TEXAS INSTRUMENTS

TI-Nspire™ App for iPad®

FOR DUMMIES

Learn to:

- Navigate this powerful all-inclusive app
- Access hidden iPad gestures and tapping techniques
- Develop essential skills for the classroom

Jeff McCalla

TI-Nspire math and science learning technology was developed hand-in-hand with educators worldwide. The result is an inspired teaching and learning experience. Enhanced graphing capabilities combined with easy-to-use computer features distinguish TI-Nspire technology from traditional graphing calculators.

Visit education.ti.com/tinspire for product information.

TI-Nspire™ App for iPad®

FOR

DUMMIES®

by Jeff McCalla

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Using the TI-Nspire™ App for iPad® for the First Time

The TI-Nspire product line has expanded — yet again! The long-awaited TI-Nspire App for iPad is now a reality. Texas Instruments has outdone themselves, streamlining TI-Nspire Computer Software to create an app that feels more like play than work. If you want to put a smile on your face, check out this app. You won't be able to put it down!

In this small book, I offer all sorts of tips destined to assist in your exploration of the new TI-Nspire platform.

Icons Used in This Book

In typical *For Dummies* style, this book uses icons to emphasize a variety of points.

This icon points out suggestions or shortcuts that help enhance your documents. These helpful little nuggets often pertain to the current material or suggest ways to extend or enhance the use of TI-Nspire.

This icon tells you something that's truly worth remembering. I use the Remember icon to emphasize something mentioned earlier in the book or to highlight information that will eliminate potential mistakes down the road.

TI-Nspire App for iPad Overview

If you've ever used a TI-Nspire product, you may notice some differences with this one. The Touchpad (with an ABCDE keypad) that you may be familiar with is gone. TI-Nspire App for iPad has a true touchscreen and a QWERTY keyboard — but most of the applications will have a familiar look. However, the Calculator and the Lists & Spreadsheet applications take advantage of the large iPad screen by displaying far more data on the screen than other TI-Nspire platforms.

Toggle between a QWERTY keyboard (called the iPad keyboard) and an integrated math keyboard (called the TI-Nspire keyboard), both shown in Figure 1, by tapping the ⌐ABC⌐ or ⌐fx [ø]⌐ keys.
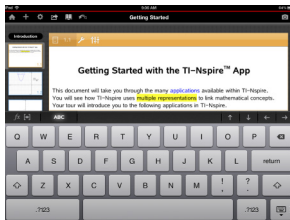
Figure 1: Two types of keyboards.

All of the math functionality that you could ever need is found in one all-inclusive iPad app, making it easy for students to focus on the mathematics rather than on what app to choose!

Navigating the applications

A TI-Nspire document (called a TNS document) is a file that contains problems and pages. The document model is a game-changer because complicated constructions can be prepared in advance so that students can use a document to focus on the mathematics. A thumbnail view of all the pages in the document appears on the left side of the app. You can use this handy feature to jump quickly from one page of your document to another by simply tapping the page you want to view.

> **TIP** Manage the order of the pages in the document by tapping and holding one of the thumbnails and then dragging it to the desired location.

Here's how to navigate your way through.

- ✔ Tap twice on the thumbnail of a page for the cut, copy, and delete options. Once you use cut or copy, a fourth option, paste, appears when you tap twice on the thumbnail.

- ✔ Add a page to a document by tapping the **+** icon near the top left of the screen. You can choose to add one of six different applications to a document: Calculator, Graphs, Geometry, Lists & Spreadsheet, Data & Statistics, and Notes.

Don't overlook the last option in this menu, Add Problem. Choose the Add Problem option to start fresh with a page that cannot access any of the previous functions or variables in your TNS document.

✔ Tap the ⌂ icon to bring up two choices. Choose Save My Changes to save the document in its current state. Choose Discard My Changes to abandon any changes you have made to the document.

✔ Tap the ⌂ icon to access all of the TNS documents stored on your iPad. To open a different document, simply tap the TNS document you want to open. Tapping the ✛ icon in this environment allows you to add a new document or folder.

✔ Tap the ✿ icon to choose from the Online Help, link to a Dropbox Account, or view the About information.

✔ Tap the `Edit` key to manage your TNS documents. In the edit mode, tap the ✖ (close) icon to delete a file, drag and drop one TNS document onto another to create a folder, and tap the name of the TNS document to rename it.

✔ Tap the ➦ icon to e-mail the TNS document.

✔ To access the catalog and symbols, just tap the 📖 icon.

✔ *Note:* If you accidentally tap something you wish you hadn't, don't worry. There is a ↶ icon! To undo multiple steps, just keep tapping Undo. If you go undo crazy, just tap and hold the ↶ icon to bring up the Redo option.

You can make extra copies of your TNS document! Simply tap ⌂ icon followed by the `Edit` key. In the edit mode, tap ▣ icon to create an additional copy. This is similar to the Save As feature on a computer.

Perfecting the art of tapping

You have five different types of tapping to practice in order to unlock all the capabilities of the TI-Nspire App for iPads.

- ✔ **Single-tap:** Use a single tap to select an object. To deselect an object, tap an area that has no objects.

- ✔ **Double-tap:** Make a double-tap by quickly tapping twice in the same location. On a Graphs page, a double-tap opens the Entry/Edit line.

- ✔ **Long-press:** Tap and hold. In certain environments, a long-press calls up some additional commands. Try this on a TI-Nspire keyboard by tapping the blue bar keys to access secondary key options. In addition, performing a long-press on many of the letter and symbol keys brings up accented versions of that letter or alternate symbols.

- ✔ **Tap, wait, tap:** Waiting before applying the second tap is an effective way of calling up additional options for the selected object.

- ✔ **Tap and drag:** Use this technique to transform a function on a Graphs page.

When using the iPad keyboard, tap the ⌨ key to dismiss the keyboard. Now, here's the cool part: If you long-press the ⌨ key, you have the option to split or undock the keyboard! Tap and drag the keyboard icon to reposition the keyboard. Splitting the keyboard allows you to hold the iPad with your fingers and type with your thumbs. Of course, the split keyboard also takes up far less screen space. Simply long-press the ⌨ key again to dock and merge the keyboard. See Figure 2.
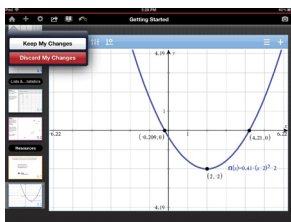
Figure 2: Keep or discard changes and long-press results.

At first, you may find it difficult to know when to use each of these tapping techniques. I encourage you to live dangerously though. If a single tap doesn't accomplish what you need, experiment with different kinds of tapping.

Accessing hidden gestures

Many of the same iPad gestures that you love are incorporated into the TI-Nspire App for iPad.
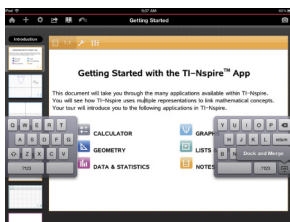
- ✔ **One-finger scroll:** Use one finger to scroll up/down/left/right in a Lists & Spreadsheet page.

- ✔ **One-finger flick:** If you have more than six pages in your TNS document, place a finger on one of the thumbnails and give it a flick to quickly scroll through the thumbnails. Tap the status bar (where the time & battery life are displayed) to immediately scroll back to the first thumbnail.

- ✔ **Two-finger pinch in (and pinch out):** On a Graphs page, use a two-finger pinch in to zoom out and a two-finger pinch out to zoom in. Performing a two-finger pinch out in the middle of the iPad keyboard splits the keyboard so that you can have fun thumb-typing!

- ✔ **Four-finger swipe up:** Use a four-finger swipe up to access the multi-tasking bar (containing recent iPad applications.) Of course, you could also double-tap the iPad Home button instead.

- ✔ **Five-finger pinch:** Placing all five fingers on the screen and pinching them into a single point closes the application and takes you to the Home screen.

Using tools and the Attributes Inspector

Each application page has a unique set of commands that you can access by tapping the 🔧 icon near the top left part of the page.

Tapping the 🔧 icon results in a drop-down menu of commands; choosing a command brings up a new drop-down menu. To access the previous menu, simply tap the button at the top left of the menu. Once you choose a tool, a new icon bearing the tool name appears in the top-right portion of the screen. Tap this icon to see helpful hints and instructions called Tool Tips. See Figure 3.
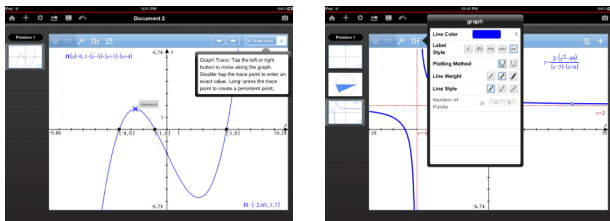
Figure 3: Tool Tips and the Attributes Inspector.

> **TIP** After you use a tool, the tool is deactivated! This feature is different than the TI-Nspire CX Handheld where the tool remains active. To reactivate the tool, simply tap the 🔧 icon and select the tool again.

To use the Attributes Inspector (cool name, huh?), you must first select an object. Try tapping the graph of a function to select it and then tap the 🎚 icon. You can change the color, thickness, and other attributes of the selected object.

Taking and inserting photos

Wow! This feature is fun and easy to use! Take advantage of the portability of the iPad and its built-in device camera by tapping the ⬛ icon in the top-right corner of the screen. Simply tap Take Photo⇨ 📷 icon⇨Use. See Figure 4. These steps are so intuitive that it seems silly to even write them down. Of course, you also have the option of Add Photo, which allows you to insert a photo that you've saved on your iPad.
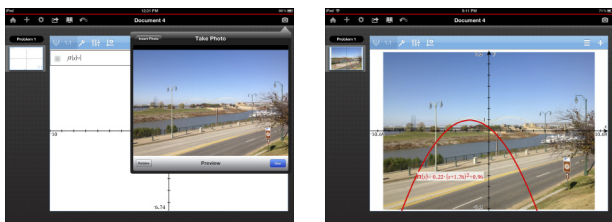
Figure 4: Take Photo and a photo inserted on a Graph.

If you don't like the photo you took, tap the Retake icon. Don't you wish you could do that with your school pictures?

I love using images on a Graphs page so that students can transform functions to match a graph to the image. Using images on a Graphs page makes the mathematics exploration both meaningful and engaging for students. Of course, images can also be used in other environments: Geometry, Data & Statistics, and Notes pages.

Downloading TNS documents

Whether you're a student or a teacher, you may want to download a pre-made TNS document from the Internet. Texas Instruments has two great websites if you want high-quality TNS documents with accompanying worksheets for teachers (mathnspired.com and sciencenspired.com). You can find tons of useful TNS documents that are all available as a free download!

Now, here's a practice exercise involving the steps for downloading a TNS document that contains an interactive periodic table (see Figure 5):

Figure 5: Opening TNS documents and the Periodic Table.

1. **Open your web browser:** Type **www.science nspired.com** into the address bar.

2. **Tap:** Chemistry⇨Atomic Structure and Periodic Table⇨Atomic Structure and Periodic Table⇨Periodicity of Properties Exploration⇨TI-Nspire Activity TNS.

3. **When prompted:** Tap Open in . . . and then tap TI-Nspire or TI-Nspire CAS.

Make your life easier by choosing to download individual TNS documents, since iPad functionality does not support the downloading of zip files.

Essential Skills
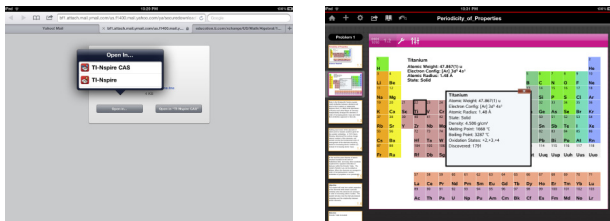
In order to take advantage of the built-in functionality of the TI-Nspire app for iPads, you need to know a few of the basics.

Working with Graphs

Learning how to utilize a Graphs page to accomplish common classroom tasks is essential. Tap the $+$ icon to add a Graphs page to your document. To graph the function, $y=x^2$, type the function in the Entry/Edit line and tap the ⌨ key.

To translate the function horizontally and vertically, use a one-finger tap and drag near the vertex of the parabola. In order to stretch/shrink/reflect the graph of the function, perform a one-finger tap & drag on a part of the parabola that is not near the vertex.

Open the Entry/Edit line by tapping the $+$ icon in the top-right corner or by performing a double-tap on the graph screen. Place your cursor next to the = sign in the Entry/Edit line and tap the ◁ key in the top-right corner of the keyboard to have the option of graphing inequalities. Close the Entry/Edit line by tapping the $+$ icon in the top-right corner or a single tap on the Graphs page. Add a table by tapping 🔧⇨Table⇨ Split Screen Table. Delete a table by tapping 🔧⇨ Table⇨Remove Table. Access the Graphs & Geometry Settings by tapping the ⌁ icon.

Use a two-finger pinch in & out to use the zoom feature on a Graphs page. Tap & drag in an open spot on the Graphs page to reposition the entire coordinate axes. Tap ✎ to use common features like Trace and Analyze Graph.

Using Calculator history

TI-Nspire offers a convenient way to access previously used commands on a Calculator page. To copy and paste a previous expression, tap the expression you want to copy and tap the ⌷ENTER⌷ key. What if you only want to copy part of an expression? No problem! Just tap & drag the blue corner circles to resize the selected expression.

Do you know how many lines you can have on a Calculator page? Unlike the TI-Nspire CX Handheld that's limited to 99 lines, there seems to be no limit to the number of lines (I went crazy and did more than 1,000 lines before I got bored). However, you can only copy and paste from the previous 99 lines. If you somehow manage to find that there's a limit to the number of lines you can type on a Calculator page, it's a good indication that you've completely lost your mind!

Converting to a decimal

TI-Nspire defaults to display the results of a calculation in fraction form on a Calculator page. Sometimes

you are better off seeing an answer expressed as a decimal. Here are a few ways to force an approximate result:

- **Long-press the ▭ key and drag your finger to choose the ▭ key.** This action approximates the value of the expression no matter what the Calculation Mode is in the General Settings.

- **Include a decimal point in your calculation.**

Be sure to visit mathnspired.com and sciencenspired.com for free easy-to-use lessons to help you teach concepts that students struggle with the most. Search by state, province, NSES, CCSS, or NCTM strands, textbook, or topic.

Notes

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Who knew math could be this much fun!

The TI-Nspire App for iPad uses intuitive touch interaction to create a powerful learning tool for a math or science classroom.

- *Insert images on a graph* — *use the device camera to insert a color photo image on a Graphs page and engage students as they use their fingers to transform a function*

- *Access hidden iPad gestures* — *use multi-touch gestures to scroll, pinch, swipe, and flick your way to a more enjoyable user experience*

- *Create dynamic math documents* — *explore mathematical relationships through multiple representations*

Texas Instruments Education Technology is a leader working with educators throughout the world developing classroom technology, training programs, and support materials to improve achievement for all students in mathematics and science.

Open the book and find:

- **How to use the integrated math keyboard to enter math in proper form**

- **What handy features can be used to navigate the iPad app**

- **A list of essential TI-Nspire App for iPad skills**

- **Steps to download TI-Nspire files (TNS documents)**

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