Unit 1: Getting Started with TI-Innovator™ Hub | **Skill Builder 3: Input and SOUND**

In this third lesson for Unit 1, you will learn another method to get user input into a program and how to control the SOUND on the TI-Innovator™ Hub.

Objectives:

- Use the **Input** statement
- Control the frequency and timing of the speaker (SOUND)

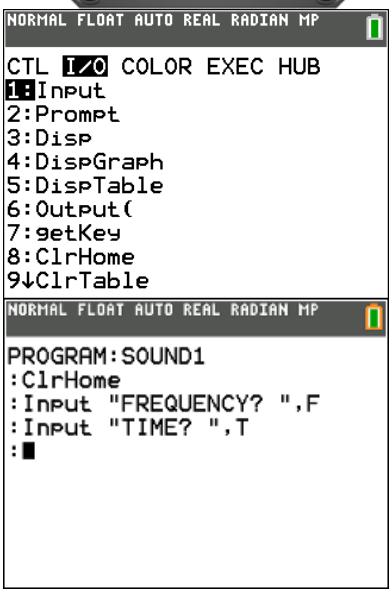
The TI-Innovator Hub has a built-in speaker called SOUND.

You control the sound coming out of Sound by sending a frequency value. Sound frequencies are measured in Hertz (Hz), or 'cycles per second'.

The **Input** statement, like **Prompt**, is found in the PRGM **I/O** menu. It is used to get input from the user, but it contains a feature that lets the programmer create a more meaningful message rather than the simple **Prompt** studied earlier.

Statement Syntax: **Input** <String> , <Variable>

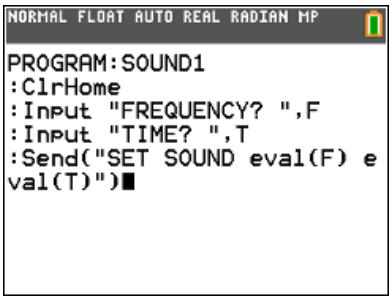
In this sound program, we'll use the **Input** statement.



Setting up the SOUND Program

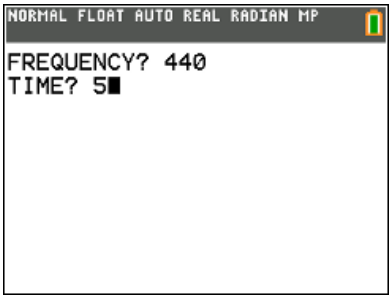
1. Start a new program, and name it SOUND1.
2. Add the **ClrHome** and **Input** statements from the PRGM **I/O** menu.
3. After the **Input** command, use [A-LOCK] (2nd ALPHA) to type the string of characters "FREQUENCY? "
4. Turn off the alpha lock to type the comma.
5. Then, add the variable that will represent the frequency, **F** (ALPHA COS).
6. Press ENTER.
7. Add another **Input** statement to let the user enter the time for which the sound should play.

As with the COLOR program in the previous skill builder, you need to use the **eval( )** function to evaluate the variables **F** and **T**.



Finishing up the SOUND Program

1. Press [PRGM], arrow over to the **HUB** menu, and select **Send("SET…**.
2. Select **SOUND**.
3. Press [PRGM], arrow over to the **HUB** menu, and select **eval(**.
4. Add the variable **F**, and close the parentheses.
5. Type a space ([ALPHA] [0]), and then add another **eval(** function for the variable **T**.
6. Add the variable **T,** and close the parentheses.
7. Add the closing quotation mark and the right parenthesis for the **Send(** command.



Running the Program

1. Press [ALPHA] [GRAPH] [1] **(Execute Program)**.
2. Enter the frequency 440 and the time 5.
   - This will play the tone 440 Hz for 5 seconds. This means that the speaker vibrates 440 times a second for 5 seconds.
   - In a noisy environment, you might have to hold the TI-Innovator Hub close to your ear to hear the tone.
3. Press [ENTER] to rerun the program with another frequency and time.
4. Experiment with other frequencies.