



#### Unit 1: Getting Started with TI-Innovator™ Hub

#### Skill Builder 3: Request and SOUND

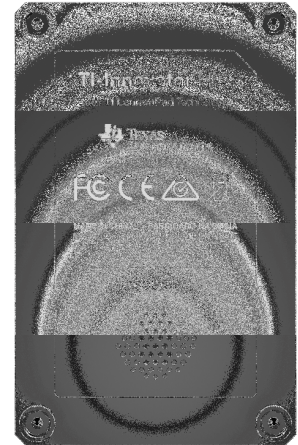
In this third lesson for Unit 1, you will learn another method to get user input into a program and how to control the SOUND on the TI-Innovator™ Hub.

#### Objectives:

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

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

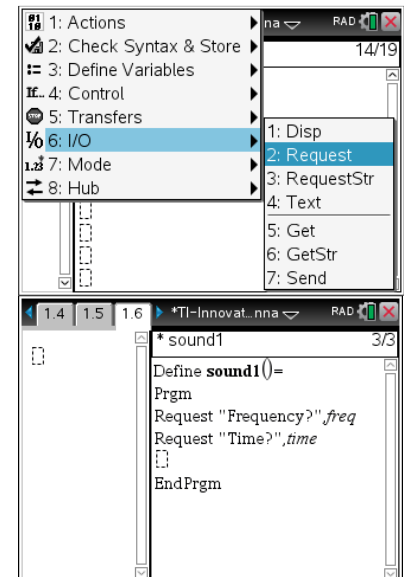
You control the sound coming out of SOUND by sending it a frequency value. Sound frequencies are measured in Hertz (Hz), or 'cycles per second'.



The **Request** statement is found in the I/O menu. It is used to get input from the user and contains a feature that lets the programmer create a meaningful message to the user.

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

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



#### Setting up the SOUND program

1. Start a new program, and call it SOUND1.
2. Add the **Request** statement from the I/O menu.
3. Add the prompt "*Frequency?* " and a comma after the keyword Request.
4. Then type the variable that will represent the frequency, **freq**.
5. Add another **Request** statement to let the user enter the *time* for which the sound should play.



## 10 Minutes of Code

### TI-NSPIRE CX WITH THE TI-INNOVATOR™ HUB

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

#### Finishing up the SOUND program

6. Select **Send "SET..."** and **SOUND** by pressing **menu > Hub > Send "SET..." > SOUND**.
7. Select **eval()** by pressing **menu > HUB > eval()**.
8. Add the variable **freq** inside the parentheses.
9. Type a space, and then add another **eval()** function for the variable **time**.
10. Press **ctrl-B** to store the program.

#### Run the program

When you run this program, a dialog box appears as a result of the **Request** statement.

1. Enter the frequency 440 and time 5.
  - This will play the tone 440Hz 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 hub close to your ear to hear the tone.
2. Press enter to rerun the program with another frequency and time.
3. Experiment with other frequencies.

## UNIT 1: SKILL BUILDER 3

### STUDENT ACTIVITY

```
*sound1 5/5
Define sound1()=
Prgm
Request "Frequency?",freq
Request "Time?",time
Send "SET SOUND eval(freq) TIME eval(time)"
EndPrgm
```

