Using Vernier Go Wireless™ Temp with TI-Nspire™ Apps for iPad®

SCIENCE NSPIRED

Required software and hardware:

1. An iPad equipped with Bluetooth Low Energy 4.0 (BLE); this includes iPad 3rd generation or later, iPad Air, or iPad Mini.
2. iOS 7.1 or later
3. TI-Nspire App for iPad or TI-Nspire CAS App for iPad 3.11.0 or later
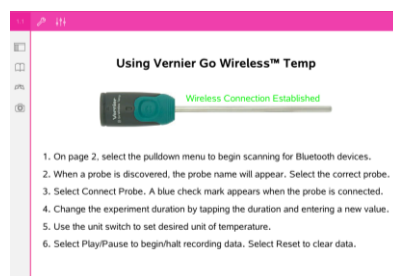4. Vernier Go Wireless Temp sensor

Preparing your devices for data collection:

1. Use the USB charging cable supplied with the Vernier Go Wireless Temp to completely charge the sensor. The blue LED on the sensor will light while charging. When charging is complete, the blue LED will turn off.
2. Disconnect the sensor from the USB cable. The LED will begin to blink red. The large button on the sensor is the on/off switch. If no LED status lights are on, press this button to turn sensor on. To turn the sensor off, press and hold the button until the light goes off.
3. Open the settings 🔘 icon on your iPad and ensure that Bluetooth is in the On position.

Establishing a wireless connection and setting parameters for data collection:

1. Transfer the file named Wireless_Temp_Collection.tns to the iPad and open with TI-Nspire App. You may use iTunes, email, or Dropbox to make this transfer or you may download the document from the ScienceNspired website directly to your iPad.
2. Carefully read the directions on the opening page and then proceed to page 1.2 of the file, which contains the data collection utility.
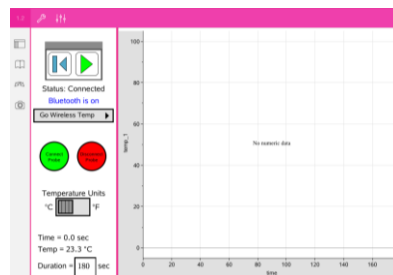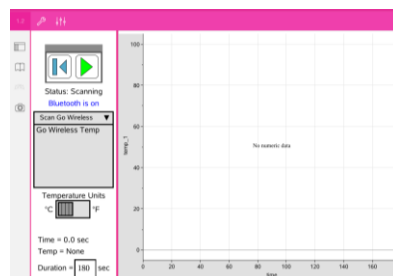
3. Use the drop down **Scan Go Wireless** menu on the left side of the page to select your Vernier Go Wireless sensor. If you have not renamed the sensor, the default name of "Go Wireless Temp" is already set.

4. Tap the green **Connect Sensor** button to establish a wireless connection between the iPad and Vernier Go Wireless Temp. When a Bluetooth connection is successful, the Bluetooth connection status message will change from "Connecting" to "Connected" and the sensor LED will switch from rapidly blinking red to rapidly blinking green.

5. To end the Bluetooth connection, tap the red **Disconnect Sensor** button and hold down the button on the sensor until the LED turns off to turn off the Vernier Go Wireless Temp sensor.
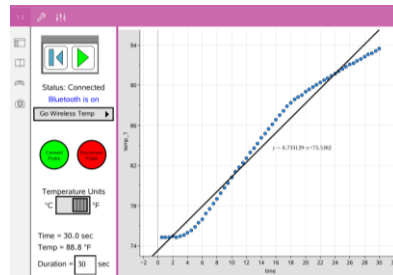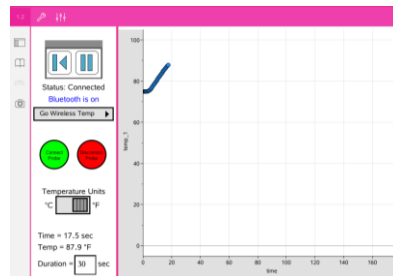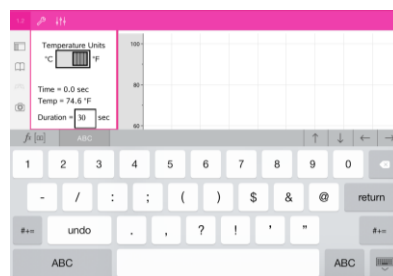
Collecting and analyzing data:

1. After establishing a connection with the Go Wireless Temp, set the parameters for your data collection on the left side of the page. Use the slider to select Celsius or Fahrenheit as your desired unit of temperature. Tap the Duration box to enter the desired collection duration in seconds. The default setting is 180 seconds.
   Note: The collection rate is set to 2 samples/second and cannot be changed unless changed in Lua script.

2. Tap **Play** to start data collection.

3. The graph on page 1.2 of this file is a Data & Statistics page. This will allow you to visualize a graph of your temperature data and analyze collected data. Once collection is complete, tap the graph side of the page and use the **Document Tools**

   menu 🔧 at the top of the page and select
   Window/Zoom>Zoom Data.

4. To analyze collected data, tap the graph side of the page and

   then tap the **Document Tools** menu 🔧 at the top of the page and select **Analyze>Regression** and choose your desired regression model.

5. The data that is collected by the utility on page 1.2 is displayed in a List & Spreadsheets application on page 1.3.

Additional Applications of Wireless_Temp_Collection.tns:

- Page 1.2 can be added to other .tns files to collect data wirelessly. Simply copy this page to another .tns file and create your own activity around it.
- Only one instance of the wireless data collection utility page can exist per .tns document. If you paste more than one copy of it into a .tns document, only the first data collection page that you use will work.