

This is the first of three ‘Skill Builders’ in Unit 1. At the end of this unit, you will use the skills you have learned in these Skill Builders to create a more complex program. This is your first lesson in learning to code with TI Basic.

TI Basic is a programming language that can be used to program on the TI calculators. While the structure and syntax (grammar) of TI Basic is simpler than other modern languages, it provides a great starting point for learning the basics of coding. Let’s get started!

Objectives:

- Use the TI Basic Program Editor to create and run a simple program.
- Use the program menus to select and paste commands into a program.
- Run a program.

Teacher Tip: **B.A.S.I.C.** is one of the original programming languages that was designed for teaching and learning programming. It is an acronym of **Beginners' All-purpose Symbolic Instruction Code**. **TI Basic** is based upon this language.

Turn on your TI-84 Plus CE and press the `PRGM` key.

Select **NEW** using the arrow keys.

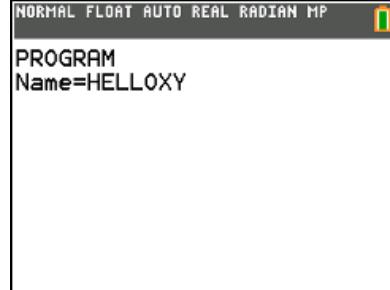
Select **Create New** by pressing `ENTER`.



Name your program.

Our program name will be **HELLOXY**. It can be any legal name*. Press `ENTER` after typing the name. You are now in the Program Editor. Each line begins with the colon character (:).

**A legal name must: be up to 8 characters long, start with a letter, include only uppercase letters and numbers, with no spaces; and be unique.*



Teacher Tip: If you use a name that has already been used then you will edit that program rather than create a new one.

This program will display a simple message on the home screen of your calculator.

10 Minutes of Code

TI-84 PLUS FAMILY

Selecting a programming command from the Program Menu.

The **PRGM** key now contains new menus that contain the commands that are used in TI Basic. If you want to use one of the commands, you *must* select it from this menu rather than type it on the screen.

1. Press the **PRGM** key
2. Choose the **I/O** menu using the arrow keys. This menu contains all of the commands affecting Input and Output.
3. Select **Disp**. The word will be pasted into your program at the current cursor position. The **Disp** command will display something on the HOME screen.

UNIT 1: SKILL BUILDER 1

TEACHER NOTES



```
NORMAL FLOAT AUTO REAL RADIAN MP
PROGRAM:HELLOXY
:Disp █
```

Teacher Tip: You cannot type in the programming commands. The commands are also not editable. All keywords in a program are selected from the menus. The text displayed is actually just a readable symbol (token) for the programming command.

Teacher Tip: Some of the other keys on the calculator behave differently while using the Program Editor: The **MATH** key allows you to select one of the math functions to use in a program. The **CATALOG** key contains a list of ALL calculator functions in alphabetical order. The **MODE** key allows you to select a mode setting so that the program will change the mode to that setting. There are other keys that exhibit similar behavior.

Teacher Tip: Some keys, such as **Y=** or **GRAPH**, will take you out of the Program Editor and into its own environment. Fear not. Just press **PRGM** > EDIT to get back to editing the program that you select from the list.

Type a greeting in double quotation marks.

This greeting is called a *string*, which is a group of characters that are “strung together”.

- Your string must start and end with quotation marks. Without the quotes, the program thinks you mean something completely different.
- Make your life easier: Press **2nd ALPHA** to turn on the alpha-lock while you type in the string.



```
NORMAL FLOAT AUTO REAL RADIAN MP
PROGRAM:HELLOXY
:Disp "U R SO COOL"█
```

Teacher Tip: The **CLEAR** key clears an entire line of code. It cannot be undone.

Teacher Tip: To insert a blank line place the cursor at the beginning or end of a line and press **[INSERT]** (**2nd DEL**) and then press **[ENTER]**.

Teacher Tip: To delete a line press **CLEAR** and then press **DEL**. There is no copy and paste.

Your program is complete! Let's run it now. There is no need to 'save' with TI Basic; the program is preserved as you type it in. That's why we named the program first.

10 Minutes of Code

TI-84 PLUS FAMILY

To run the program:

Press [quit] ([**2nd**] [**MODE**]) to return to the HOME screen.

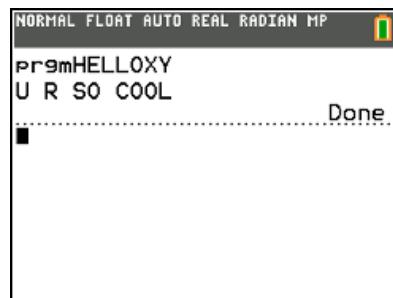
1. Press **PRGM**.
2. Under the **EXEC** ('execute') menu, select your program.
3. Press **ENTER** to paste the program name on the HOME screen.
4. Press **ENTER** again to begin the run.

UNIT 1: SKILL BUILDER 1

TEACHER NOTES



Your text message is displayed on the HOME screen.



Teacher Tip: Pressing **ENTER** after a program finishes running will re-run the program (because **ENTER** processes the last command entered on the HOME screen).

Teacher Tip: If a program generates an **ERROR** message then there is something wrong in the program. There are two options under the error: **1:Quit** and **2:Go To**. **Quit** takes you to the HOME screen and **Go To** takes you into the Program Editor to the place in the program where the error occurred. This may or may not be the actual place that causes the error.

Teacher Tip: A common error is **SYNTAX**. **Syntax** is a synonym for grammar; there's something wrong with the *structure* of the statement.

Teacher Tip: To delete a program use the Memory Management utility (**2nd** + > **Memory Mgmt/Delete...**). Select **PRGM...** and press the delete key on the program you wish to remove. You will see an 'Are you sure?' warning message.