## Beginning with the TI-Nspire™ Math and Science Learning Handheld

### Materials
- TI-Nspire™ Math and Science Learning Handheld

### Overview
Explore the functionality of the TI-Nspire™ handheld.

<table>
<thead>
<tr>
<th>Key Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Click Key" /></td>
<td>Selects an object on the screen. See Figures 1 and 2.</td>
</tr>
<tr>
<td><img src="image2" alt="Nav Pad" /></td>
<td>Press the arrow keys to move the cursor/pointer.</td>
</tr>
<tr>
<td><img src="image3" alt="Escape Key" /></td>
<td>Removes menus or dialog boxes from the screen.</td>
</tr>
<tr>
<td><img src="image4" alt="Tab Key" /></td>
<td>Moves to the next entry field.</td>
</tr>
<tr>
<td><img src="image5" alt="Home Key" /></td>
<td>Displays the home menu.</td>
</tr>
<tr>
<td><img src="image6" alt="Menu Key" /></td>
<td>Displays application or context menu.</td>
</tr>
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</table>

### The Calculator Application

1. Turn on the TI-Nspire™ handheld.
   - If the screen shown in Figure 3 is not displayed, press ![Home](image7) 1 for Home 1:Calculator to add a new application page (Figure 3).
Note: To select a menu option, you can highlight the option and press \( \text{Menu} \) or \( \text{Menu} \). Alternately, you can press the number key for that option.

2. Perform the operations shown in Figures 4 to 11:

Note: Screen shots for the CAS handheld may be different.

3. For an approximate value, press \( \text{ctrl} \) \( \text{Menu} \) for Menu 1:Actions, 5:Clear History.

4. To clear the calculator screen, press \( \text{Menu} \) \( \text{Menu} \) \( 1 \) \( 5 \) for Menu 2: Number, 2: Factor (Figure 5).

6. To access the square root command, press \( \text{Menu} \) \( \text{Menu} \) \( \text{sqrt} \), and choose the square root template or type \( \text{sqrt} \).

7. To access the absolute value command, press \( \text{ctrl} \) \( \text{Menu} \) \( \text{abs} \), and choose the absolute value template or type \( \text{abs} \) (Figure 7).
8. Enter the base, and then select the template (Figure 8).

9. To access the degree symbol, press \text{ctrl} \text{and} \rightarrow \text{for the symbols menu (Figure 10).}

10. Move the cursor to the right, and select the \degree symbol.

11. Press \text{enter}.

12. Press \text{ctrl} \text{and} \rightarrow \text{to access the templates for matrices (Figure 11).}
The Graphs & Geometry Application

Basic Graphing

13. Press \( \text{Home} \) \( \text{2} \) for Home 2:Graphs & Geometry to add a new application page (Figure 12).
   - The Graphs & Geometry application is now page 1.2 of the document.

Note: The graphing window shown is the default window setting with a screen aspect ratio of one.

14. The function notation \( f_1(x) \) is shown in the entry line (Figure 13).

15. Type \( 2x^2-x+1 \), and press \( \text{enter} \) (Figure 14).

16. Rescale the Axes.
   - Press \( \text{esc} \).
   - Place the cursor on one of the axes so that the hand appears and the tic marks flash (Figure 15).
   - Press \( \text{ctrl} \) \( \text{alt} \) to grab a tick mark.
• Use the Nav Pad arrow keys to increase or decrease the maximum or minimum value and the scaling of the axes (Figure 16).

• This method will rescale both axes and will maintain the aspect ratio of the default window.

Alternate Graphing Method

17. Add a new Graphs & Geometry application page by pressing for Home 2:Graphs & Geometry.

18. From the Graphs & Geometry page, press for Menu 1:Actions, 5:Text (Figure 17).

19. Click anywhere on the screen to open a text box.

20. In the text box, type $2x^2-x+1$, and press (Figures 18 and 19).

21. Press to exit the text mode.
22. Use the NavPad cursor controls to move the cursor over the equation until the hand appears (Figure 20).
   - Press $\text{ctrl} + \text{A}$, or hold down $\text{A}$ until the hand closes.

23. Drag the equation to the x-axis.
   - When the graph appears, press $\text{enter}$ (Figures 21 and 22).

Document Model

While creating your calculations and graphs, you should have noticed the tabs at the top of your screen.

Moving Between Pages

24. Press $\text{ctrl} + \downarrow$ (on the Nav Pad) to move back one page (Figure 23).
25. To view all of the pages of the problem, press \[\text{ctrl}\text{ up (on the Nav Pad)}\] (Figure 24).

Note: This screen allows you to move from one page to another. To open the page that you wish to view, highlight the page by moving left or right with the Nav Pad. When the appropriate page is highlighted, press \[\text{enter}\].

To change the order of the pages, highlight the page by moving left or right with the NavPad, and hold the \[\text{home}\] until the hand closed. Then move the page to the desired place, and press \[\text{enter}\].

**Saving a Document**

26. Press \[\text{ctrl}\text{ up}\] to choose Tools.

27. Press \[14\] for 1:File, 4:Save As… (Figure 25).

28. When the Save As…dialog box appears, enter Parabola for the file name (Figure 26).

29. Press \[\text{tab}\] until OK is highlighted, and press \[\text{enter}\] to save the document.

30. Check to see if the document was saved.
31. Press 🏡 7 for Home 7:My Documents (Figure 27).

32. The folder will appear showing the document that you have just saved (Figure 28).

33. To reopen the document, highlight the file you wish to open, and press Enter.

Note: All work done on the TI-Nspire™ learning handheld is contained within a document. Each document contains one or more problems with a maximum of 30 problems. Each problem contains one or more pages with a maximum of 50 pages. Functions, stored variable, and data are retained throughout a problem.