frequency Table, and select **List View**.
10. Right-click on the List View table, and select **Send Table to New Document**.
 - The new document opens with the aggregated data in a Lists & Spreadsheet page in the Documents Workspace.



11. Delete the extraneous information (student names), and rename the lists.
12. Send the document to the class for investigation.
 - For more details, go to the section "Returning Aggregated Data to the Class" at the end of this handout.

xcoord	ycoord
-2	6
0	8
1.57233	6.49192
4.5283	2.51021
-2	6

Reflection:

What is another data aggregation activity that would be useful using this method?



Data Aggregation

TI PROFESSIONAL DEVELOPMENT

Data Aggregation Using Lists

Data aggregation using the List(s) Question Type is useful to gather data. In this type of question, the number of lists can range from one to five.

Individual student data → Data collected from class → Aggregated data sent back to class

The diagram illustrates the data aggregation process. On the left, a TI-Nspire interface shows a 'Data Aggre...QP' window with a prompt: 'Measure three objects using three different units. Enter your measurements in the spreadsheet below.' Below the prompt is a table with columns 'Inches', 'centimeters', and 'widgets'. In the center, a larger spreadsheet shows the aggregated data from the class. On the right, another TI-Nspire window shows the 'Unsaved' spreadsheet with the same data entered, with columns labeled 'in', 'cm', and 'wid'.

	inches	centimeters	widgets
1	$3\frac{5}{16}$	8.2	24.6
2	9	22.5	67.5
3	1.5	3.8	11.4
4	$6\frac{10}{16}$	16	48
5	$2\frac{1}{8}$	5.5	16.5

1. After the TI-Navigator class has been started and students have logged into class, click the Quick Poll icon.
2. Select the Question Type **List(s)**, and click **Insert**.
3. If desired, enter instructions for the students in the question field. Name the lists as appropriate for the question. A sample question is shown.
4. If desired, make adjustments to the configuration of the data being collected such as Number of Lists and Prompt Location.

Coordinate Points & Lists

List(s)

The TI-Nspire interface shows a 'Data Aggre...QP' window with a prompt: 'Measure three objects using three different units. Enter your measurements in the spreadsheet below.' Below the prompt is a table with columns 'Inches', 'centimeters', and 'widgets'.

	Inches	centimeters	widgets
1			
2			
3			
4			
5			

The Documents Toolbox shows the configuration for the List(s) question type. The 'Question' section includes options for '1: Clear Answers', '2: Check Answer', '3: Insert', '4: Format', and '5: Teacher Tool Palette'. The 'Configuration' section includes a 'List Properties' sub-section with 'Number of Lists' set to 3 and 'Prompt Location' set to Top.



Data Aggregation

TI PROFESSIONAL DEVELOPMENT

5. After the question is set up appropriately, send it to the class by clicking **Start Poll**.
 - The Review Workspace immediately opens, allowing the teacher to monitor the class progress.
6. Have students enter their data and submit when finished.
 - The teacher can monitor the collection of the data in the Review Workspace using the Student Data icon.
7. When all students have submitted their data, the teacher can view the data by clicking on the **Student Data**.

Measure three objects around the room using the three given measurements and enter your data in the spreadsheet below.

inches	centimeters	widgets
$3 + \frac{5}{16}$	8.2	24.6
9	22.5	67.5
1.5	3.8	11.4
$6 + \frac{10}{16}$	16	48
$2 + \frac{1}{8}$	5.5	16.5
1.25	3.3	9.9
$\frac{14}{16}$	2.1	6.3
4	10	30
5.75	14.5	43.5
3.25	8.6	25.8
13.5	33.8	101.4
4	10	30

Mathematicians Poll 1 05-15

Data View:

8. Right-click on the list view table, and select **Send Table to New Document**.
 - The new document opens with the aggregated data in a Lists & Spreadsheet page in the Documents Workspace.
9. Send the document to the class for investigation.
 - For more details, go to the next section "Returning Aggregated Data to the Class".

inches	centimeters
$3 + \frac{5}{16}$	8.2
9	22.5
1.5	3.8

in	cm	wid
$3 + \frac{5}{16}$	8.2	24.6
9	22.5	67.5
1.5	3.8	11.4
$6 + \frac{10}{16}$	16	48
$2 + \frac{1}{8}$	5.5	16.5

Reflection:

What is another data aggregation activity that would be useful using this method?



Data Aggregation

TI PROFESSIONAL DEVELOPMENT

Returning Aggregated Data to the Class

The third step of the Data Aggregation process is sending the aggregated data back to the students for investigation. This is achieved by placing the aggregated data into a document and sending the document to the class. The document can be a one page document containing the raw data or the document can be several pages with the raw data, the graph of the data, investigative questions, and other pages as desired.

When the teacher selects **Send Table to New Document** from the view of the data in the Review Workspace, the new document opens with the aggregated data in a Lists & Spreadsheet page in the Documents Workspace.

1. If necessary, delete the student name information in the first column.
 - Click on a cell in the first column.
 - Select **Menu > Actions > Select > Select Column**.
 - Press **Delete** on the keyboard.
2. If desired, add a Graphs page or a Data & Statistics page and set up a graph of the data.
3. Click **Send to Class**.
4. Students can open the document and investigate the data as directed by the teacher.

	A	B xcoord	C ycoord	D
1	Hypatia	-2	6	
2	Albert Ein..	-2	6	
3	Euclid	-2	6	
4	Charles B.	4.5283	2.51021	
5	Euclid	0	8	

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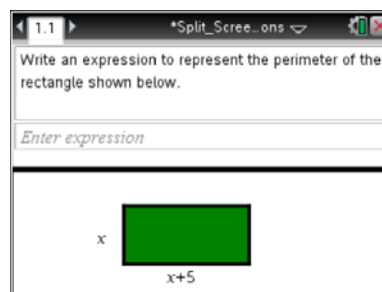
Creating Split-Screen Questions TI PROFESSIONAL DEVELOPMENT

Objective

- Use the TI-Nspire™ Teacher Software to create assessment questions involving a split screen with a question and a shape or graph.

About the Lesson

- Participants will be guided through the creation of a split-screen question. The question will have an expression question and a Geometry application with a shape and text boxes.
- Participants will practice similar techniques by creating additional questions and saving the document.



TI-Nspire™ Technology Skills:

- Create a document with Question pages involving split screens and graphs

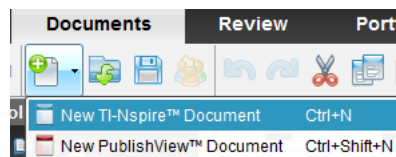
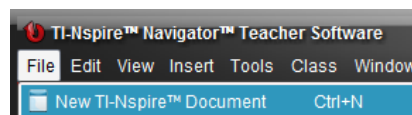
Lesson Materials:

Equipment

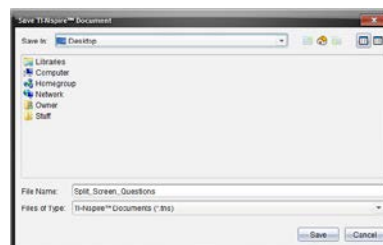
- Computer with TI-Nspire™ Teacher Software or TI-Nspire™ Navigator™ Teacher Software

Creating a Split-Screen Question – Question 1

- Open the TI-Nspire Teacher Software.
 - If necessary, close the “Welcome Screen” by clicking the X in the upper right-hand corner.
 - Be sure the software is open in the Documents Workspace.
 - Select **File > New TI-Nspire™ Document** or click the “New Document” icon in the Documents Workspace.

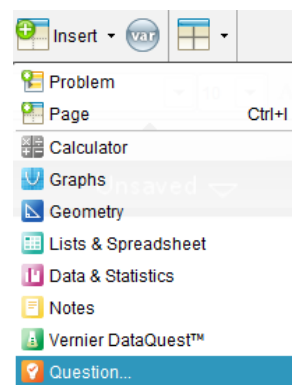


- Save the document to the desired location with an appropriate name by selecting **File > Save Document** or clicking the Save icon.
 - For example, the document *Split_Screen_Questions.tns* could be saved on the Desktop.



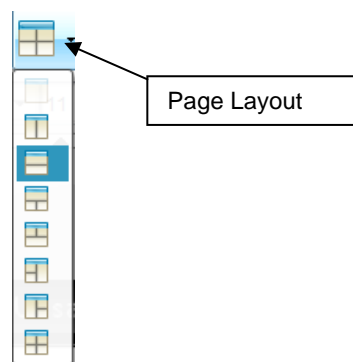
Creating Split-Screen Questions TI PROFESSIONAL DEVELOPMENT

3. Select **Insert > Question... > Equations and Expressions > Expression**, and click **Insert**.



4. Split the screen by selecting **Page Layout** > .

- When creating a question using a split screen, you might want to split the screen before making any changes so that you can view the space available for creating objects.



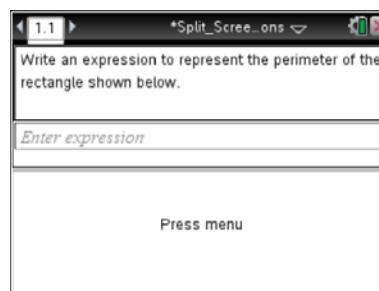
- The top work area is ready for the question to be entered.



5. Type the "question" prompt as follows:

Write an expression to represent the perimeter of the rectangle shown below.

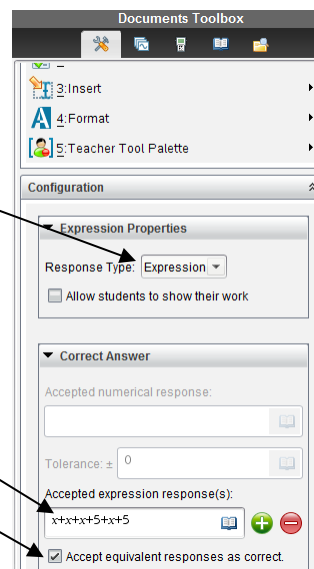
- Optional:** To change the font size of the question, click and drag the cursor to select the text, and then choose size 10 from the drop-down menu. Click to deselect the text.



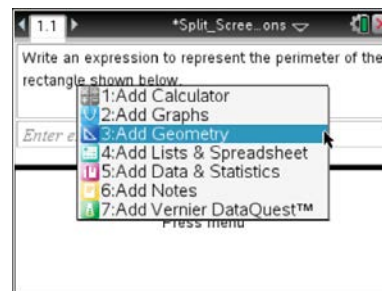
Creating Split-Screen Questions TI PROFESSIONAL DEVELOPMENT

6. Move to the Document Tools pane of the Document Toolbox and take the following steps:

- Select **Expression** for the Response Type.
- Enter a correct expression for the perimeter of the rectangle, such as $x+x+x+5+x+5$.
- Check the box for “Accept equivalent responses as correct”.



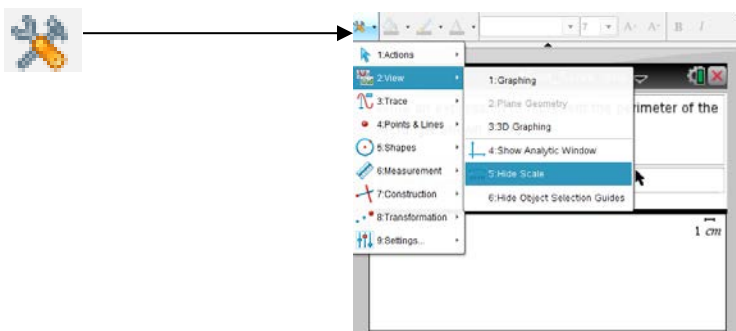
7. Next, click in the lower work area, and select **Add Geometry** to add a Geometry application.



To add the rectangle to the split screen, you will complete the following tasks:

- Hide the scale.
- Use the Shapes tool to draw a rectangle.
- Modify the attributes of the rectangle to change its line width and its fill color.
- Hide the points used to determine the rectangle.
- Insert text boxes to label two sides of the rectangle.

8. To hide the scale, select **View > Hide Scale** from the Document Tools.



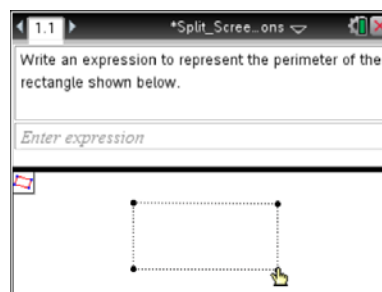


Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

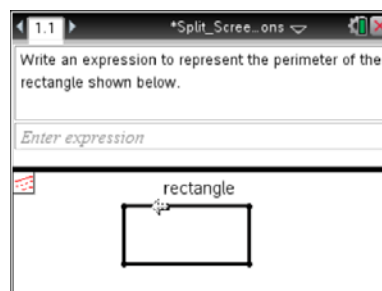
9. To draw the rectangle, select **Shapes > Rectangle** from the Document Tools.

- Move the cursor to the desired location of a vertex of the rectangle and click to mark the point.
- Move the cursor to the location of an adjacent vertex and click to mark the point.
- Move the cursor to indicate the other dimension of the rectangle and click to complete the rectangle.
- Press **Escape**.



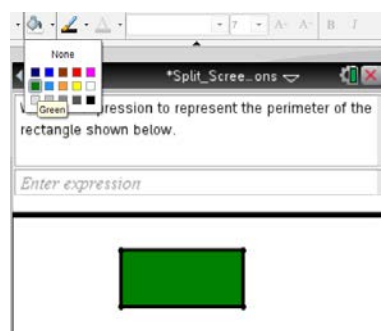
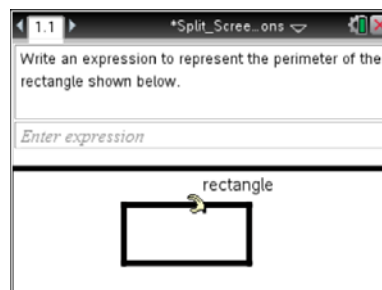
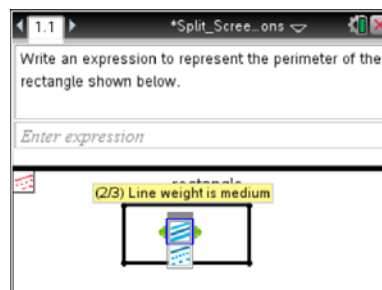
10. To change attributes of the rectangle, select **Actions > Attributes**.

- Move the arrow to the rectangle, and click to select it. (Alternatively, you can right-click on the rectangle and select **Attributes**.)



11. Next, change the appearance of the rectangle by changing the weight of the line and the fill color and hiding the vertex points.

- Use the right arrow to choose line weight of *medium*.
- Press **Enter**.
- Press **Escape**.
- Move the cursor, and click to select the rectangle. (You will see the word "rectangle" and the rectangle will flash when selected.)
- Move to the Fill icon on the toolbar, and choose the desired color. (Alternatively, you can right-click on the rectangle to change **Attributes > Color**.)
- To hide a vertex, right-click on the point, and select **Hide**. Repeat for the remaining vertices.





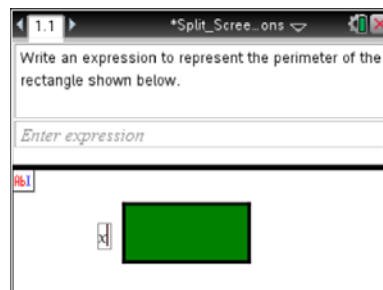
Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

12. To label the sides of the rectangle, select **Actions > Text**.

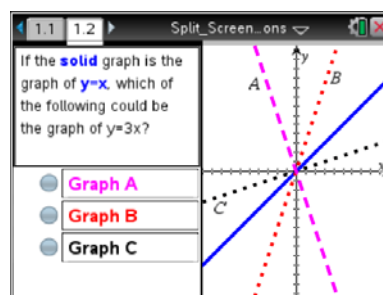
- Move the text cursor to the desired location, and click to open a text box.
- Type **x**, and press **Enter**.
- Move to an adjacent side, click to open a text box, and type **x+5**. Press **Enter**.
- Press **Escape**.

13. Save the document.



Creating a Split-Screen Question – Question 2

- Custom Choice Question
 - single response
 - text color and font size modified
- Graph with linear functions
 - axes end values hidden
 - graph labels hidden
 - graph attributes and color modified



1. Select **Insert > Question... > Custom Choice**, and click **Insert**.

2. Split the screen by selecting **Page Layout >**

- The left side of the screen is ready for the question and answer choices to be entered.

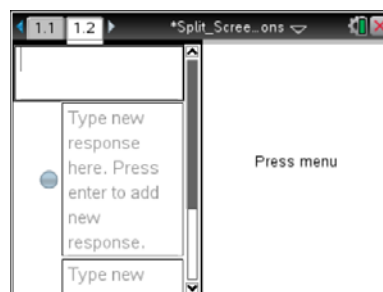
3. Type the question and answers as follows:

If the solid graph is the graph of $y = x$, which of the following could be the graph of $y = 3x$?

Graph A

Graph B

Graph C



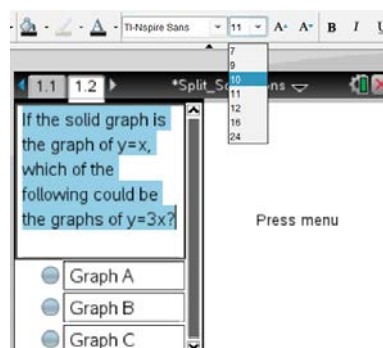
Note: To insert a third answer choice box, press **Enter** after typing “Graph B”.



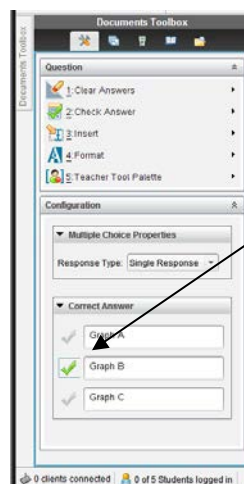
Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

- To change the font size of the question, click and drag the cursor to select the text, and then choose size 10 from the pull-down menu as shown at the right. Click to deselect the text.



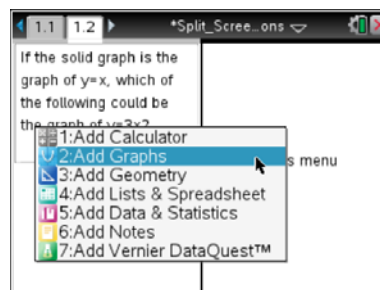
- Mark the correct answer by clicking on the check mark before the answer response 'Graph B' in the Document Tools pane of the Documents Toolbox.
 - The grey checkmark will change to a green checkmark.



- Next, click on the right side of the screen, and select **Add Graphs** to add a Graphs application.

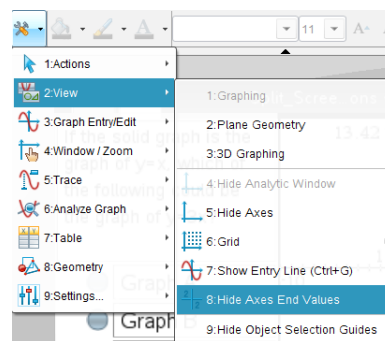
To add the graphs to the split screen, you will complete the following tasks:

- Hide end values of the axes.
- Hide tic labels.
- Graph four functions with labels.
- Modify the attributes of three of the graphs to easily distinguish between the graphs.
- Label the graphs.

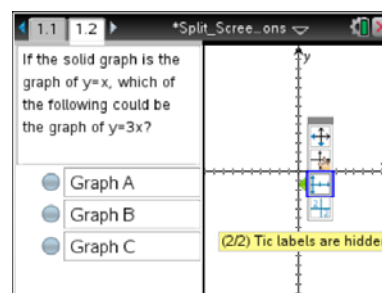


Creating Split-Screen Questions **TI PROFESSIONAL DEVELOPMENT**

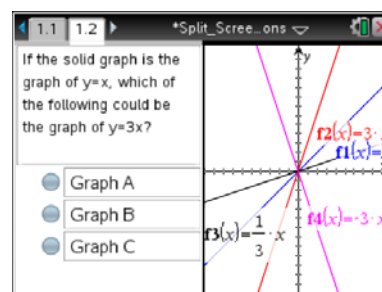
6. To hide the end values of the axes, select **View > Hide Axes End Values** from the Document Tools menu.



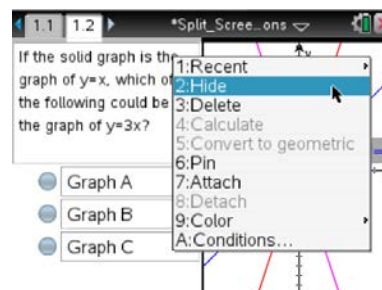
7. To hide the tic labels, right-click on the axes, select **Attributes**, press the down arrow to the third option, and press the right arrow to select **Tic labels are hidden**.



8. Enter the functions into the function entry line.
- Click into the Entry Line. (If the function entry line is not displayed, press **Tab**.)
 - Type **x** after $f1(x)=$, and press **Enter**.
 - Press **Tab** to re-open the function entry line, type **3x** after $f2(x)=$, and press **Enter**.
 - Press the TAB button to re-open the function entry line, type **(1/3)x** after $f3(x)=$, and press **Enter**.
 - Press the TAB button to re-open the function entry line, type **-3x** after $f4(x)=$, and press **Enter**.



9. To hide the function labels, move the cursor to each label, right-click, and select **Hide**.





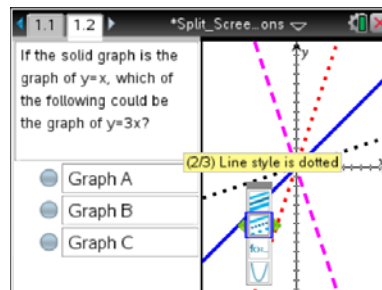
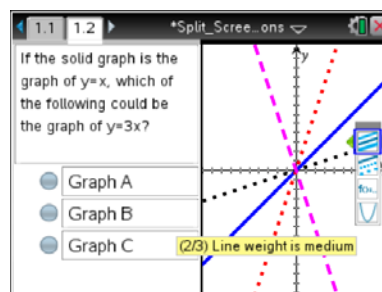
Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

10. To change the attributes of the functions, perform the following actions for each graph:

- Right-click on the graph, and select **Attributes**.
- Use the right and down arrows to adjust the first two attributes, Line weight and Line style, for the graph.

Note: The goal of this step is to be sure students are able to clearly distinguish between the graphs.

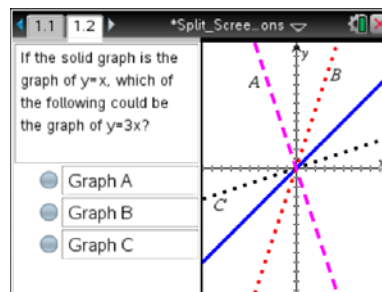


11. To label the graphs, select **Actions > Text** from the Documents Toolbox.

- You will see the “text” tool icon in the upper left corner of the Graphs page.

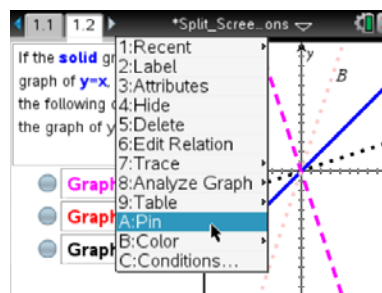
12. Click in the open space to create a text box.

- Type **A**, and press **Enter**.
- Click in an open space to create a text box, and repeat for **B** and **C**.
- Press **Escape** to turn off the text tool.
- Drag the labels to appropriate locations near the graphs.



13. It is suggested that you **Pin** the lines so the functions cannot be changed.

- Right-click on a graph, and select **A:Pin**
- Repeat for the remaining graphs.





Creating Split-Screen Questions

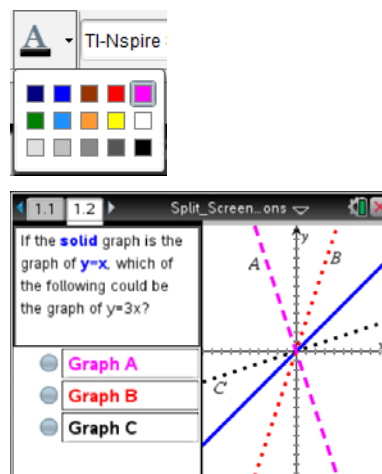
TI PROFESSIONAL DEVELOPMENT

14. Move to the left side of the screen.

- Change the color of the answer options to match the graph color by highlighting the words, clicking **Set the color of the selected text**, and selecting the appropriate color.
- You might also want to change some of the text to **Bold**.

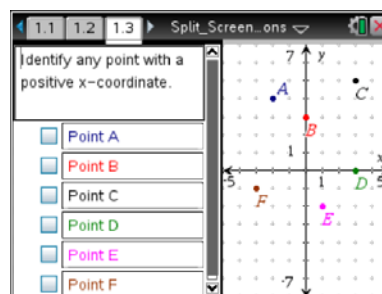
Optional: Change the color of the text “solid” and “ $y=x$ ” in the question to match the color of the graph of $y=x$.

15. Save the document.



Creating a Split-Screen Question – Question 3

- Custom Choice Question with multiple responses
- Graph with grid and points with labels



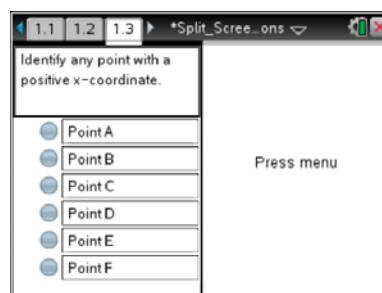
1. Select **Insert > Question... > Custom Choice**, and click **Insert**.

2. Split the screen by selecting **Page Layout > **.

3. Type the question prompt and the answers as follows:

Identify any point with a positive x-coordinate.

Point A
Point B
Point C
Point D
Point E
Point F



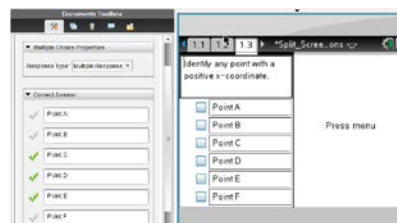
- To change the font size of the question prompt and answers, click and drag the cursor to select the text, and then choose size 9 from the drop-down menu. Click to de-select the text.



Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

4. Change the Response Type, and mark the correct answers in the Document Tools pane of the Documents Toolbox.
 - Choose **Multiple Response**.
 - Click on the check mark to the left of each correct answer. The grey checkmark will change to a green checkmark.
 - (The correct answers for the points to be plotted are Point C, Point D, and Point E.)



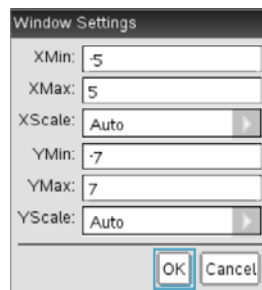
5. Click on the right side of the screen, and select **Add Graphs** to add a Graphs application.

For the graph portion of the question, you will complete the following tasks:

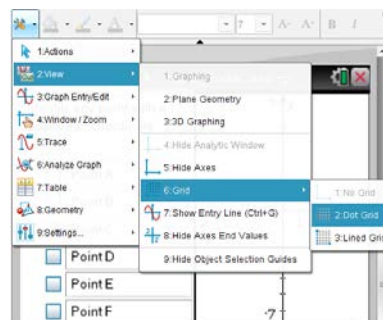
- change the window settings
- show a Dot Grid
- plot and label points
- pin the points and change their colors


6. Change the graph window by choosing **Window/Zoom > Window Settings** from the Documents Toolbox and entering the values shown here:

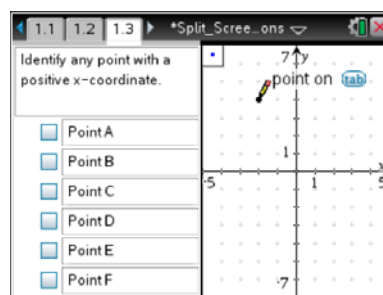
XMin: -5	YMin: -7
XMax: 5	YMax: 7
XScale: Auto	YScale: Auto



7. Add a grid to the graph screen by choosing **View > Grid > Dot Grid**.



8. To plot the points, choose **Geometry > Points & Lines > Point** from the Documents Toolbox.
 - Move the pencil cursor to (-2, 4). The cursor will “snap” to the grid and you will see **point on**.
 - Click to mark the point.
 - Type **A** to label the point.
(The letter might be obscured by the )

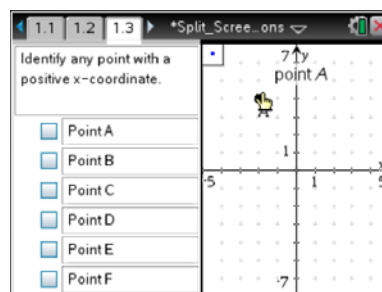




Creating Split-Screen Questions

TI PROFESSIONAL DEVELOPMENT

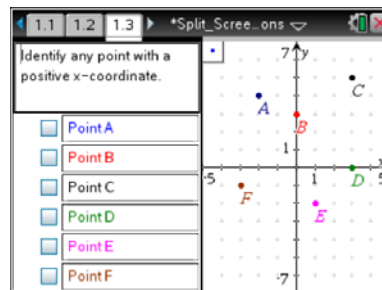
- Repeat for the remaining points:
B(0, 3) C(3, 5) D(3, 0) E(1, -2) F(-3, -1)
- Press **Escape**.



9. To complete the question:

- **Pin** each point.
- Change the color so that each point has a unique color.
- Change the color of the font on the left to match the color of each point.

10. Save the document.



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Weaving in TI-Nspire™ Navigator™ **TI PROFESSIONAL DEVELOPMENT**

Objectives

- Use the TI-Nspire™ Navigator™ System and explore how it can administer and enhance a classroom lesson.

About the Lesson

- Plan a TI-Nspire™ lesson that incorporates TI-Nspire Navigator features.

TI-Nspire™ Technology Skills:

- Opening a TI-Nspire document
- Navigating a TI-Nspire document

Tech Tips:

- When you download an activity from the Content Workspace, the activity is downloaded as a lesson bundle with file extension .TILB.

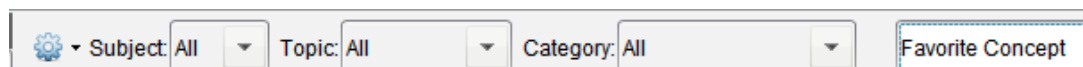
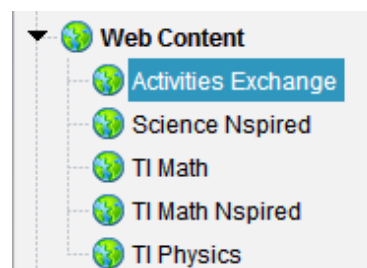
Lesson Materials:

Equipment for each participant

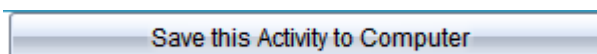
- Computer with TI-Nspire™ Navigator™ Teacher Software and Internet connectivity

Select an Activity

1. Use the Content Workspace to search through the available Web Content for an activity related to any concept you choose.
 - If Internet access is not available, browse the collection of activities in the folder for the workshop.



2. Save the activity files to your computer.



Review the Activity

3. Familiarize yourself with the activity. Record any notes you have about the activity below.

**Pre-test Considerations**

4. What specific questions are appropriate to activate prior learning?

TI-Nspire Navigator Enhancements

Think about some of the TI-Navigator functionality you have learned:

- Sending and Collecting Documents
- Screen Capture
- Live Presenter
- Quick Poll
- Portfolio

5. What TI-Nspire Navigator features could you use to improve this lesson?

6. How can the use of TI-Nspire Navigator enhance your understanding of your students' learning?

**Post-test Considerations**

7. What specific questions are appropriate to assess whether the primary learning goals have been achieved?

Wrap-Up with a Large Group Share

Your instructor will guide a discussion related to the following questions. Be prepared to discuss your thoughts.

8. How easy was it to weave TI-Nspire Navigator into this activity?

9. What gave you the most difficulty/challenge?

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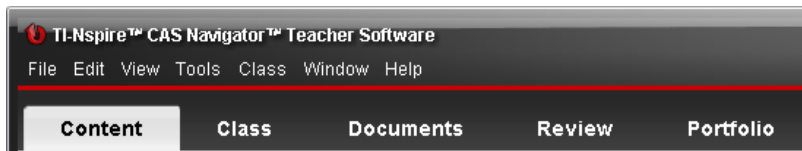
Tip Sheet: Overview of Workspaces TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

- Differentiate between the different workspaces in the TI-Nspire™ Navigator™ Teacher Software.

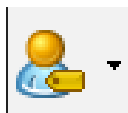
Overview of Workspaces

There are five different workspaces in the TI-Nspire Navigator Teacher Software: Content, Class, Documents, Review, and Portfolio. To move between the workspaces, click on the appropriate tab.

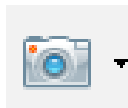
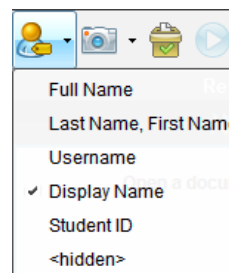


Each workspace has a specific purpose, but they work together to create a complete package for the TI-Nspire Navigator classroom. Depending on the selected workspace, the menus options and icons will change appropriately.

Icons Available in All Workspaces



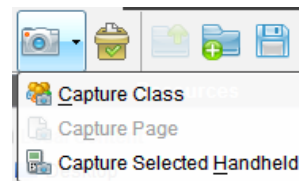
The **Student Name Format** icon allows the teacher to change the displayed format of the students in a TI-Navigator class. The change will be reflected in all workspaces, including the Portfolio Workspace.



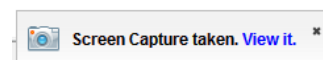
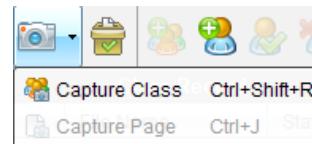
Clicking the **Take Screen Capture** icon allows the teacher to take a class capture, capture a page of a document in the Documents Workspace, or take a screen capture of a connected handheld. The availability of the options depends on the state of the software and workspace.

When **Capture Page** or **Capture Selected Handheld** is selected, a pop-up window appears in the lower right-hand corner allowing you to view the capture in the Screen Capture Window. The screen capture is also automatically placed into the computer's clipboard and can be immediately pasted into other software, such as a word processing document.

TI-Nspire™ Navigator System:



TI-Nspire™ Navigator™ NC:



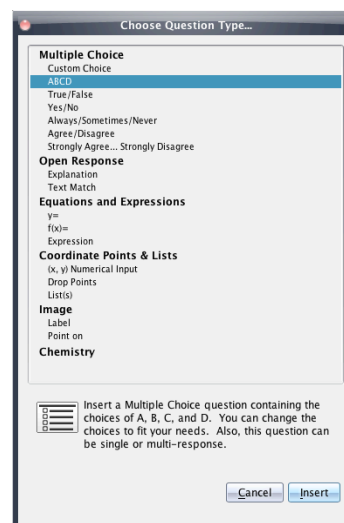


Tip Sheet: Overview of Workspaces

TI PROFESSIONAL DEVELOPMENT



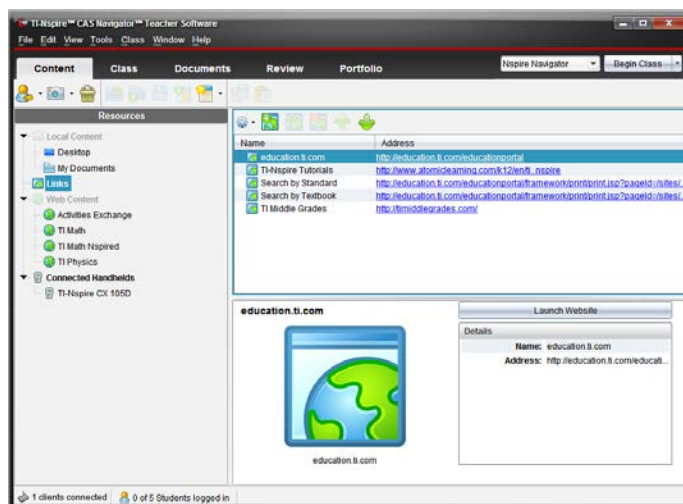
Clicking the **Quick Poll** icon allows teachers to create a new Quick Poll question at any time. The TI-Navigator Class does not have to be started, so a teacher can prepare questions before the class begins. It will be tagged with the name of the class that is displaying in the Class drop-down menu.



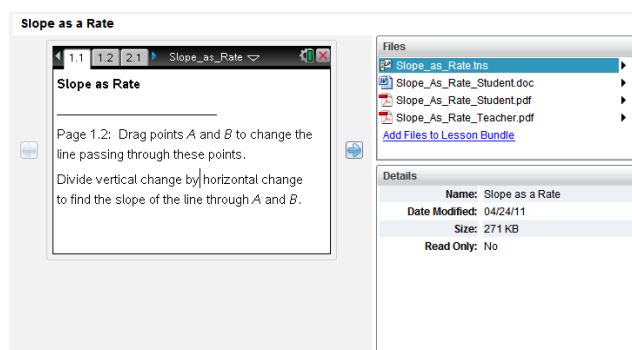
The Content Workspace

The Content Workspace is used for transferring TI-Nspire documents to/from the connected handhelds and the computer, for previewing documents, and for accessing documents on TI websites.

Note: When using the TI-Nspire™ Navigator™ NC Teacher Software, , the list of Connected Handhelds is not available in the Resources panel.



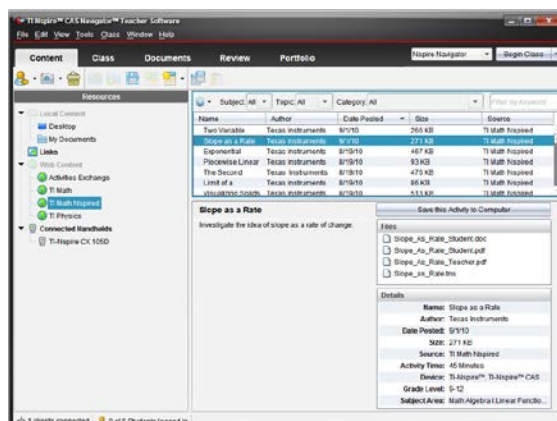
The Content Workspace allows the teacher to browse online TI activities without launching a web browser, to see an overview of the activity, to preview the TI-Nspire documents, and to save all the activity files to the computer.



Tip Sheet: Overview of Workspaces **TI PROFESSIONAL DEVELOPMENT**

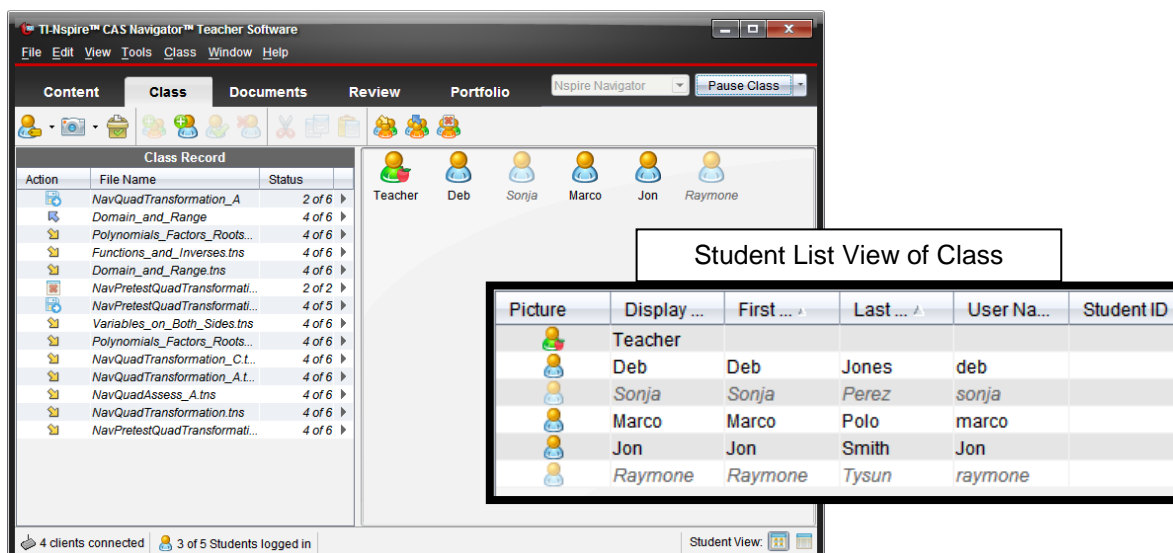
With this functionality, the TI-Nspire documents can be sent directly to the class or any connected handhelds without opening any other software.

Note: When using the TI-Nspire™ Navigator™ NC System, any type of document can be sent to students' computers. However, only TI-Nspire and PublishView™ documents can be opened using the TI-Nspire™ Student Software.



The Class Workspace

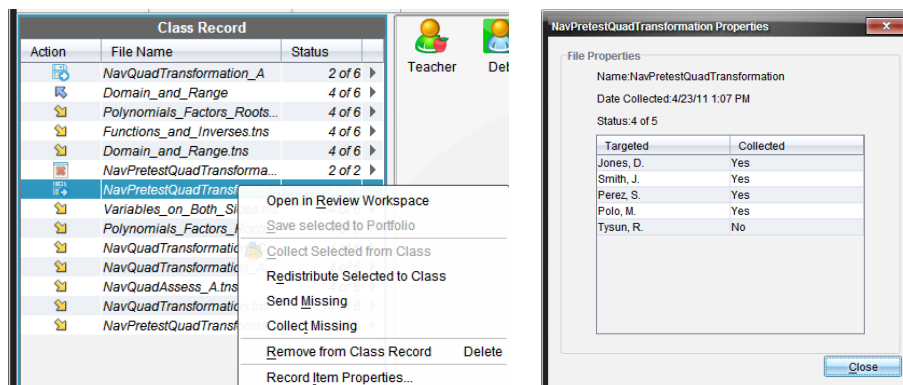
The Class Workspace allows the teacher to see which students are logged in to the classroom network and to see which documents have been transferred to/from the handhelds/computer via TI-Nspire Navigator. The teacher can also send/collect/delete documents to the class through the Class Workspace. Both the Seating Chart View and Student List View of the Class are shown below.



The screenshot shows the TI-Nspire CAS Navigator Teacher Software interface with the 'Class' tab selected. The 'Class Record' pane on the left lists documents and their status. The 'Student List View of Class' pane on the right shows a table of student information.

Picture	Display ...	First ...	Last ...	User Na...	Student ID
	Teacher				
	Deb	Deb	Jones	deb	
	Sonja	Sonja	Perez	sonja	
	Marco	Marco	Polo	marco	
	Jon	Jon	Smith	Jon	
	Raymone	Raymone	Tysun	raymone	

The Class Record is a listing of document transfers. The teacher can also access individual student information regarding a specific transfer.



The screenshot shows the TI-Nspire CAS Navigator Teacher Software interface with the 'Class Record' pane. A context menu is open over the 'NavPretestQuadTransformation' document, showing options like 'Open in Review Workspace', 'Save selected to Portfolio', 'Collect Selected from Class', 'Redistribute Selected to Class', 'Send Missing', 'Collect Missing', 'Remove from Class Record', and 'Record Item Properties...'. The 'NavPretestQuadTransformation Properties' dialog box is also open, showing file properties and a table of student data.


Targeted	Collected
Jones, D.	Yes
Smith, J.	Yes
Perez, S.	Yes
Polo, M.	Yes
Tysun, R.	No

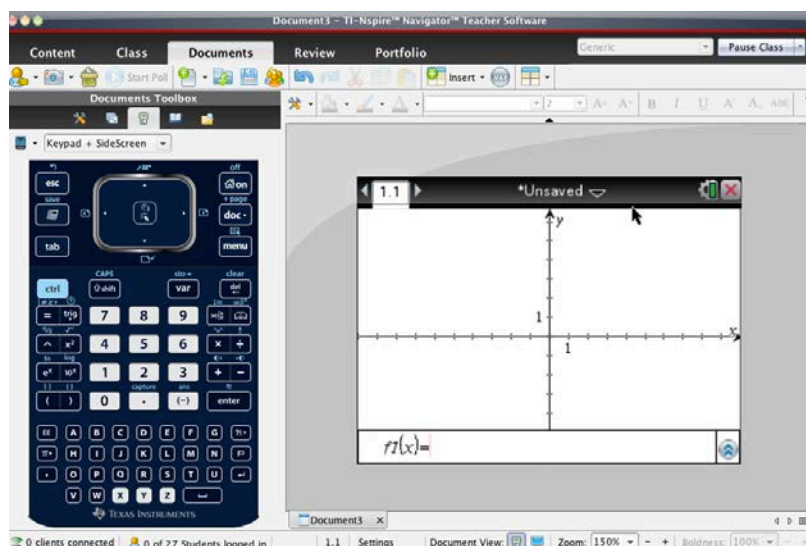


Tip Sheet: Overview of Workspaces





TI PROFESSIONAL DEVELOPMENT

The Documents Workspace

The Documents Workspace is used to create new TI-Nspire documents and to edit or view pre-created documents. When working in the classroom with TI-Nspire™ Teacher Software or TI-Nspire Navigator™ Teacher Software, most teachers click on the TI-SmartView™  tab (Tab 3) in the Documents Toolbox (left column).

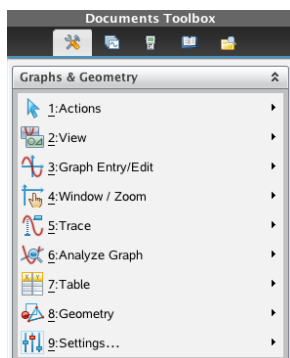


The Documents Toolbox also contains:

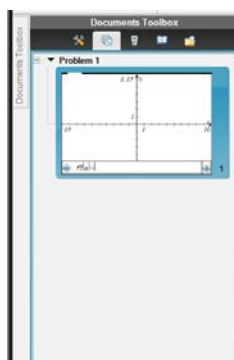
-  (Tab 1) Menu items unique for each application in a TI-Nspire document and question properties tools;
-  (Tab 2) Page sorter;
-  (Tab 4) Utilities such as math and symbol templates;
-  (Tab 5) Content Explorer file transfer tool that allows the user to transfer documents to/from the handhelds that are connected to the computer with a USB cable.

Note: When using the TI-Nspire™ Navigator™ NC Teacher Software, the Connected Handhelds list is not available in the Content Explorer.

Document Tools



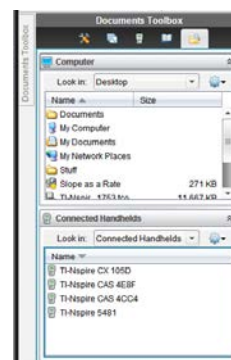
Page Sorter



Utilities



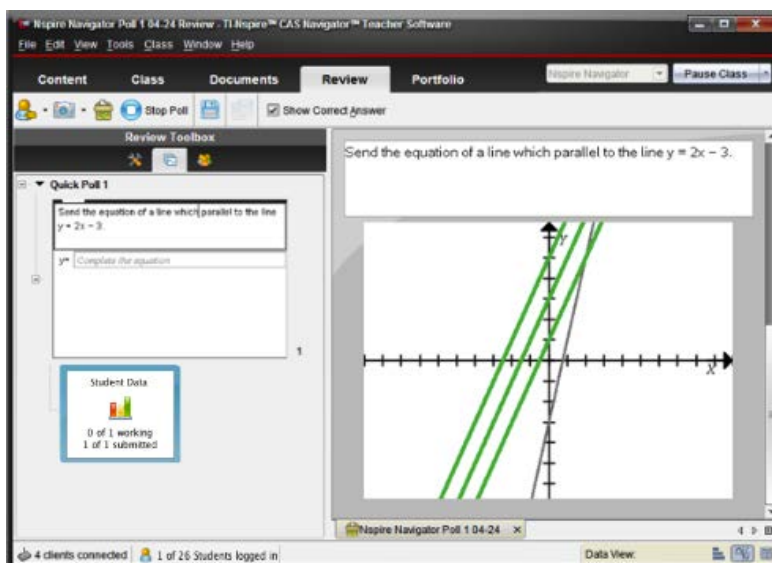
Content Explorer






Tip Sheet: Overview of Workspaces TI PROFESSIONAL DEVELOPMENT

The Review Workspace

The Review Workspace is used after a Quick Poll is sent or a TI-Nspire document containing questions is collected using the TI-Nspire Navigator system. The Review Workspace allows the teacher to analyze the results of a Quick Poll question or the document question by changing the Data View between a bar chart, graph, student work, and/or lists, depending on the configuration and Question Type.



The Review Toolbox contains:

-  (Tab 1) Menu action items unique for each type of question;
-  (Tab 2) Page sorter view to browse through the Quick Polls (or document with questions);
-  (Tab 3) Individual student details for each question.

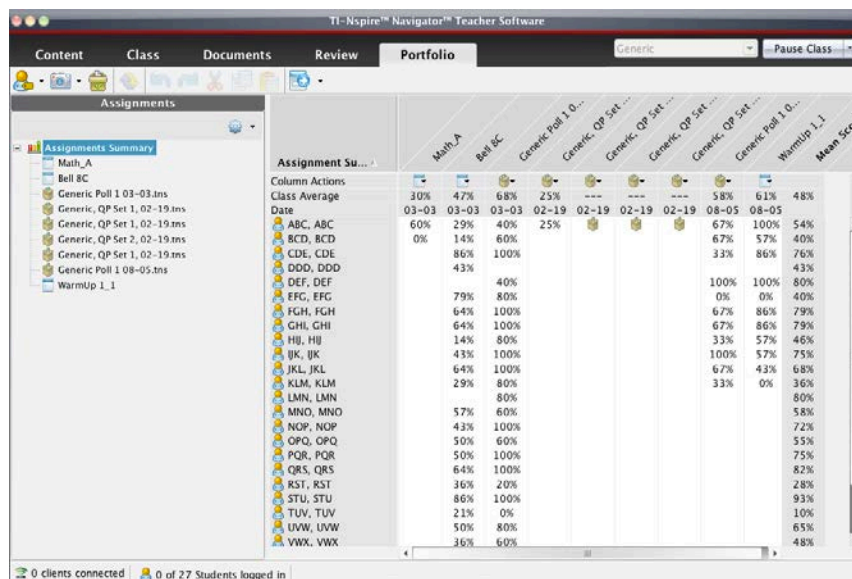
Review Tools



Students

Student	Response
Deb	$y = 2x + 1$
Jon	$y = 2x + 3$
Marco	$y = 4x - 3$
Raymone	
Sonja	
Teacher	$y = 2x + 5$

The Portfolio Workspace is used to view previously saved Quick Polls and TI-Nspire document results. The teacher can view the summary of scores by student, by question, and by class.



A screenshot of a data table with columns 'Transfer', 'Naïve', 'Quadratic', and 'Average'. The 'Average' column is selected, and a context menu is open over it. The menu options are: 'Open in Review Workspace', 'Open for Editing', 'Select Column', 'Sort Ascending', 'Sort Descending', 'Send Missing', 'Collect Missing', 'Redistribute to Class', 'Open Master Document', 'Remove From Portfolio', and 'Rename'. The 'Average' column header is highlighted in blue.

	Transfer	Naïve	Quadratic	Average
50%				
04-2				
100%				
67%				
0%				
33%				

- Open in Review Workspace
- Open for Editing
- Select Column
- Sort Ascending
- Sort Descending
- Send Missing
- Collect Missing
- Redistribute to Class
- Open Master Document
- Remove From Portfolio
- Rename

Content Class Documents Review **Portfolio** Generic Pause Class...

Assignments

Assignments Summary
 Main A
 Test BC
 Generic Poll 1 03-03.ms
 Generic, QP Set 1, 02-19.ms
 Generic, QP Set 1, 02-19.ms
 Generic, QP Set 2, 02-19.ms
 Generic, QP Set 1, 02-19.ms
 Generic Poll 1 08-05.ms
 Warmup 1_1

Self BC	Q1	Q2	Q3	+Points	Total Points	%	%
Total Possible:	1.0	1.0	1.0	0.0	14.0	Raw Score	Final Score
ABC, ABC	0.0	0.0	0.0	0.0	4.0	29%	29%
BCD, BCD	0.0	0.0	0.0	0.0	2.0	14%	14%
CDE, CDE	1.0	1.0	1.0	0.0	12.0	86%	86%
DEF, DEF							
EFG, EFG	0.0	1.0	1.0	0.0	11.0	79%	79%
FGH, FGH	1.0	1.0	1.0	0.0	9.0	64%	64%
GHI, GHI	1.0	0.0	1.0	0.0	9.0	64%	64%
HIJ, HIJ	1.0	0.0	1.0	0.0	2.0	14%	14%
JKL, JKL	1.0	0.0	0.0	0.0	6.0	43%	43%
Average	80%	28%	36%	0.0	6.6	47%	47%


❌ Q1 Question:
 Simplify $\sqrt[3]{500}$.
 ABC Answered:
 $\sqrt[3]{50}$
 Correct Response:
 $50\sqrt[3]{2}$
 Choices:
 $10\sqrt[3]{5}$

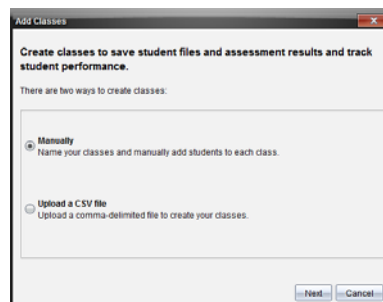
Tip Sheet: Adding Classes TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

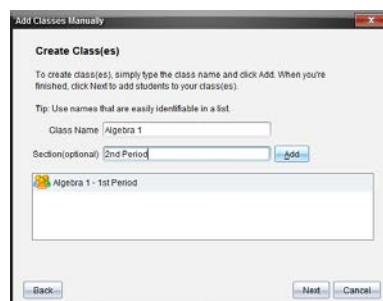
- Create classes in the TI-Nspire™ Navigator™ System.

Manually Adding Classes

1. Click the Add Classes icon . Select **Manually**, and click **Next**.

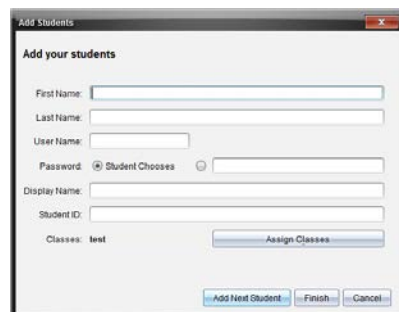


2. Fill in the field for Class Name as desired. You can have multiple sections of the same class name. For example, you can have Algebra 1 – 1st Period and Algebra 1 – 2nd Period. Click **Add** after entering each class name. Click **Next** after all the classes have been added.



3. Click **Add Student** to manually create student accounts at this time.
 - Clicking **Finish** will create an empty class with the desired name.
4. To create student accounts, you must fill in the First Name, Last Name, and User Name fields. Students can be assigned passwords, or you can allow them to choose their own upon their first login.

- Students can be assigned a Display Name to allow for personalization or privacy, and/or Student ID's can be included as necessary. The Display Name defaults to the student's First Name if none is specified.
- Students can be assigned to multiple classes or moved from one class to another by clicking **Assign Classes** and checking the desired class location(s).



5. Click **Add Next Student** when finished with the first student. Click **Finish** when you are done adding students to the class.

Importing Classes and Students Automatically from CSV File

1. Store student information in a spreadsheet application such as Excel and save the file in CSV format. You must have a column for the **Class Name**, **Student First Name**, **Student Last Name**, and **Student User Name**. You can also include optional columns for *Section*, *Student ID*, and *Password*. The data may be exported from a grade book program or typed manually. The workshop instructor will have a sample CSV file.

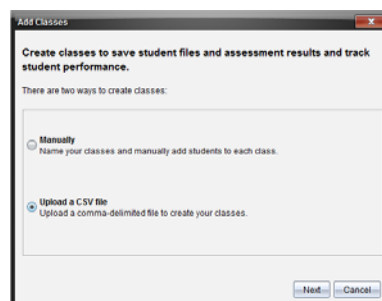


Tip Sheet: Adding Classes

TI PROFESSIONAL DEVELOPMENT

	A	B	C	D	E
1	Class	First	Last	Login	Last Four
2	Algebra1	Anna	Allen	ANN	9523
3	Geometry	Andrew	Anderson	AND	1008
4	Algebra2	Beth	Black	BET	5157
5	Algebra1	Bob	Brady	BOB	4051
6	Geometry	Blaise	Pascal	BLA	9851
7	Algebra2	Chris	Chambers	CHR	2230
8	Algebra1	Doug	Davis	DOU	5468

- Click the Add Classes icon . Select **Upload a CSV file**, and click **Next**.



Add Classes

Create classes to save student files and assessment results and track student performance.

There are two ways to create classes:

- ☐ **Manually**
Name your classes and manually add students to each class.
- ☒ **Upload a CSV file**
Upload a comma-delimited file to create your classes.

Next **Cancel**

- Click **Browse**, navigate to the location of the saved CSV file, and click **Next**.
- Use the drop-down menus to match up the columns in the CSV file to the TI-Navigator fields in the Add Classes by Uploading a CSV File dialog box.
- Click **Next** when finished mapping fields.



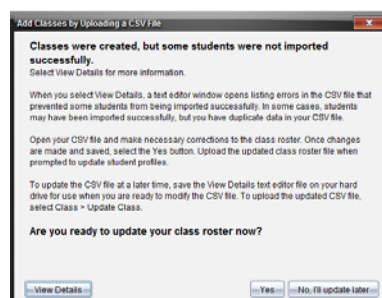
Add Classes by Uploading a CSV File

Mapping fields

Navigator fields	Imported file fields
Class Name*	Class
Section Name	Blank
First Name*	First
Last Name*	Blank
User Name*	Blank Class First
Student ID	Login Last Four None
Password	

Back **Next** **Cancel**

- If any import errors occur, they will be listed in the details on the next screen. The most common error is a duplicate username.
- The CSV file can be modified and uploaded again to correct any errors or import new students added to your classes at a later date. Alternatively, add the students manually.



Add Classes by Uploading a CSV File

Classes were created, but some students were not imported successfully.
Select View Details for more information.

When you select View Details, a text editor window opens listing errors in the CSV file that prevented some students from being imported successfully. In some cases, students may have been imported successfully, but you have duplicate data in your CSV file.

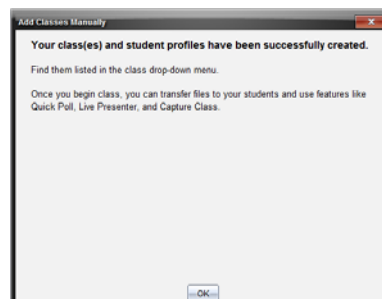
Open your CSV file and make necessary corrections to the class roster. Once changes are made and saved, select the Yes button. Upload the updated class roster file when prompted to update student profiles.

To update the CSV file at a later time, save the View Details text editor file on your hard drive for use when you are ready to modify the CSV file. To upload the updated CSV file, select Class -> Update Class.

Are you ready to update your class roster now?

View Details **Yes** **No, file update later**

- When the CSV file is successfully uploaded, you will receive a message that the classes and student profiles have been successfully created.



Add Classes Manually

Your class(es) and student profiles have been successfully created.

Find them listed in the class drop-down menu.

Once you begin class, you can transfer files to your students and use features like Quick Poll, Live Presenter, and Capture Class.

OK



Tip Sheet: Managing Classes

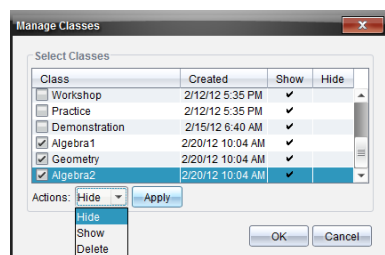
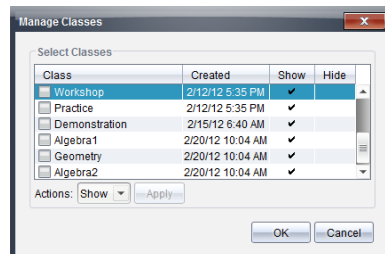
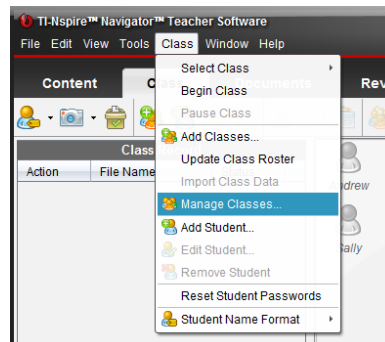
TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

- Manage classes using the TI-Nspire™ Navigator™ System.

Managing Classes (Hide/show and Delete)

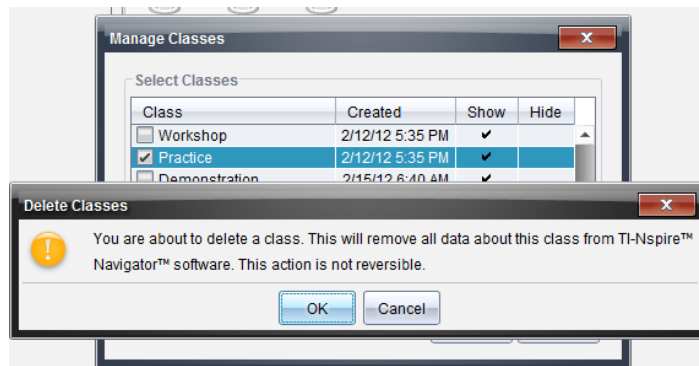
- Click **Class > Manage Classes** to open the Manage Classes dialog box.
 - All the classes that have been created on that computer will be displayed in the window.
- Check the box for any class that you would like to hide.
 - Select **Actions > Hide**, and click **Apply**.
 - Hidden classes can be retrieved later by returning to Manage Classes and changing their status to **Show**.



Note: Hiding a class will keep the student data attached with that class for future record keeping, but will keep that class from appearing in the list of active classes. This is helpful for schools that require teachers to maintain student records for past years.

- To delete a class, select the check box next to the class, select **Actions > Delete**, and click **Apply**.

Note: Be aware that the delete action is not reversible. **Deleted classes and student data associated with them will be permanently lost.**



- Click **OK** to exit the Manage Classes dialog box.

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Tip Sheet: Basic TI-Nspire™ Handheld Skills

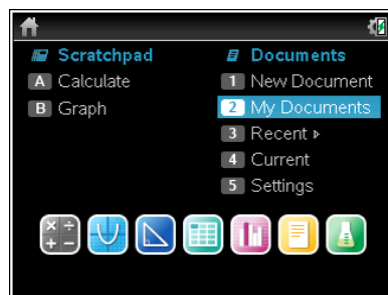
TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

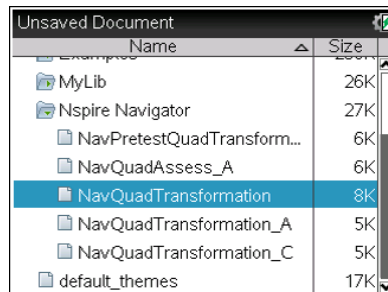
- Review the basic skills needed to use a TI-Nspire™ learning handheld.

Opening a Document

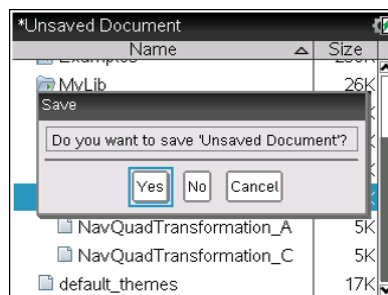
1. Power on the TI-Nspire™ handheld, and press on.



2. Go to **My Documents**.
3. Scroll to the appropriate file using the arrow keys (▼▲).
4. To open a folder, scroll to it, and press .
5. Scroll to the desired document, and press or to open the document.



- If the handheld already has a document open, you will have to choose whether or not to save changes to the prior document. Select Yes or No using the arrow keys (or), and press .
- The desired document is now open.

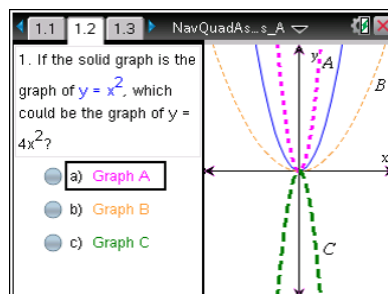


Selecting Answer Choices

1. To move from the question area to the answer area of a question, press .

Note: The arrows keys can be used, but the cursor will scroll through each line of the question area until it reaches the bottom.

2. Press repeatedly to move between the answer choices.
 - The arrow keys can be used here as well.

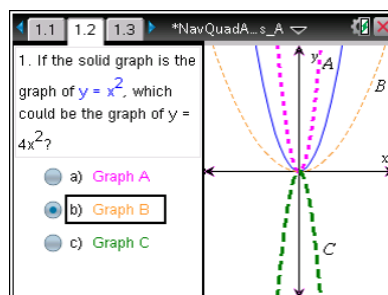




Tip Sheet: Basic TI-Nspire™ Handheld Skills

TI PROFESSIONAL DEVELOPMENT

3. When the desired answer choice is highlighted, press (or) to mark the answer.

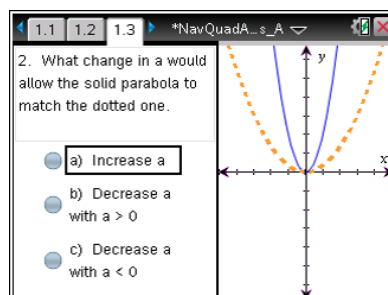


Moving between Pages

The tabs at the top of the handheld screen indicate that the document contains multiple pages.

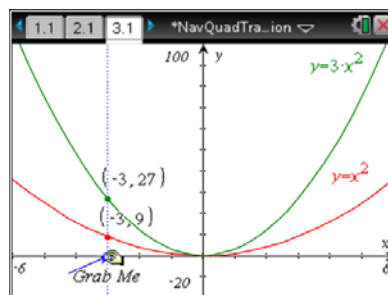
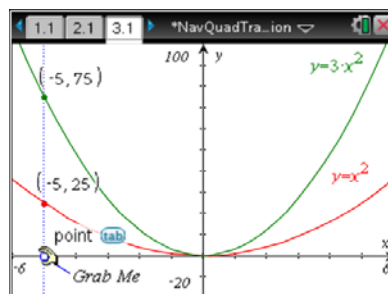
For example, in the open document shown to the right, the arrow to the right of tab 1.3 indicates that there are more than three pages in this document.

- To move to the next page in a document, press .
- To move to the previous page in a document, press .



Grabbing an Object

- Move the cursor to the graph until the cursor changes to an open hand icon ().
- Press to close the hand ().
- Use the arrow keys and/or the touchpad to move the object.
- Press to “drop” the object in the desired location.









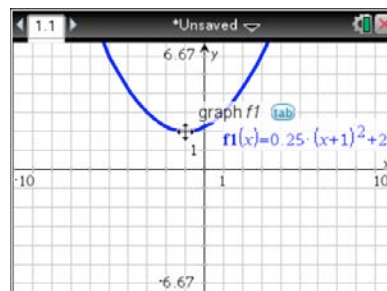
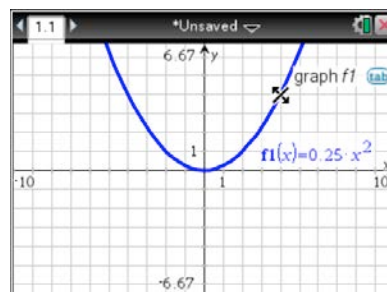
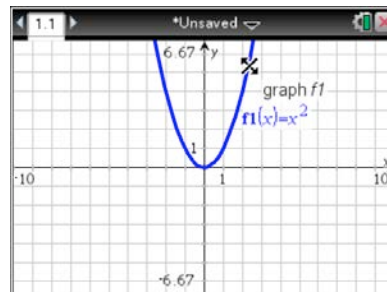


Tip Sheet: Basic TI-Nspire™ Handheld Skills

TI PROFESSIONAL DEVELOPMENT

Grabbing and Manipulating a Graph

1. Move the cursor to the graph until the cursor changes to the dilation symbol .
2. Press **ctrl**  to grab the graph.
3. Use the arrow keys and/or the touchpad to manipulate the graph.
4. Press  to “drop” the graph in place.
5. To translate the graph of a quadratic function, move the cursor to the center of the graph near the vertex. When the translation symbol  appears, press **ctrl**  to grab the graph.
6. Use the arrow keys and/or the Touchpad to translate the graph.
7. Press  to “drop” the graph in place.



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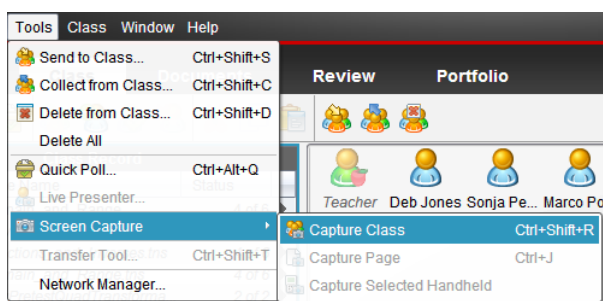
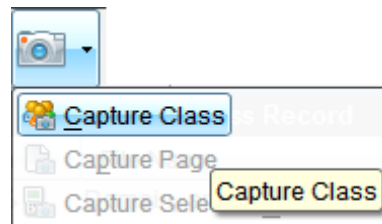
Tip Sheet: Live Presenter **TI PROFESSIONAL DEVELOPMENT**

TI-Nspire™ Navigator™ Objective

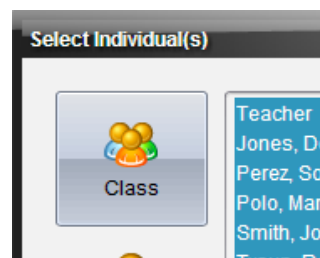
- Use the Live Presenter feature to direct instruction and check for student understanding.

Live Presenter from Class Capture

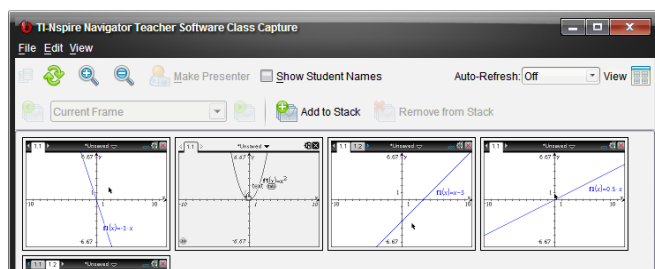
- Open the TI-Nspire™ Navigator™ Teacher Software, and start your LCD projector.
- Begin Class, and have the students log in to the TI-Nspire Navigator class.
- Select the **Capture** icon from the tool bar.
 - Alternatively select **Tools > Class Capture**, or use the computer keyboard shortcut **Ctrl+Shift+R**.



- Select the **Class** icon to take a screen capture of the entire class.



- Click **OK**.
 - You will see screen captures of the class (and they will be projected to the class).

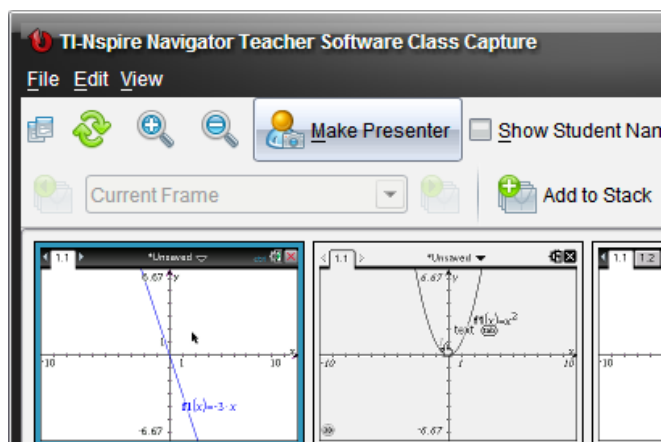


Tip Sheet: Live Presenter **TI PROFESSIONAL DEVELOPMENT**

6. Select a screen capture. The screen will have a blue border around it showing that it has been selected.

7. Click **Make Presenter**.

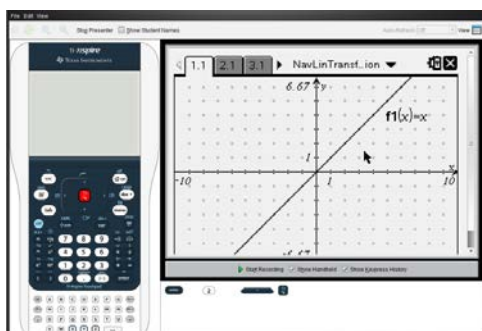
- The screen and handheld of the selected student only is projected to the class as the Live Presenter (as shown below).



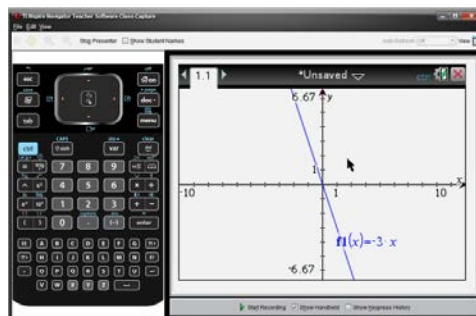
8. Everything the student does on the handheld is displayed to the class.

- Rather than the teacher pushing the buttons, he or she can give guided directions to the student and have the student go through the motions of the activity.
- Rotating the Live Presenter during a class period keeps students on task and allows the teacher to monitor student progress and understanding.

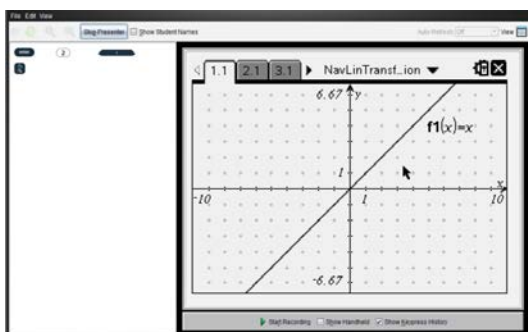
Note: The teacher can customize the layout of the presenter. Currently, the default is to show the Handheld and Key Press History. You can turn off either or both of these views to customize the Live Presenter. You will see the Key Press History and the screen changing in real time. Notice on the Teacher Software that you will see each specific button the student presses identified by a red outline.



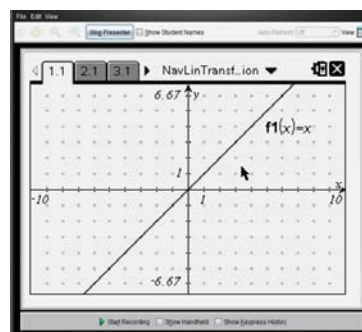
Show Handheld and Key Press History



Show Handheld Only



Show Key Press View Only



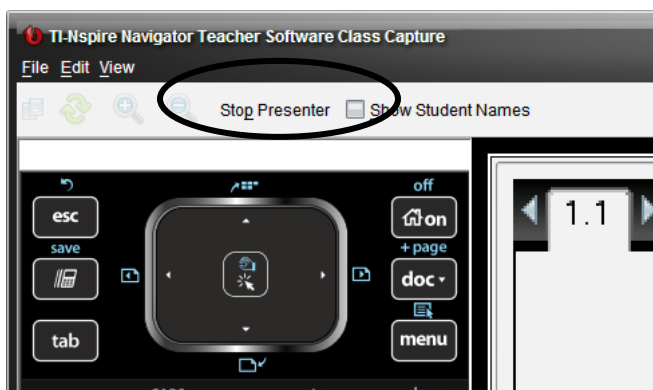
Neither Handheld Nor Key Press History



Tip Sheet: Live Presenter

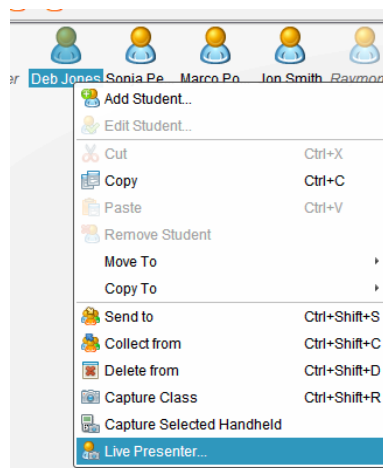
TI PROFESSIONAL DEVELOPMENT

9. Click **Stop Presenter** when a particular student is finished as the Live Presenter.
10. You will be taken back to the Class Capture Screen. At this time you can refresh screens and select a new student to become the Live Presenter.



Live Presenter from Classroom View

1. Open the TI-Nspire™ Navigator™ Teacher Software.
2. Begin Class, and have the students log in to the TI-Nspire Navigator class.
3. Right-click on a student icon, and select **Live Presenter**.
 - The student is automatically projected to the class as the Live Presenter.



Additional Features of Live Presenter

1. When the Live Presenter presses a button on the handheld, the button on the picture of the handheld is highlighted in RED to show the class which key has been pressed.
2. The teacher has the following options:
 - **Show Keypress History.** When selected, the class sees a list of keys the Live Presenter has pressed.
 - **Show Handheld.** Show/hide the graphic of the handheld on the left side of the window.
 - **Start Recording.** Select to start a video recording of what the Live Presenter is doing on the handheld. If desired, name the file, and save it on the computer. The video is saved as an .AVI file.



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Tip Sheet: Class Capture TI PROFESSIONAL DEVELOPMENT

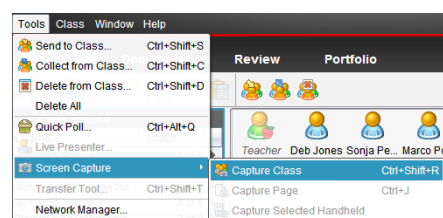
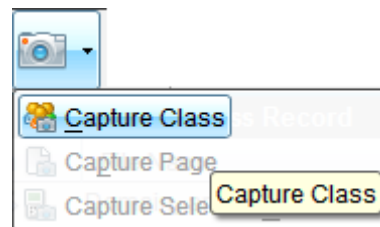
TI-Nspire™ Navigator™ Objective

- Use the TI-Nspire Navigator Class Capture feature to check for student understanding.

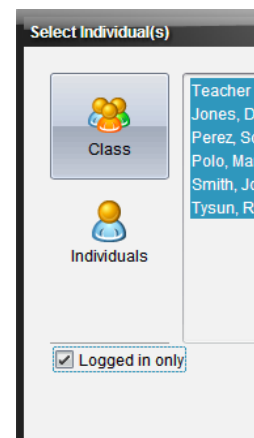
Viewing Class Screen Captures

- Open the TI-Nspire™ Navigator™ Teacher Software.
- Begin Class, and have students log in to the TI-Nspire Navigator class.
- Select the **Capture** icon from the tool bar, and choose **Capture Class**.
 - OR select **Tools > Capture Class**.
 - OR use the computer keyboard shortcut **Ctrl+Shift+R**.

Note: When using the TI-Nspire™ Navigator™ NC System, only the Capture Class and Capture Page options are available.

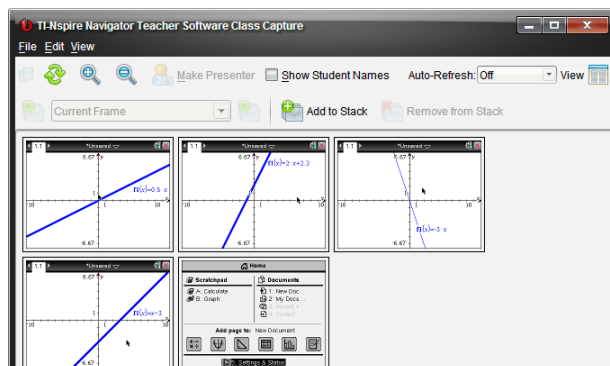


- Select the **Class** icon to take a class capture of the entire class, or select the **Individuals** icon to take a screen capture of individual students.
 - When using the Individuals option, hold down the **Ctrl** key to select any number of non-consecutive students, or hold down the **Shift** key to select any number of consecutive students from the list.
 - When you select the “logged in only” option, only the students logged in to TI-Nspire™ Navigator™ System will be displayed.
 - The TI-Nspire™ Navigator™ NC Teacher Software has the additional option to “Show TI-Nspire™ Work Area only.” When this option is selected, only students’ work areas in the TI-Nspire™ Student Software will appear in the class capture. Otherwise, students’ entire desktops will be shown.



- ☒ Logged in only
☒ Show TI-Nspire™ Work Area only

- Click **OK**.
 - The student screens will be tiled alphabetically according to Display Name.
 - The teacher screen will be identified by a blue border (unless the Teacher Preferences have been adjusted).

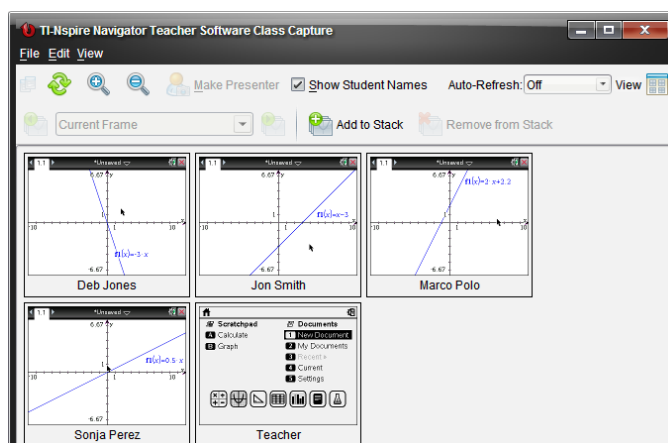




Tip Sheet: Class Capture

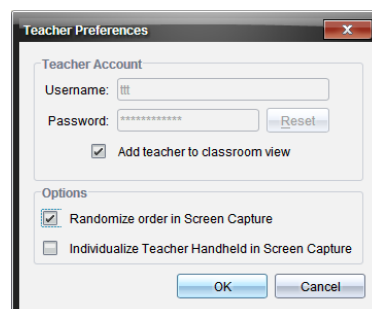
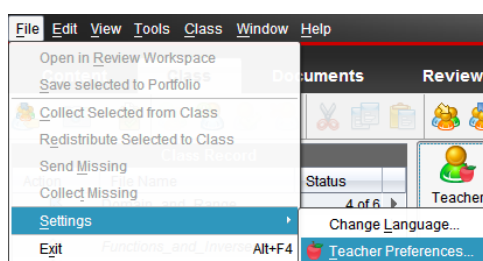
TI PROFESSIONAL DEVELOPMENT

6. To refresh the Class Capture, press the **Refresh** icon. Otherwise, the screens are in the same state as when you initialized the Class Capture.
7. The teacher has the option of choosing whether the student names are displayed with the screen captures.
 - Select **Show Student Names** as desired.
 - Use caution when showing student names in front of the class. The anonymity of the screen captures can very important to avoid potential student embarrassment.



Class Capture Teacher Preferences

In the Class Workspace, select **File > Settings > Teacher Preferences**.



- Toggle the student screen display between alphabetical by display name and random distribution with the option “Randomize order in Screen Capture.”
- Hide/show the Teacher handheld screen with the student screens using the option “Individualize Teacher Handheld in Screen Capture.”

Note: When using the TI-Nspire Navigator NC Teacher Software, Login information and Network Settings are shown instead of the Teacher Account information. The only Class Capture option available is “Randomize order in Screen Capture.”



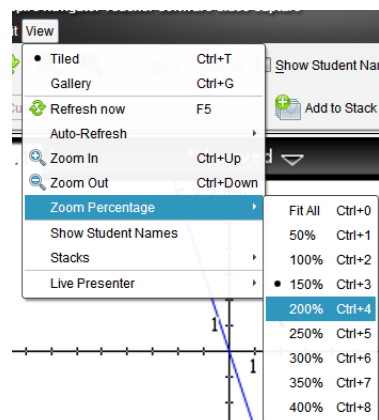
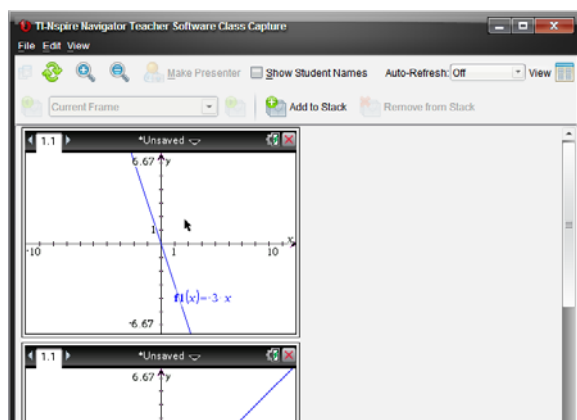
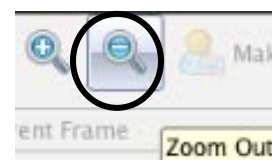
Tip Sheet: Class Capture

TI PROFESSIONAL DEVELOPMENT

Class Capture Features

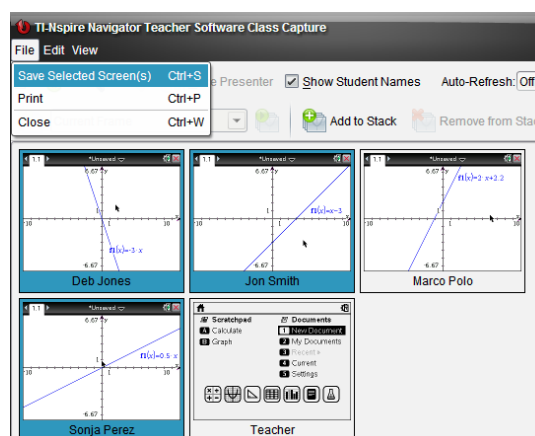
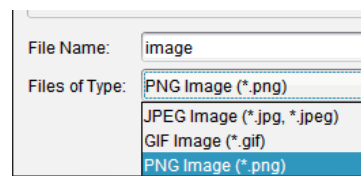
Zooming

- Pressing the **Zoom In** button enlarges the screens displayed on the teacher's computer.
- Pressing the **Zoom Out** button shrinks the screens displayed on the teacher's computer. It can be used to return the screens to the normal display size.
- From the **View** menu, you can select a fixed screen size on the teacher's computer.



Saving Screen Captures

- Select a screen in the **Class Capture** window to save. To save multiple screens, use the **Ctrl** key.
- Select **File > Save Selected Screen(s)** to save one or more screen captures as a .JPG, .PNG, or .GIF image file (all images will be saved in the same format).
 - Student screens that have been selected will be highlighted with a blue shaded border.
 - Only students who are logged in will be saved. Even if the Class Capture is showing the "Not Logged In" screen, the handheld screens will not be saved.
 - The screens will be saved as individual files without a student identifier (Image1, Image2, etc.). If the purpose for saving is for grading, the best option is to print the screen captures.



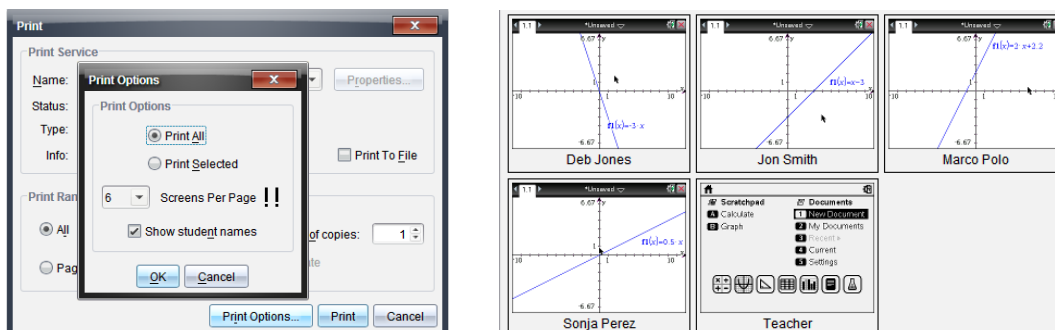


Tip Sheet: Class Capture

TI PROFESSIONAL DEVELOPMENT

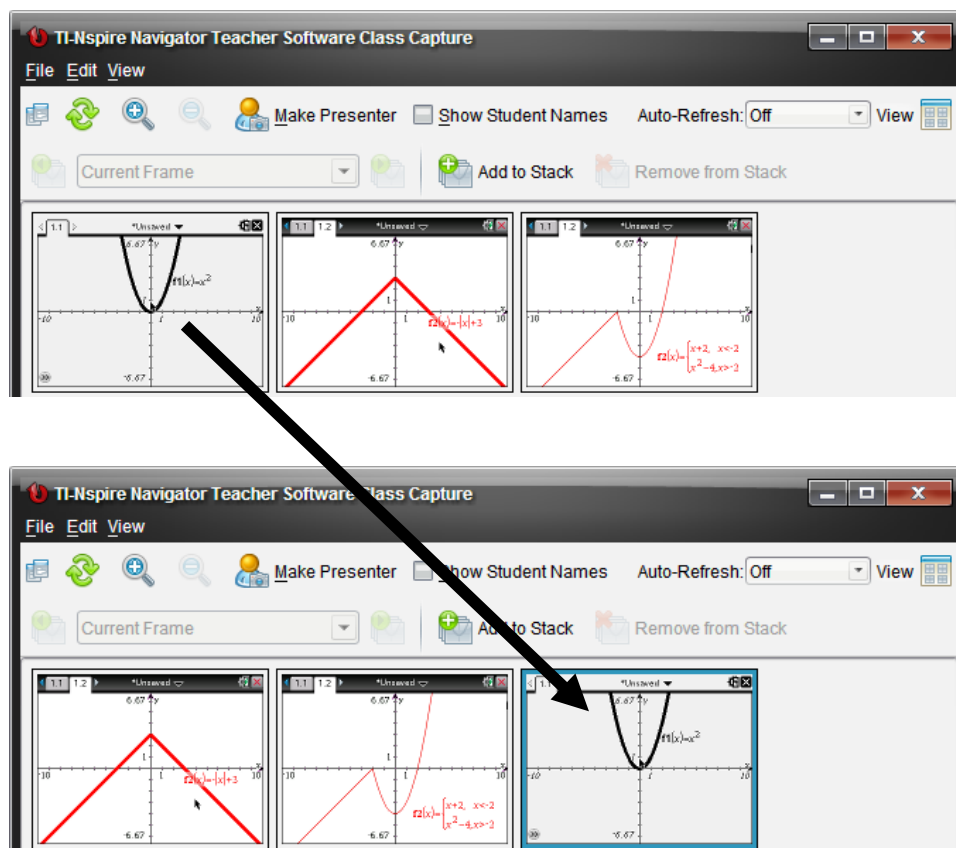
Printing Screen Captures

- Class screen captures can be printed with the screen identifiers by selecting **File > Print**. The Print Options dialog box allows you to tailor such options as the number of screens per page.



Reordering Screen Captures

- Click to drag and drop student screens to new positions within the Class Capture window.
- Note the difference between the two groups of three screen captures below.



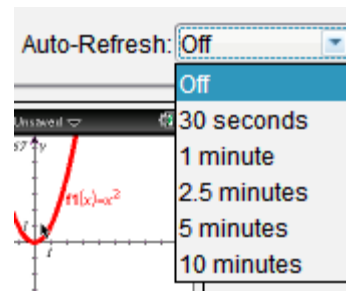


Tip Sheet: Class Capture

TI PROFESSIONAL DEVELOPMENT

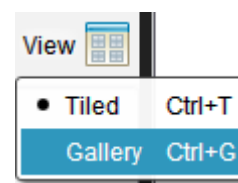
Auto-Refresh

- Once you have taken a Class Capture, click on the Auto-Refresh drop-down menu to select how often to automatically refresh student screens.
- You can use this feature to monitor student progress by setting it to refresh in several time intervals from 30 seconds to 10 minutes.

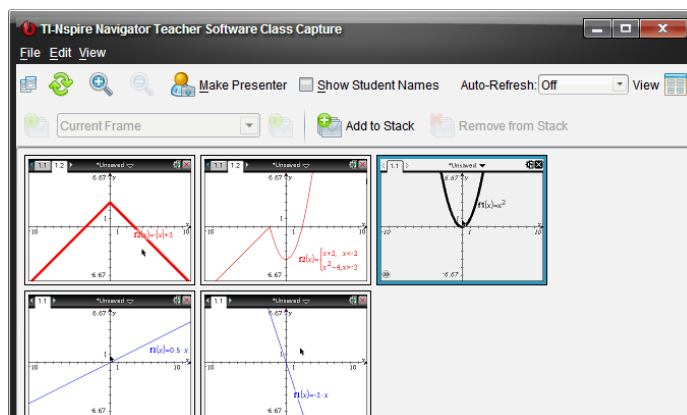


Changing the View

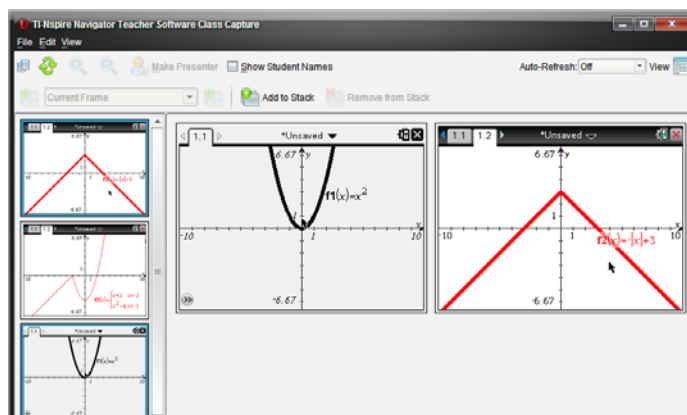
- By default, the class capture is in Tiled view.
- To change to Gallery view, click the **View** icon and select **Gallery** (or use the computer keyboard shortcut **CTRL+G**).



- Tiled View allows easy access to a full class set of screen captures.



- Gallery View allows easy comparison of a few screens by selecting them in the gallery list on the left using the **Ctrl** key.



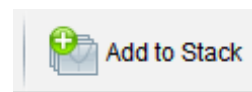


Tip Sheet: Class Capture

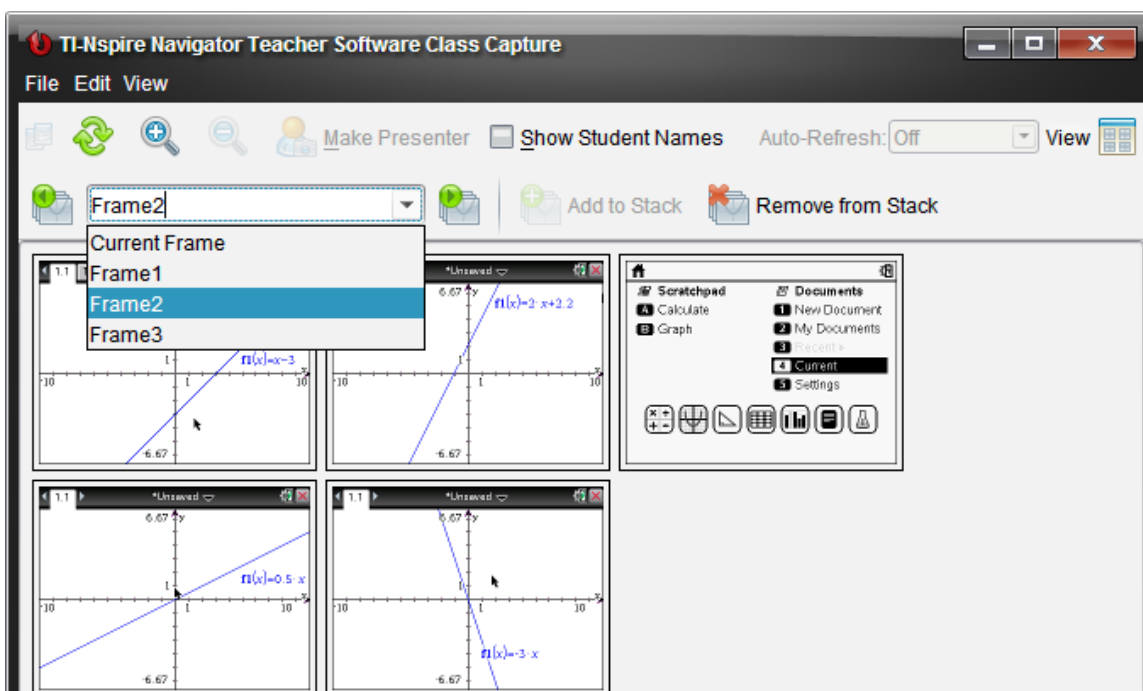
TI PROFESSIONAL DEVELOPMENT

Using Screen Stacks

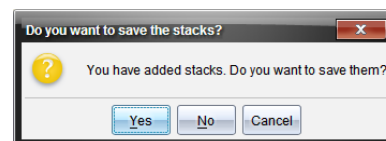
Teachers might not have time to save individual student screens during class. To help with this, a set of Class Captures can be stored as **stacks** of **frames** as if they are stored on multiple clipboards. A frame is one set of class captures. A stack holds multiple frames of class captures.



1. Click the **Add to Stack** icon to store the current set of Class Captures.
2. The teacher can **Add to Stack** multiple times throughout a class session for later review or analysis.
3. The stacks can be reviewed by clicking the Frame drop-down menu or the **Previous Frame** or **Next Frame** icons on either side of the drop-down menu.



4. Unwanted stacks can be deleted by clicking the **Remove from Stack** icon.
5. Save individual screens from any frame as image files. Select the screen(s) to save, and choose **File > Save Selected Screen(s)**.
6. When the Class Capture window is closed, you will be asked whether you want to save the stacks. Click **Yes** if you want to save the stacks of Class Captures.
 - Later, you can go through the stacks of frames for a class and save individual Class Capture images.





Tip Sheet: Quick Poll

TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

- Use the various features of Quick Poll, such as sending, collecting, and reviewing a Quick Poll.

What is Quick Poll?

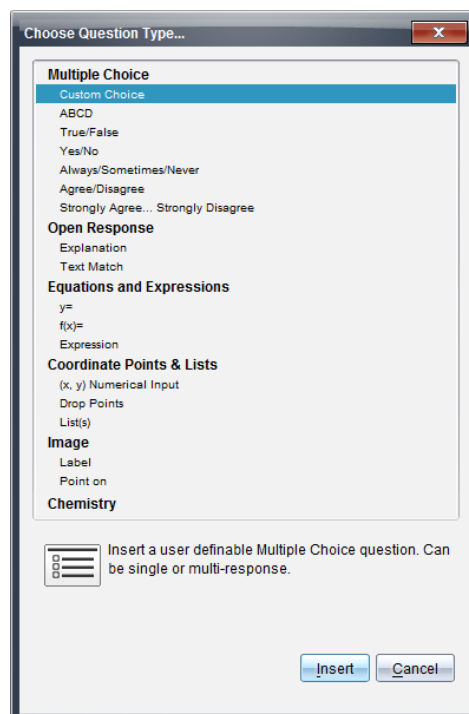
An important teaching technique is *questioning students* during class to gauge their understanding of the topics and to ensure that the class discussion is on pace with the students understanding.

The Quick Poll feature of the TI-Nspire™ Navigator™ System enhances the questioning technique by allowing ALL students to answer the posed questions and allowing the teacher to see ALL student responses in real time. Then the teacher can make the appropriate reactions/adjustments to the class based on the snapshot of student understanding.

Question Types

There are various types of Quick Poll questions:

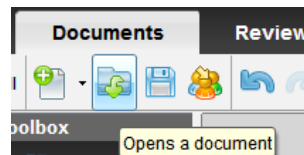
- Custom Multiple Choice
- Standard Multiple Choice (A-B, A-C, etc.)
- True/False
- Yes/No
- Always/Sometimes/Never
- Agree/Disagree (5, 3, or 2 selections)
- Open Response – Explanation
- Open Response – Text Match
- Equations ($y=$ and $f(x)=$)
- Expressions
- (x,y) Numerical Input
- Drop Points on a Coordinate System
- List(s)
- Image (Label, Point on)
- Chemistry



Sending Pre-Made Quick Poll Questions to the Class

Any question page can be sent as a Quick Poll question. The teacher can create a document ahead of class time with questions they anticipate might be helpful to ask students to gauge their understanding of a concept. Teachers can decide during class which ones are appropriate to help guide the lesson.

1. Open the document containing questions for potential Quick Poll questions in the Documents Workspace.



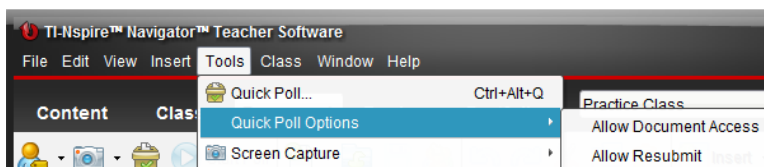


Tip Sheet: Quick Poll

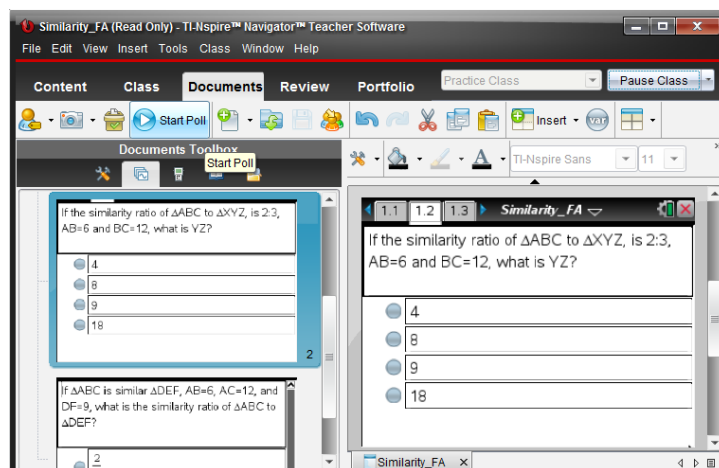
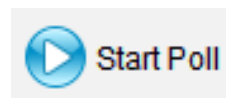
TI PROFESSIONAL DEVELOPMENT

2. (Optional) Modify the Quick Poll Options.

- Allow students access to documents on their handheld. This option is not available when using the TI-Nspire™ Navigator™ NC Teacher Software.
- Allow students to resubmit their Quick Poll answers.



3. After the TI-Navigator class has been started and students have logged in to class, the current question being viewed in the Documents Workspace can be sent as a Quick Poll by clicking the **Start Poll** icon.



4. When all students have answered the question, click the **Stop Poll** icon.

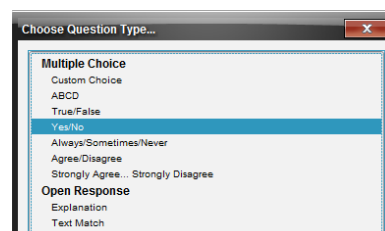


Sending “On-The-Fly” Quick Poll Questions to the Class

1. After the TI-Navigator class has been started and students have logged in to class, click the **Quick Poll** icon.
2. Select a Question Type, and press **Insert**.



- If this is the first Quick Poll question of the TI-Navigator session, a new document will open in the Documents Workspace titled “Class Name – QP Set # – Date”.

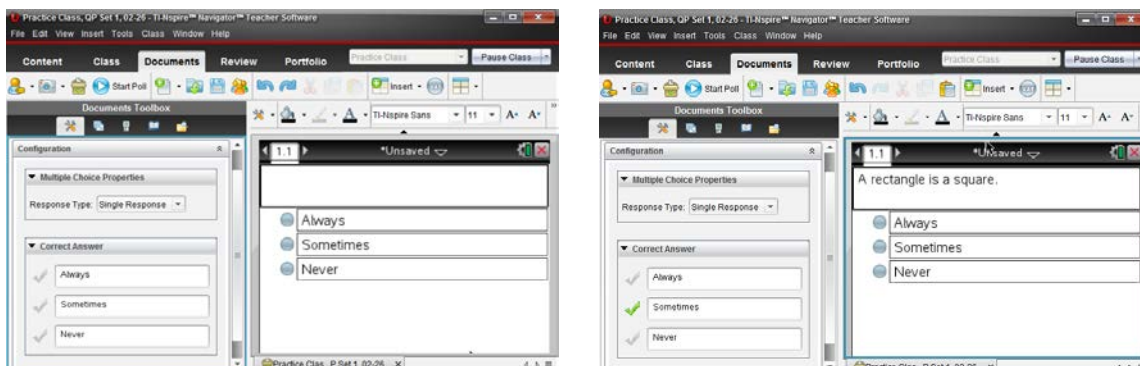




Tip Sheet: Quick Poll

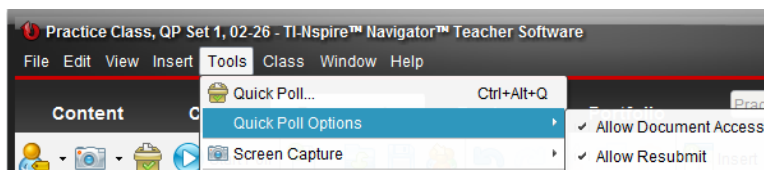
TI PROFESSIONAL DEVELOPMENT

- (Optional) Enter the question into the text box, and select/enter answers when appropriate.



- (Optional) Modify the Quick Poll Options.

- Allow students access to documents on their handheld.
- Allow students to resubmit their Quick Poll answers.



- Send the question to the class by clicking the **Start Poll** icon.



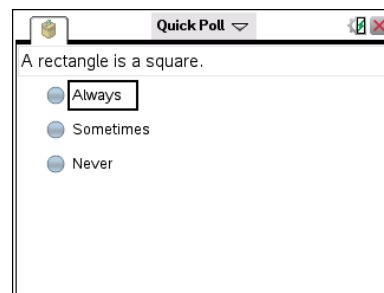
- When all students have answered the question, click the **Stop Poll** icon.



Responding to Quick Poll Questions as a Student

- After the teacher has started the Quick Poll question, all students who are logged in to the class will automatically receive the question on their calculators as a pop-up window.

- If a student logs into the class after the poll has been sent, they will receive the poll as long as the teacher hasn't click the **Stop Poll** icon.



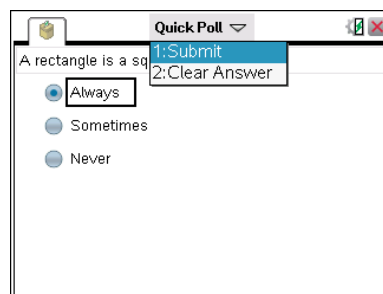
- For multiple choice questions, students move through the answer choices by pressing **tab** (or **▼**). To select an answer, they press **enter** or **↵**.
- For other types of questions, students enter the answer using the appropriate keys and templates on the handheld.



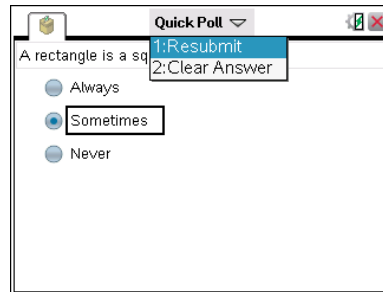
Tip Sheet: Quick Poll

TI PROFESSIONAL DEVELOPMENT

- To send the answer response to the teacher's computer, students press **doc** > **Submit**.



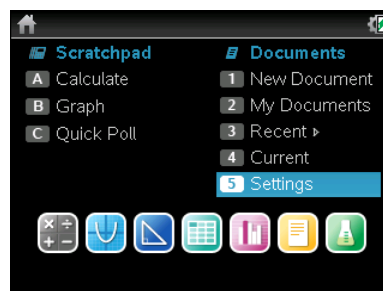
- If the Allow Resubmit option was selected by the teacher, students can change their answers and resubmit by pressing **doc** > **Resubmit**.



Note: If the resubmit option is not selected, the question will disappear from the handheld once the answer has been submitted.

- If the Allow Document Access option was selected by the teacher, students can temporarily exit the Quick Poll to look at a document by pressing **on** or **on**.

- To return to the Quick Poll question, select Quick Poll from the Home screen.



Note: When using the TI-Nspire Navigator NC Teacher Software, the "Allow Document Access" option is not available. By default, students will have access to all documents and applications on their computers during a Quick Poll.

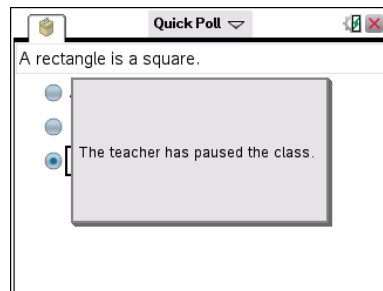
Pausing/Resuming Class

When students are having trouble with a Quick Poll question, the teacher might find it useful to gain the students attention by preventing them from interacting with their handheld, i.e., pausing the class. The **Pause Class** option will prevent any interaction with the handhelds.

- To pause the class, click the **Pause Class** icon, which is located by the class drop-down menu.



- When a class is paused, the students receive a message on their handhelds.



- To resume the class, click the **Resume Class** icon.

- Students are once again able to interact with their handhelds.





Tip Sheet: Quick Poll

TI PROFESSIONAL DEVELOPMENT

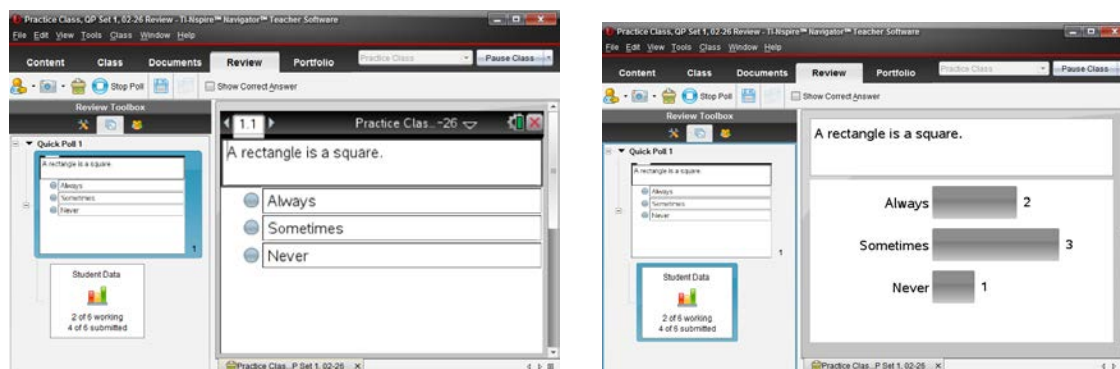
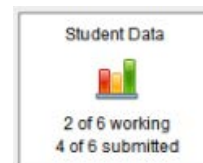
Viewing Quick Poll Results

The teacher can view the results of a Quick Poll while students are submitting their responses or after the Quick Poll has been stopped.

- As soon as the Quick Poll is sent to the class, the software automatically changes to the Review Workspace and displays the Quick Poll question that was sent to the class.

Note: The first 15 Quick Poll questions of the class session will be stored in a single Review document. After the 15th question, a new Review document will start for the next 15 Quick Poll questions.

- To view the class results for the Quick Poll questions, click on the **Student Data** icon underneath the Question page in the Page Sorter view. Alternatively, scroll down using the scroll bar to the right of the large view of the Quick Poll question (see below right).



- When all students have answered the question (or you are satisfied that a sufficient amount of time has passed), click the **Stop Poll** icon.

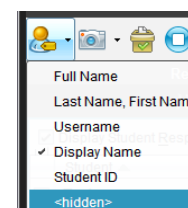


- If you did not select the correct answer in the Question page prior to starting the poll, right-click on the correct response, and select **Mark this Response Correct**.



- The bar next to the correct answer will turn green, indicating that it is the correct answer.
- To view the student-submitted answers in detail, click on the Students icon in the Review Toolbox.
- The display name and response are shown in a table.
- The poll details can be sorted by display name, by response, or by time. Click the top of the desired column to sort.
- To hide the student names, click the **Student Name Format** icon and select **<hidden>**.

Review Toolbox			
Display Student Responses			
Student	Response	Time	
AMY	Never	01:58:51...	
BERNADETTE	Always	01:48:24...	
HOWARD	Always	01:58:08...	
LEONARD	Sometimes	01:49:51...	
PENNY	Sometimes	01:48:35...	
SHELDON	Sometimes	01:50:06...	





Tip Sheet: Quick Poll

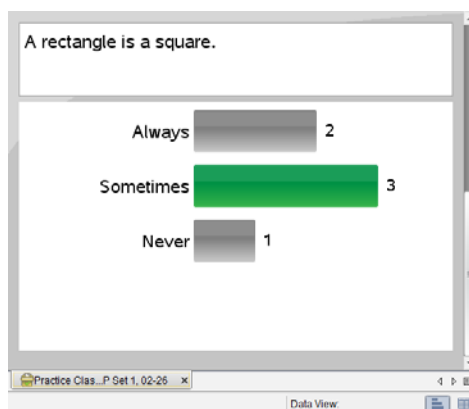
TI PROFESSIONAL DEVELOPMENT

Additional Data Views for Quick Poll Results

When the Student Data icon is selected, most of the results are displayed as a bar chart by default. Depending on the type of Quick Poll question, the results can be displayed in a variety of data views.

Data Views for Multiple Choice and Open Response Questions

Bar Chart



Frequency Table

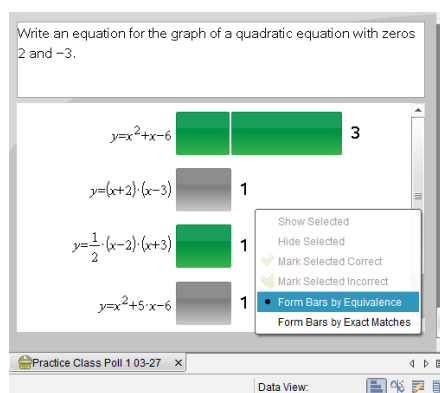
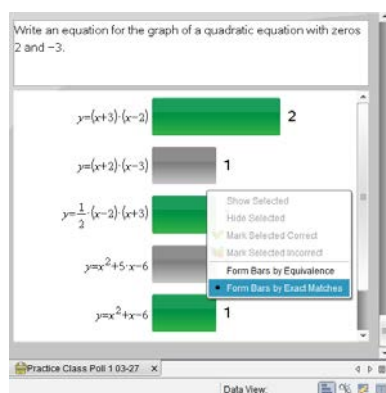


What is the relationship between the slopes of two perpendicular lines?

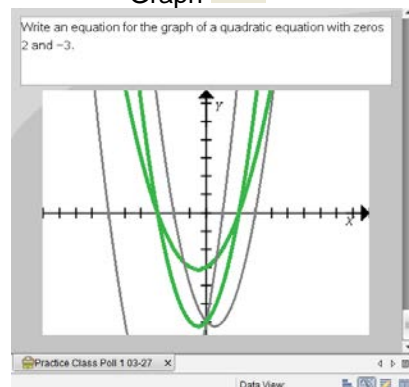
Response	Frequency
negative reciprocals	1
negative reciprocal	2
negative	1
same	1

Data Views for Equation Questions

Bar Chart



Graph



Show Work



Write an equation for the graph of a quadratic equation with zeros 2 and -3.

SHELDON	BERNADETTE
Starting Expression	Starting Expression
$(x-2)(x+3)$	$(x-2)(x+3)$
$x^2 + 3x - 2x - 6$	$x^2 + 2x + 3x - 6$
$x^2 + x - 6$	$x^2 + 5x - 6$
Final Answer	Final Answer
$y = x^2 + x - 6$	$y = x^2 + 5x - 6$

Frequency Table



Write an equation for the graph of a quadratic equation with zeros 2 and -3.

Response	Frequency
$y = x^2 + 5x - 6$	1
$y = (x+3)(x-2)$	2
$y = (x+2)(x-3)$	1
$y = x^2 + x - 6$	1
$y = \frac{1}{2}(x-2)(x+3)$	1

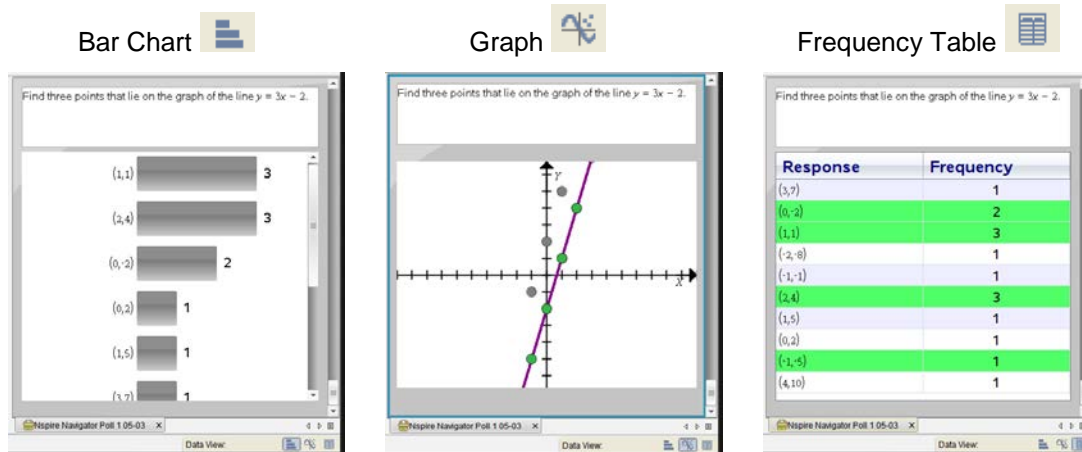


Tip Sheet: Quick Poll


TI PROFESSIONAL DEVELOPMENT

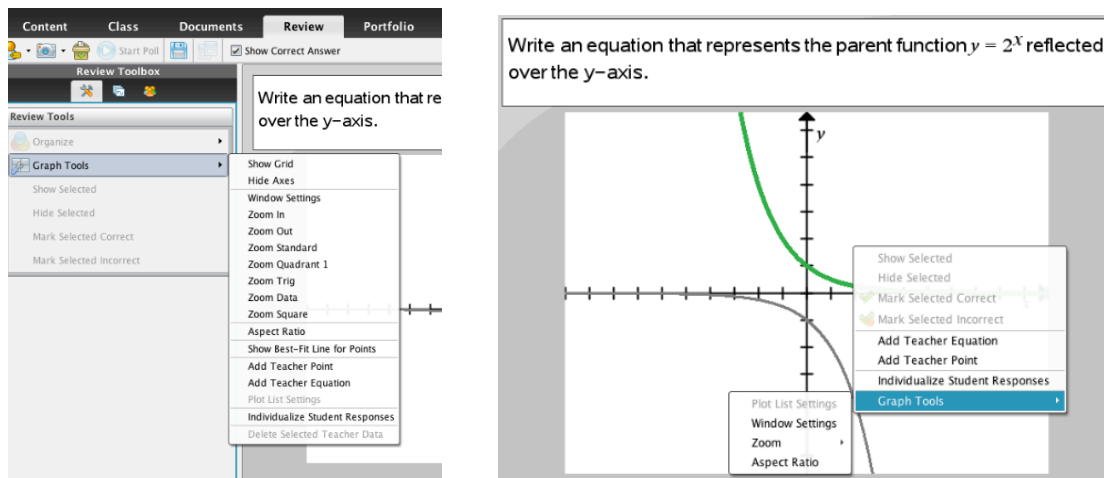
- The Show Work Data View is available when **Allow students to show their work** is selected before sending the Quick Poll.

Data Views for Coordinate Points & List(s) Questions



Graph Data View Options

The Graph Data View can be modified using the options in the Review Tools pane  of the Review Toolbox (the left column). Options include, but are not limited to, changing the window settings, adding a teacher point/equation, and individualizing student responses. Some of the options are available by right-clicking on the graph.






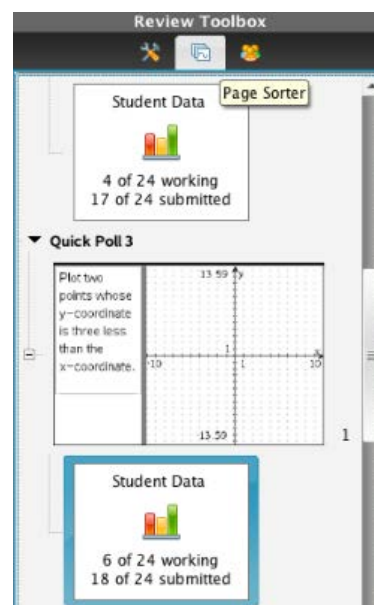
Tip Sheet: Quick Poll

TI PROFESSIONAL DEVELOPMENT

Viewing Previous Quick Poll Questions

The Page Sorter view  in the Review Toolbox allows the teacher to re-display previous Quick Poll questions for discussion.

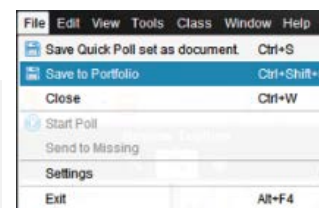
1. Click on the Page Sorter pane in the Review Toolbox.
2. Scroll to the Student Data icon below the Quick Poll question you want, and click to view the student responses.



Saving Poll Results

The results from all Quick Poll questions sent during a class session are compiled in a Review Document and can be saved for review at a later time. The results will be placed in the Portfolio for the class.

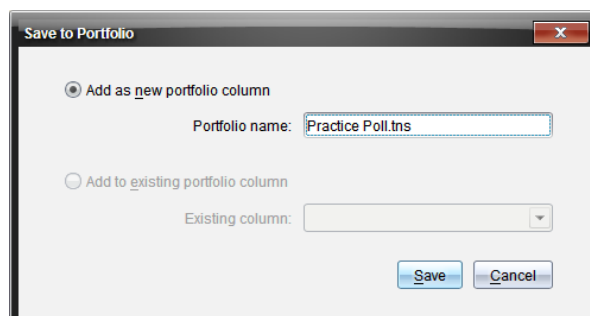
1. Click the **Save** icon.
Alternatively, select **File > Save to Portfolio**.
2. If desired, enter a name to identify the Quick Poll results other than the default name, or add the results to an existing portfolio column (see the Portfolio Workspace capture to the right; each column is a Quick Poll or Collected Assignment).



	Math A	Math B	Generic Poll 1.0...	Generic QP Set...	Generic QP Set...	Generic QP Set...
30%	47%	68%	25%	---	---	---
03-03	03-03	03-03	02-19	02-19	02-19	02-19
60%	29%	40%	25%	---	---	---
0%	14%	60%	---	---	---	---
	86%	100%	---	---	---	---
	43%	---	---	---	---	---
	79%	40%	---	---	---	---
	64%	80%	---	---	---	---
		100%	---	---	---	---

Note: The first 15 Quick Poll questions of the class session will be stored in a single Review document, even if polls are sent after saving the Review document to the Portfolio. After the 15th question, a new Review document will start for the next 15 Quick Poll questions.

3. If the Review document is not saved before ending the class, the teacher will be prompted to save when the software is closed.





Tip Sheet: Sending Documents

TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

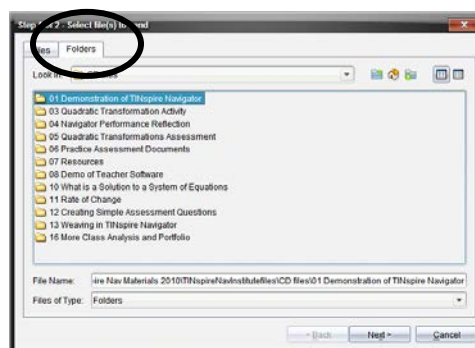
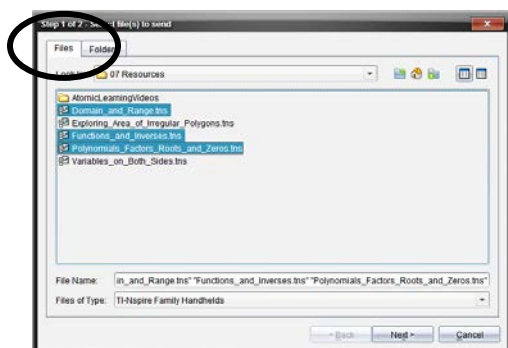
- Send documents to students using the TI-Nspire™ Navigator™ System.

TI-Nspire™ Navigator™ Features

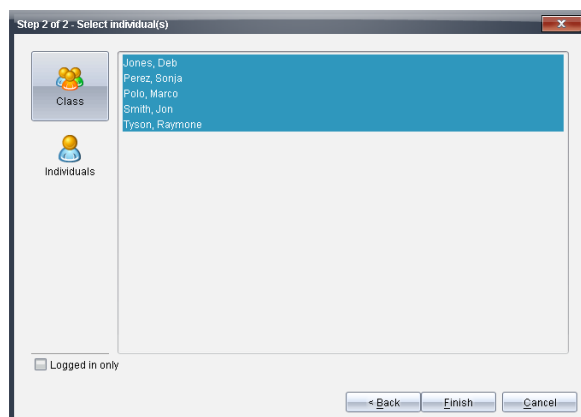
- Sending Documents
- Student Retrieval of Documents
- Verifying Transfer of Documents to Students

Sending Documents

- Open the TI-Nspire™ Navigator™ Teacher Software.
- Begin Class, and have the students log in to the TI-Nspire Navigator class.
- Click on the Send to Class icon.
- Locate and select the documents you want to send to the class.
 - Use the **Ctrl** key on your keyboard to select nonconsecutive documents from a list.
 - If you would like to send an entire folder, click on the Folders tab, and select the folder to be sent to the students.



- Click **Next**.
- Select Class Send or Individual Student(s) Send.
 - If you would like to send to a subset of students only, highlight all of the desired students by holding the **Ctrl** key and clicking their names with your mouse.





Tip Sheet: Sending Documents

TI PROFESSIONAL DEVELOPMENT

7. The selected folder or document(s) will be sent to the student devices.
 - The default folder to which the document will be sent is **My Documents > TI-Nspire > Class Name** {the name of the class you created in TI-Navigator}.
8. Click **Finish**.
 - You will see the sent document(s) listed in the Class Record. This line will also show how many students have received the documents.

Class Record		
Action	File Name	Status
	Polynomials_Factors_Root...	4 of 6 ▶
	Functions_and_Inverses.tns	4 of 6 ▶
	Domain_and_Range.tns	4 of 6 ▶

Student Retrieval of Sent Documents

The students will receive the documents automatically upon log in.

- All students who are already logged in to the TI-Nspire Navigator classroom when you send the documents will automatically receive the documents.
- Students who have not yet logged in to the TI-Nspire Navigator class will receive the documents as soon as they log in to the class.

Verifying Transfer of Documents to Students

1. Select the document to be verified in the Class Record.
2. A color code system the Student View of the class indicates whether a student has successfully received the document(s).
 - If the document(s) was successfully received by the student, then the box will be green.
 - If the document(s) was not received by the student, then the box will be red.

Class Record		
Action	File Name	Status
	Polynomials_Factors_Root...	4 of 6 ▶
	Functions_and_Inverses.tns	4 of 6 ▶



Sending Documents Using the TI-Nspire™ Navigator™ NC System

Any type of document can be sent to students' computers using the TI-Nspire™ Navigator™ NC Teacher Software, even though students can only open TI-Nspire™ documents and PublishView™ documents in the TI-Nspire™ Teacher Software. All other documents can be opened in their native applications.

All documents sent using the TI-Nspire Navigator NC Teacher Software will be located in the TI-Nspire class folder on students' computers.



Tip Sheet: Collecting Documents

TI PROFESSIONAL DEVELOPMENT


TI-Nspire™ Navigator™ Objective

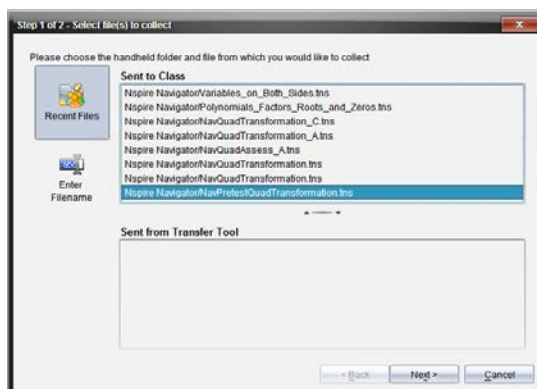
- Collect document from students using the TI-Nspire™ Navigator™ System.

TI-Nspire™ Navigator™ Features

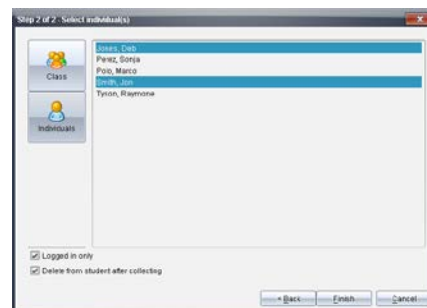
- Collecting Documents
- Student Transfer of Documents
- Verifying Transfer of Documents from Students

Collecting Documents from Students

- Click the **Collect from Class** icon.
 
- Select the file(s) to be collected, and click **Next**.
 - If you want to collect more than one file from the students, use the **Ctrl** key on your keyboard as you click the files in the list.
 - If you want to collect a file you recently sent to the class, click **Recent Files**, and the files that have been recently sent will be listed for your convenience.



- Select **Class**, or select individual student(s) by clicking **Individuals**, using the **Ctrl** key to select nonconsecutive students from the list.
 - By choosing to collect from the entire class with the “Logged in only” option selected, you will only collect the file(s) from students who are currently logged in to the class.
- If you want to delete the file from the student device, select the “Delete from student after collecting” option.
- Click **Finish**.





Tip Sheet: Collecting Documents

TI PROFESSIONAL DEVELOPMENT

- You will see the collected and deleted file(s) listed in the Class Record list on the TI-Nspire Navigator Home Screen.
- This line will also show how many of the students' files have been received.

Class Record		
Action	File Name	Status
	NavPretestQuadTransforma...	2 of 2 ▶
	NavPretestQuadTransforma...	2 of 2 ▶

Collecting Documents Alternative

- From the Class Record, right-click on the document to be collected.
- Select **Collect Selected from class**.

Class Record		
Action	File Name	Status
	Polynomials_Factors_Roots...	4 of 6 ▶
	Functions_and_Inverses.tns	4 of 6 ▶
	Domain_and_Range.tns	4 of 6 ▶
	NavPretestQuadTransforma...	2 of 2 ▶
	NavPretestQuadTransforma...	2 of 2 ▶
	Variables_on_Both_Sides.tr	4 of 6 ▶
	Polynomials_Factors_Roots...	4 of 6 ▶
	NavQuadTransformation_C...	4 of 6 ▶
	NavQuadTransformation_A...	4 of 6 ▶
	NavQuadAssess_A.tns	4 of 6 ▶
	NavQuadTransformation.tns	4 of 6 ▶
	NavPretestQuadTransforma...	2 of 2 ▶

Open in Review Workspace
Save selected to Portfolio
Collect Selected from Class
Collect Selected from class...
Send Missing
Collect Missing
Remove from Class Record
Delete
Record Item Properties...

- The documents will automatically be collected from the class.

Note: There is no option to delete documents at the time of collection using this method. The teacher could use **Delete from Class** at a later time during the class session.

Verifying Collection of Documents from Student Computers

From the Class Record, select the file to be verified. The Student View of the class will indicate whether a document has been collected successfully.



- If the document was collected successfully, then the box will be green.
- If the document has not been collected, then the box will be red. This might be because the student is not logged in to the TI-Nspire Navigator class.
- If the document was not in the student's class folder, then the box will be yellow.

Collecting Documents Using the TI-Nspire™ Navigator™ NC Teacher Software

Any type of document can be collected and saved to the Portfolio using the TI-Nspire Navigator NC Teacher Software. For a non-TI-Nspire document, students must save their work before the teacher collects the document. Once a non-TI-Nspire document has been collected, it can be viewed or edited in its native application by going to the Portfolio Workspace, right-clicking the document, and selecting "Open for Editing."



Tip Sheet: Collecting Documents

TI PROFESSIONAL DEVELOPMENT

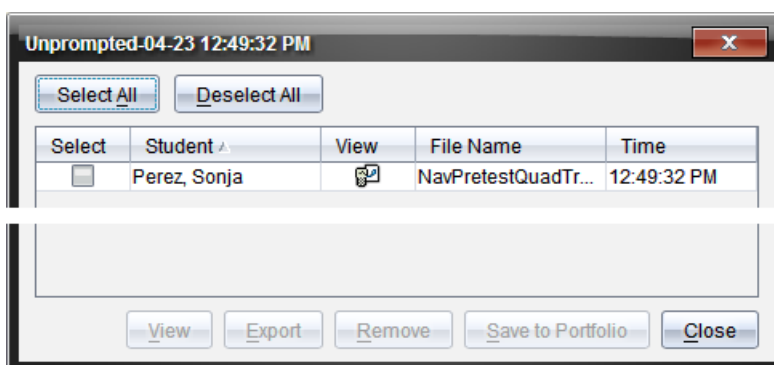
Unprompted Documents from Class

Students can send documents to the teacher without the teacher collecting from the class.

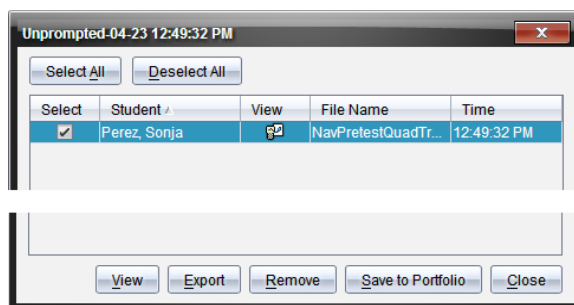
When this happens, an unprompted file folder with the sent date will appear in the class record.

Class Record		
Action	File Name	Status
	Unprompted-04-23	(1) ▶

- The number in the status column tells the teacher how many documents have been sent to the Unprompted folder.
- Double-clicking on the Unprompted folder will open a window.



- The teacher can select all the document of an individual student by clicking the checkbox in front of the document.
- Once you have selected the documents from the Unprompted folder, options at the bottom of the window become active.



View: This option opens the document(s) in the Teacher Software.

Export: This option allows the teacher to save the document to any location on the computer.

Remove: This option deletes the document from the Unprompted folder.

Save to Portfolio: This option allows the teacher to create a new column in the Student Portfolio or add the document(s) to a current column.

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Tip Sheet: Sending Documents via the Transfer Tool

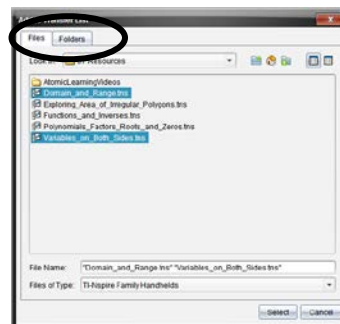
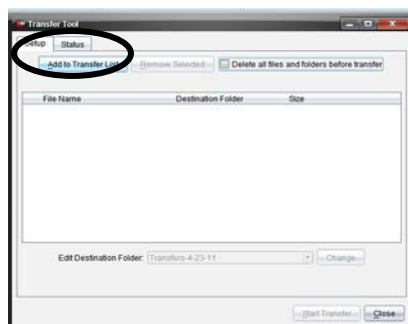
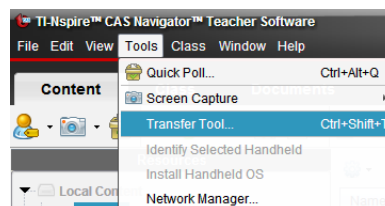
TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objectives

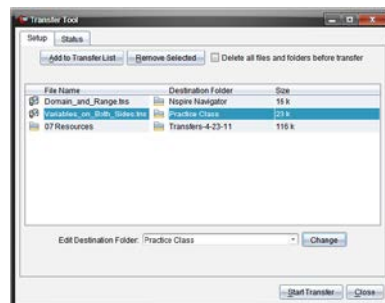
- Send documents to handhelds using the Transfer Tool.
- Delete all folders on connected handheld(s).

Send Documents to Connected Handhelds

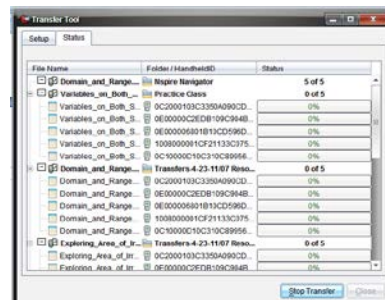
1. Open the TI-Nspire™ Navigator™ Teacher Software.
2. Select **Tools > Transfer Tool** (or use the keyboard shortcut **Ctrl+Shift+T**).
 - The Transfer tool is not available when a class is in session.
3. Click the **Add to Transfer List** button, and browse on your computer for the documents(s) to be transferred.
 - You can send an entire folder by clicking on the Folders tab and selecting the folder to be sent to the students.



4. You can change the folder to which the document(s) will be sent on the handheld.
 - The default folder is "Transfers-Date".
 - Edit the destination folder by clicking on the Destination Folder name and entering the name of the new Destination Folder.
 - Click **Change**.



5. Click **Start Transfer**.
 - The Transfer Tool Status window will indicate the status of the document(s) being transferred to individual handhelds.
6. When the file transfer is complete, click **Stop Transfer** and **Close**.



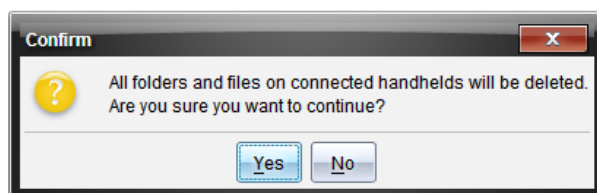
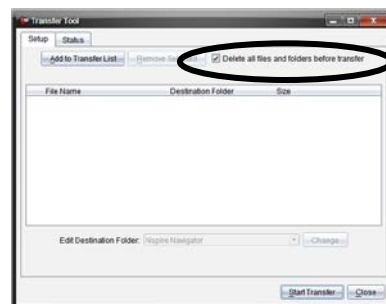


Tip Sheet: Sending Documents via the Transfer Tool

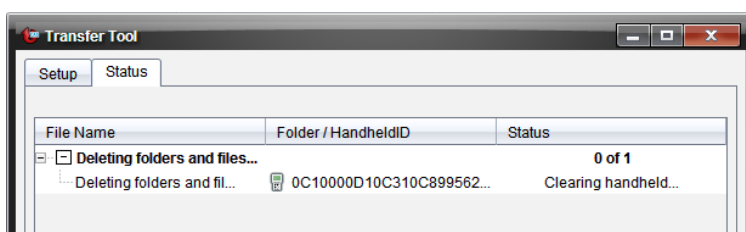
TI PROFESSIONAL DEVELOPMENT

Delete All Documents and Folders on Handheld

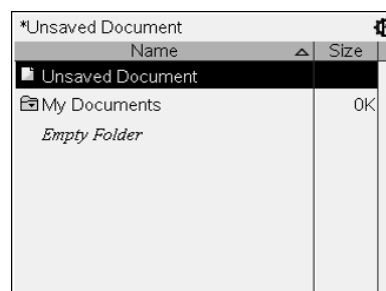
1. Open the TI-Nspire Navigator Teacher Software.
2. Select **Tools > Transfer Tool** (or use the keyboard shortcut **Ctrl+Shift+T**).
 - The Transfer tool is not available when a class is in session.
3. Check the box to select “Delete all files and folders before transfer.”
 - If desired, add files to send to the handheld using the steps above. The files will be transferred to the handheld after all files and folders have been deleted.
4. Click **Start Transfer**.
 - A confirmation message will appear. Click **Yes** to continue with the delete.



- The Transfer Tool Status window will indicate the status of the folders and files being deleted to individual handhelds.



5. When the file transfer is complete, click **Stop Transfer** and **Close**.
6. The connected handhelds will contain no documents or folders except the My Documents folder.





Tip Sheet: Sending the Operating System via the Transfer Tool

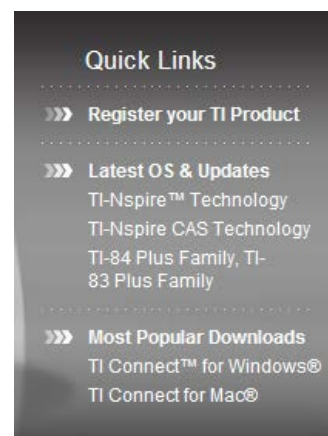
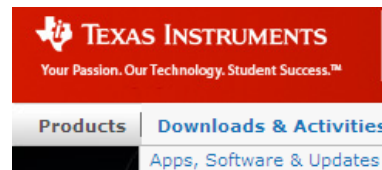
TI PROFESSIONAL DEVELOPMENT

TI-Nspire™ Navigator™ Objective

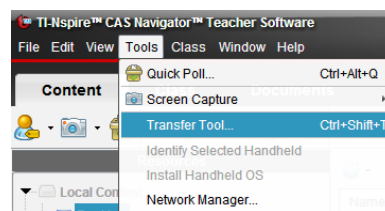
- Send an Operating System (OS) to handhelds using TI-Nspire™ Navigator™ Teacher Software.

1. Download the current OS to your computer.

- Visit www.education.ti.com to download the latest OS for TI-Nspire CX, TI-Nspire CAS CX, and/or TI-Nspire CAS.
- Select **Downloads & Activities > Apps, Software & Updates**.
- From the drop-down menus, select the appropriate technology and Handheld Operating System. Then click **Find**.
- Select the name of the appropriate handheld.
- Select **Save**, and browse to a convenient download location on your computer, such as your Desktop.
- Alternatively, use **Quick Links** to access and save the latest OS.



- Open the TI-Nspire Navigator Teacher Software.
- Select **Tools > Transfer Tool** (or use the keyboard shortcut **Ctrl+Shift+T**).
 - The Transfer tool is not available when a class is in session.

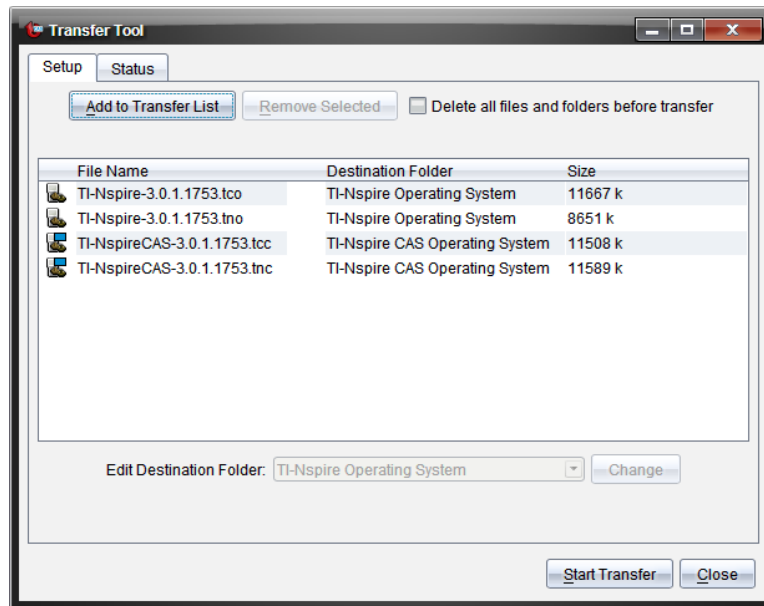




Tip Sheet: Sending the Operating System via the Transfer Tool

TI PROFESSIONAL DEVELOPMENT

4. Click **Add to Transfer List**, and browse on your computer for the OS file to be transferred.
 - You can select Operating Systems for each type of handheld.
 - If your class has more than one type of handheld, the Transfer Tool will update each handheld with the proper OS.



5. Click **Start Transfer**.
 - The Transfer Tool Status window will indicate the OS being transferred to individual handhelds.
6. When the file transfer is complete, click **Stop Transfer** and **Close**.

Tip Sheet: Modifying TI-Nspire™ Assessment Documents **TI PROFESSIONAL DEVELOPMENT**

Activity Overview

Create a custom TI-Nspire question document from pre-made State assessment documents found online.

Materials

- Internet access

Downloading State Assessment TI-Nspire Documents

Released State Assessment questions are available online for many States, already formatted as questions in TI-Nspire documents. Teachers might want to use some of these Question pages from a large State assessment document for formative assessment or for student practice.

1. Open the web site **education.ti.com**.
2. At the bottom of the page, click on **TI in your State**.
3. Click on the desired location on the map.

Note: This example uses a document with practice exam questions from Texas.

4. Under the Download section, click on one of the Practice Exam links.
 - TI-Nspire documents have the extension **.tns**.
5. Select a document to download, and click on that document.

Events | TI in your State |

Texas

Exam Prep



Texas Instruments is committed to delivering innovative tools dedicated to increasing student achievement and to providing students with the support they need to do well on required math and science exams.

Owners of the TI-Nspire™ handheld with TI-84 Plus Keypad, TI-83 and TI-84 Plus families of graphing calculators can download free prep questions for the AP® exam.

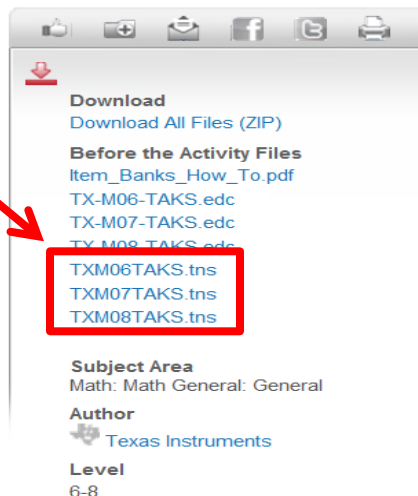
▶ National Test Prep (AP)

Download Free TAKS Math Practice Exams

- ▶ TAKS - Math Exam - Grades 6 - 8
- ▶ TAKS - Math Exam - Grade 9 and 10 Exit
- ▶ TAKS - Math Exam - Grade 11 Exit

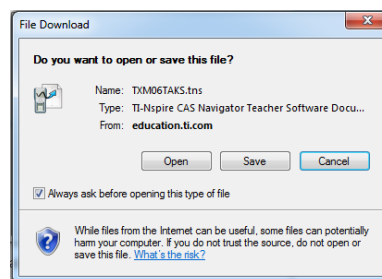
Download Free TAKS Science Practice Exams

- ▶ TAKS - Science Exam - Grade 8
- ▶ TAKS - Science Exam - Grade 10 & 11 Exit



Tip Sheet: Modifying TI-Nspire™ Assessment Documents TI PROFESSIONAL DEVELOPMENT



- When the File Download dialog box appears, click **Save** to save the document.
- Select the Desktop as the location to which the document should be saved.



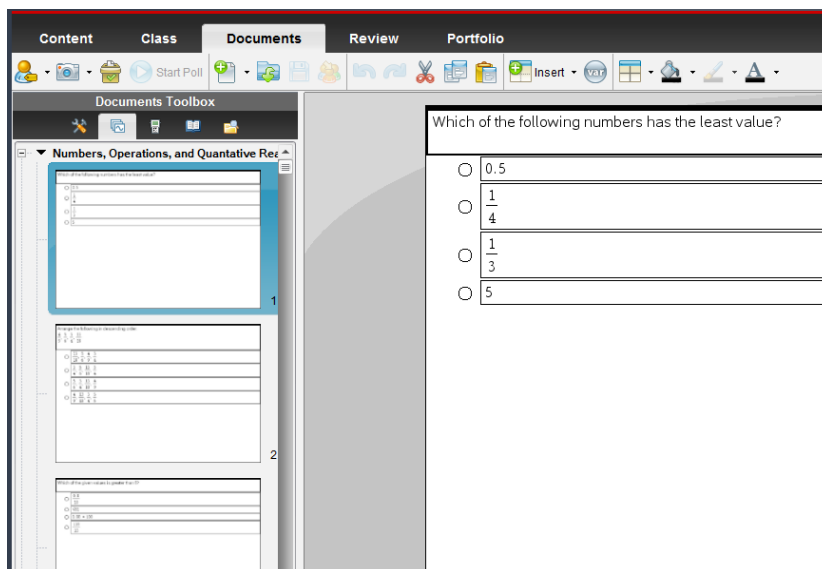
- The TI-Nspire document icon with the file name will be located on the desktop.



Opening State Assessment Document

- In the Documents Workspace, click on the **Open a document** icon .
 - Alternatively, select **File > Open Document**.
- In the Open dialog box, click the Home icon  to access the computer Desktop.
- Click on the TI-Nspire document you just downloaded, and then click **Open**.

Note: If the **Page Sorter** pane in the Documents Toolbox is not displayed, select it.



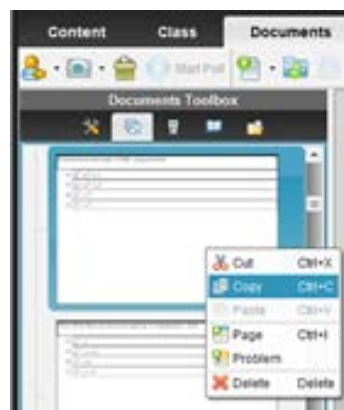
- Use the scroll bar in the Page Sorter view to scroll through and preview the questions in the document.
 - Alternatively, click on a page in the Page Sorter view and arrow up or down to preview questions.

Tip Sheet: Modifying TI-Nspire™ Assessment Documents TI PROFESSIONAL DEVELOPMENT

Copy/Paste Questions to a New Document

- To select a question to be included in your custom assessment document, right-click on the question page in the Page Sorter view, and select **Copy**.

- Alternatively, click on the question page in the Page Sorter view, and press **Ctrl+C** on your keyboard.

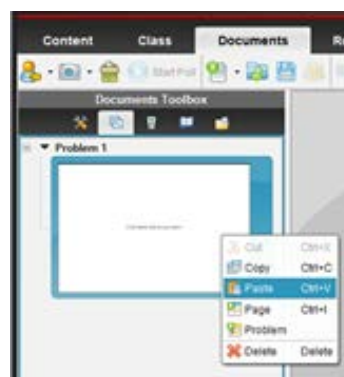


- Select **File > New TI-Nspire Document**.

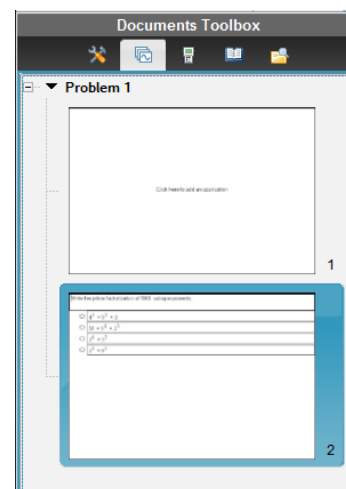
- A new document will open in the Page Sorter view.

- Right-click on the page in the Page Sorter view, and select **Paste**.

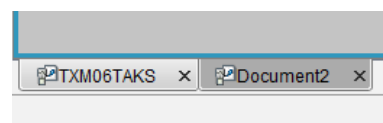
- Alternatively, click on the page in the Page Sorter view and press **Ctrl+V** on your keyboard.



- The pasted question page is inserted after the first, blank page of the new document. The first page can be used to provide directions for the students, or it can be deleted.



- Return to the state assessment document by clicking on the document name at the bottom of the screen.





Tip Sheet: Modifying TI-Nspire™ Assessment Documents

TI PROFESSIONAL DEVELOPMENT

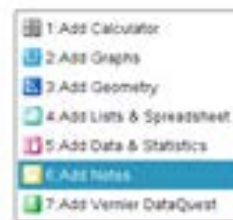
5. Select another question page in the Page Sorter view of the state assessment document. Right-click on that page, and select **Copy**.
6. Click on the tab for the new document - Document2, in this example. In the Page Sorter view of the new document, right-click on the last page, and select **Paste**.
7. Repeat steps 4 through 6 to copy as many questions to the new document as desired.

Note: The order of the questions can be changed by dragging and dropping the question pages in the Page Sorter view.

8. When finished, press **Ctrl+S** to save the new document. Enter a name, and choose a location for the new document.

Adding Instructions to the New Document

1. To make the first page of the new document a Notes application page to provide directions, click on that page in the Page Sorter view.
2. Click in the large version of the page in the right work area.
3. From the list of applications, select **Add Notes**.
4. Enter the desired text.



Note: To delete the first page of the new document, right-click on the page in the Page Sorter view. Select **Cut** or **Delete**.

The Press-to-Test Feature TI PROFESSIONAL DEVELOPMENT

Activity Overview

The Press-to-Test feature enables you to quickly prepare student handhelds for exams by temporarily disabling folders, documents, and select features and commands. This activity enables Press-to-Test. To disable Press-to-Test, you will need to follow Steps 8-9 using either an additional TI-Nspire handheld or a computer with the TI-Nspire Teacher Software.

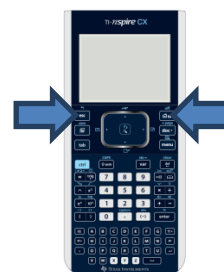
Materials

- TI-Nspire™ handheld-to-handheld or handheld-to-computer USB connection cable

Step 1:

To enable Press-to-Test on the TI-Nspire™ with Touchpad and TI-Nspire CX™, first ensure that the handheld is turned off. Press and hold **esc** and **on** until the Press-to-Test screen appears.

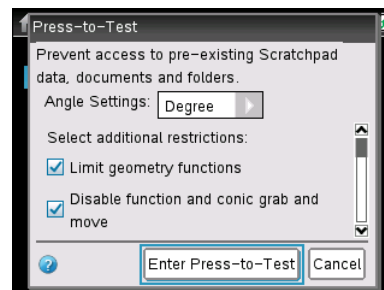
Note: To enable Press-to-Test on TI-Nspire™ with Clickpad, press and hold **esc**, **on**, and **on**.



Step 2:

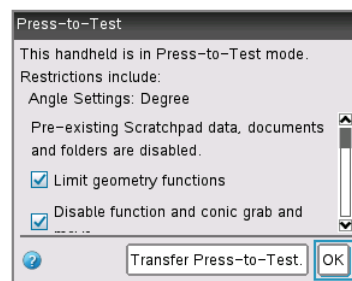
By default, Press-to-Test disables 3D graphing and pre-existing Scratchpad data, documents, and folders. The angle settings can be changed by pressing **right arrow**, selecting the appropriate setting, and pressing **right arrow** or **enter**.

By default, all of the commands and features listed are disabled. To enable a feature or command, uncheck its box. Keep all boxes checked. Enter Press-to-Test by clicking **Enter Press-to-Test**.



Step 3:

Once the handheld is in Press-to-Test mode, the handheld reboots. A dialog box confirms that the handheld is in Press-to-Test mode and the restrictions are listed. Click OK.



Step 4:

When in Press-to-Test mode, the LED at the top of the handheld begins blinking. Green indicates that all restrictions are selected (default), while yellow indicates that one or more restrictions are unselected. During the initial reboot, the LED alternates between red and, depending on the restrictions, either green or yellow.

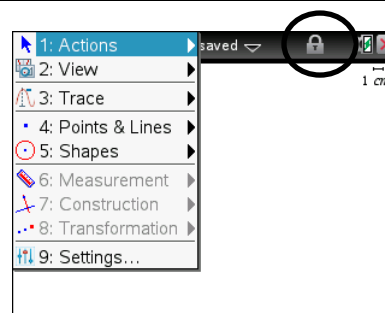


The Press-to-Test Feature TI PROFESSIONAL DEVELOPMENT

Step 5:

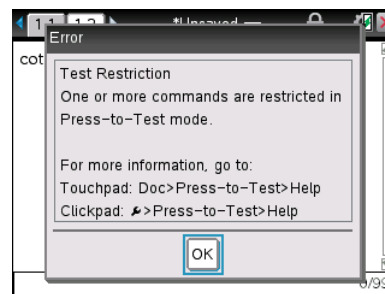
Create a new document, add a Geometry page, and press **menu**. Since geometry functions are limited, observe that the **Measurement**, **Construction**, and **Transformation** menus are not accessible.

Note: The lock icon at the top of the screen indicates that the handheld is in Press-to-Test mode.



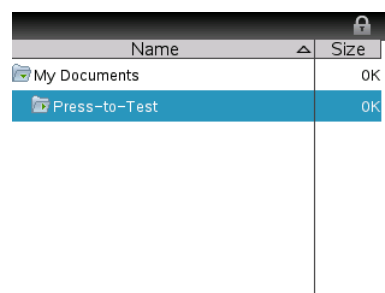
Step 6:

Add a Calculator application by selecting **doc** > **Insert** > **Calculator**. Type **cot($\pi/2$)** and press **enter**. Since trigonometric functions are limited, an error message appears. The dialog box tells students how to access additional information about the restrictions. Click on OK.



Step 7:

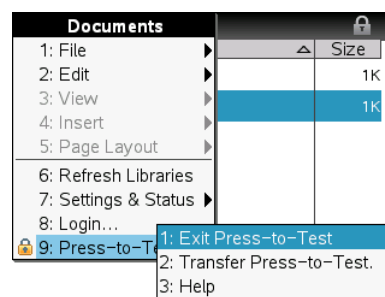
Select **on** > **My Documents**. While in Press-to-Test mode, a Press-to-Test folder appears in My Documents. All other folders and documents present on the handheld before Press-to-Test mode was entered are inaccessible.



Step 8:

To exit Press-to-Test mode, connect two handhelds using the handheld-to-handheld USB connection cable. Then select **doc** > **Press-to-Test** > **Exit Press-to-Test**. The Exit Press-to-Test option appears regardless of whether the other handheld is in Press-to-Test mode.

Press-to-Test can also be exited with the TI-Nspire™ Navigator™ Teacher Software. Once a class has been started, students can select **doc** > **Press-to-Test** > **Exit Press-to-Test**.

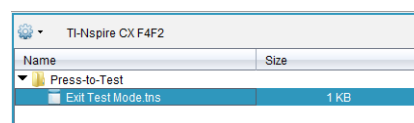


Step 9:

Press-to-Test can also be exited with TI-Nspire Teacher Software or TI-Nspire Navigator Teacher Software by creating a document named **Exit Test Mode.tns** and transferring it to connected handhelds.

Note: The name of the TI-Nspire document must be spelled exactly as it is above.

Go to the Tools menu and select **Transfer Tool**. Click **Add to Transfer List** and select **Exit Test Mode.tns**. In the Edit Destination Folder, select the Press-to-Test folder and click Change. Then, click **Start Transfer**.





TI-Nspire™ Navigator™ Skills Rating

TI PROFESSIONAL DEVELOPMENT

Rating Scale: 0 – Not covered yet
 1 – Uncertain – need more instruction
 2 – Moderate – need more practice
 3 – Average – comfortable
 4 – Good – competent

TI-Nspire™ Navigator™ Skill	Day 1	Day 2	Day 3
Class Workspace:			
• Create a Class			
• Add/Modify Students			
• Teacher Preferences			
Class Capture:			
• Auto-Refresh Class Capture			
• Zoom In/Out			
• Reordering Screen Captures			
• Saving Screen Captures			
• Screen Stacks			
Live Presenter			
Document Management:			
• Send to Class			
• Collect from Class			
• Delete from Class			
• View files collected from class			
• Save to Portfolio			



TI-Nspire™ Navigator™ Skills Rating

TI PROFESSIONAL DEVELOPMENT

Quick Poll:			
• Multiple Choice			
• Open Response			
• Equations			
• Coordinate Points & Lists			
• Image			
• Chemistry			
• Review Student Data			
Review Workspace:			
• Mark Correct Answer(s)			
• Change Data View for appropriate question types			
• Data Aggregation			
Portfolio Workspace:			
• Edit Scores			
• Send Missing Documents			
• Collect Missing Documents			
• Redistribute Documents			

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T3 Ticket Outta Here

What went well today?

What caused you difficulty?

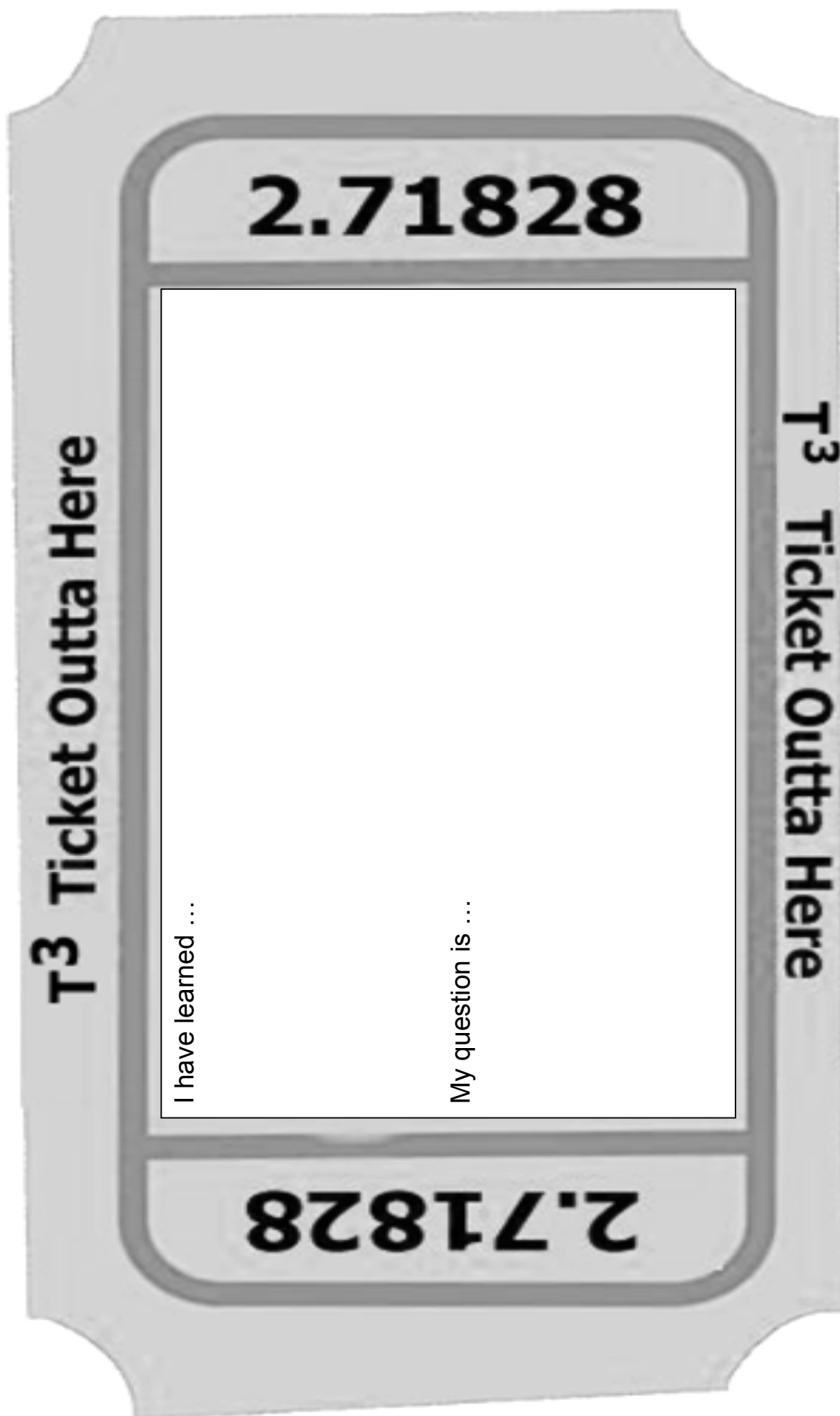
More of ?

Less of ?

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T3 Ticket Outta Here

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T3 Ticket Outta Here

I have learned ...

My question is ...

My next steps are ...

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T3 Ticket Outta Here

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