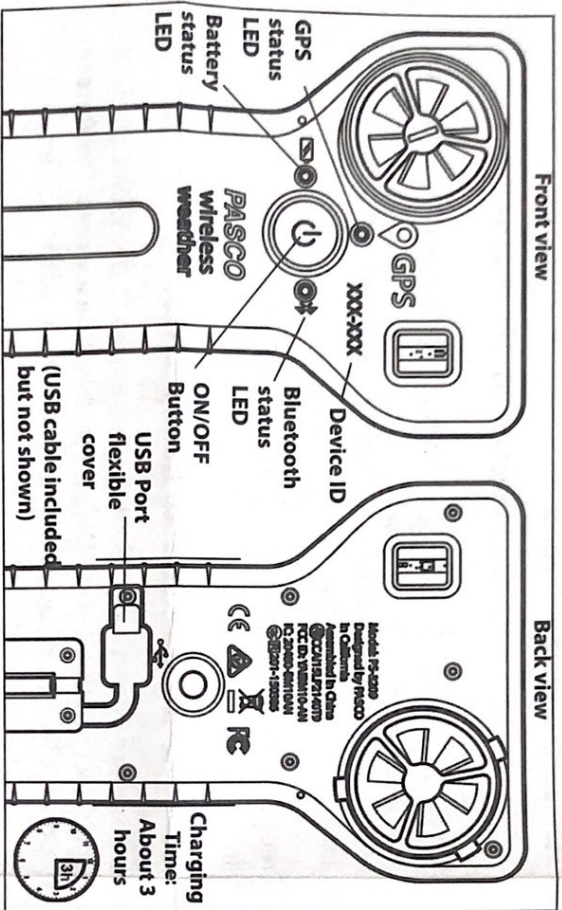


PASCO Wireless Weather Sensor with GPS PS-3209

Software: SPARKvue or PASCO Capstone
Power: Rechargeable Battery

Connection:  BluetoothSM or USB



INITIAL STEP - Connect and charge it: Pull the flexible USB port cover to the right. Use the included micro USB cable to connect the sensor to a USB port or a USB charger. If the cable is connected to a USB port or a USB charger, the Battery status LED shines yellow to show that the battery is charging. When the battery is charged, the Battery status LED shines green.

After the Charge, Turn It On: Press and momentarily hold the ON button on the front of the sensor to turn it on. (The Battery status LED blinks red once.) The GPS status LED and the Bluetooth status LED blink red to indicate that the sensor is ready to connect to a satellite and a computing device. If the cable is connected to a USB charger, the Battery status LED shines yellow (if the sensor is charging) and the GPS and Bluetooth status LEDs blink red. (The Bluetooth Status LED will not shine when the sensor is connected to a USB port.)

Make the Connection: Start the PASCO data collection software.

For USB connection to a USB port: Make sure the USB cable is connected. In **SPARKvue**: Check that the sensor appears on the Home Screen. In **PASCO Capstone**, select **Hardware Setup** and check that the sensor appears in the **Hardware Setup** window.

For Bluetooth connection: (NOTE: The following procedure also works if the sensor is connected to a USB charger.)

In **SPARKvue**: Select the Bluetooth icon. In the **Wireless Devices** list and then select the correct address that matches the XXX-XXX Device ID number found on the sensor. Select **Done**. In **PASCO Capstone**, select **Hardware Setup** in the **Tools** palette. Select the desired sensor type that matches the XXX-XXX Device ID number found on the sensor. *



Collect Data: In **SPARKvue**, select a measurement from the list. A graph of the measurement versus time opens. Select the **Start** button. In **PASCO Capstone**: Select a display, set up the measurement in the display, and select **Record**.

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* You will need to go into settings, then scroll down to SPARKvue - turn on bluetooth permissions

www.pasco.com - (800) 772-8700


Measurements: The Wireless Weather Sensor with GPS is a versatile instrument with multiple sensors, including a global positioning system (GPS). It measures wind speed, wind direction, barometric pressure, humidity, ambient temperature, light level, UV index, and compass heading. The GPS module reports latitude, longitude, altitude, speed, and satellite count. The software can calculate dew point, wind direction, wind chill, absolute humidity, and heat stress index

LED Information: The Bluetooth (BT) and GPS status LEDs and the Battery status LED operate as follows:

Bluetooth () connection

GPS	Status		Status	Battery	Status
Red blink	Searching	Red blink	Ready to pair	Red blink	Low power
Green blink	Found	Green blink	Connected	OFF	OK power

USB connection to USB charger*

GPS	Status		Status	Battery	Status
Red blink	Searching	Red blink	Ready to pair	Yellow ON	Charging
Green blink	Found	Green blink	Connected	Green ON	Charged

***NOTE: When the sensor is connected via cable to a USB port on a computing device, the Bluetooth status LED is off.**

More Information: Wireless Weather Sensor with GPS Reference Guide: For more information about the Sensor, go to the PASCO Web site at www.pasco.com/manuals. Enter PS-3209 under **Enter Product Number** and select **Submit**. On the Web page, select **Resources**. The **Reference Guide** is a complete, multi-page users manual to download in PDF format. (Contact Technical Support for a printed copy of the document.)

The Wireless Weather Sensor with GPS is designed by PASCO in California.

For Technical Support

Phone: +1 916 462 8384 or 800-772-8700 (U.S.) Email: support@pasco.com Web: pasco.com/support

FCC Statement: This digital device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

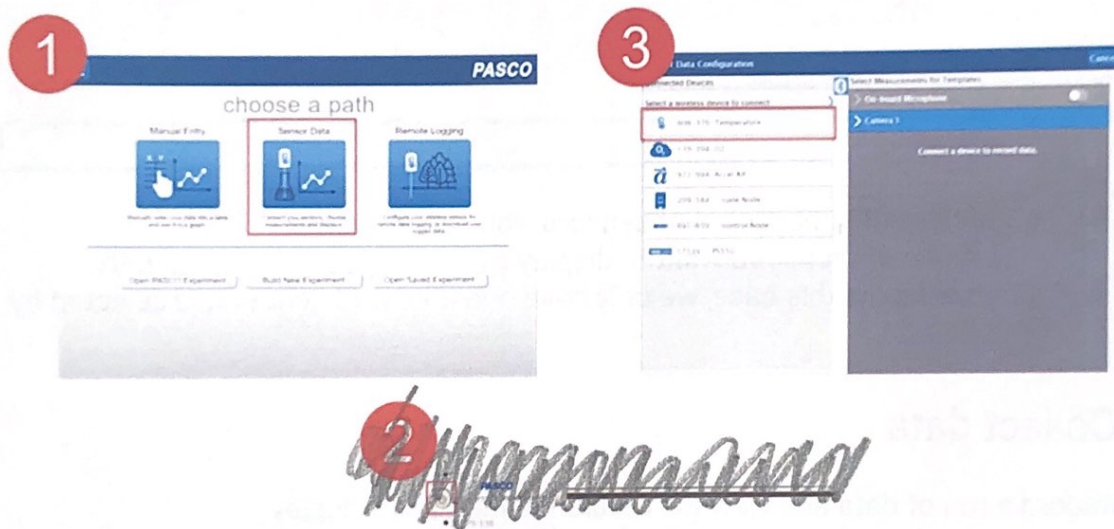
Battery: If the Battery status LED blinks red, connect the sensor to a USB port or USB charger with the included micro USB cable.

Collect, visualize, and analyze data

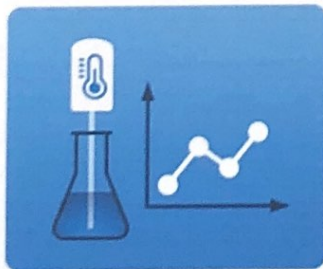
Learn how to set up a sensor, collect and analyze data, and save an experiment.

Connect the sensor

Connect the sensor to SPARKvue and select a template for displaying the data.



1. On the Welcome Screen, click **Sensor Data**.



2. Turn on the sensor by pressing the power button until the lights turn on.
3. On the **Sensor Data Configuration** screen, click the sensor that matches the Bluetooth ID printed on the sensor.

Tip

SPARKvue lists the sensors in order of proximity so your sensor is likely at the top.



606-376 Temperature

4. Under **Templates**, click **Graph**.






Note

For multi-measurement sensors, you can also select which measurement you want to display by selecting the box next to the sensor. In this case, we only have one measurement that is selected by default.

Collect data

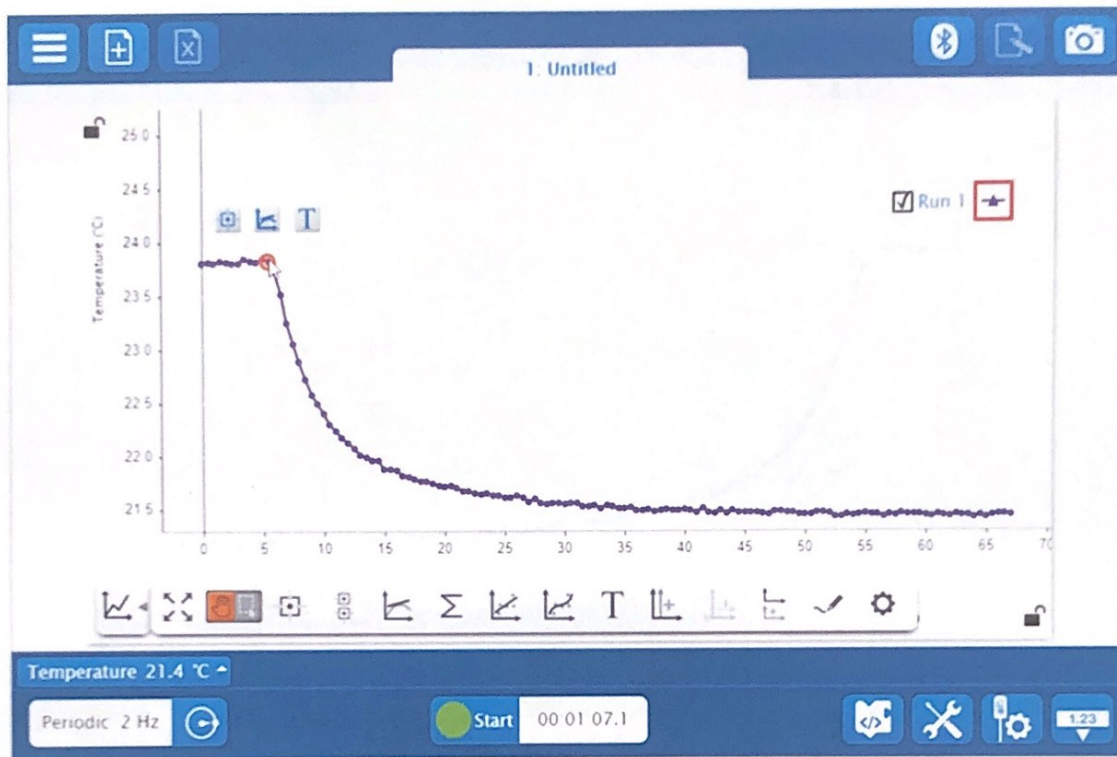
Record a run of data and view the results on the **Graph** display.



1. On the Experiment Screen, click **Start**  to begin recording data.
2. click **Stop**  to end recording data when you are done collecting data.
3. Adjust the viewing area of the graph by dragging the axes. You can also click the scale-to-fit tool  to automatically scale the graph.

Add a note

Add a note to a data point to add context to the graph.



1. Click a data point to add a note. A selection of tools appears.
2. Click the annotation tool **T** to add an annotation to that point.
3. Select the **Enter Note** box then use your keyboard to type a note.
4. Click **OK** when finished. The note appears on the graph.



Tip

Reposition the annotation by dragging the text box.

Find data coordinates

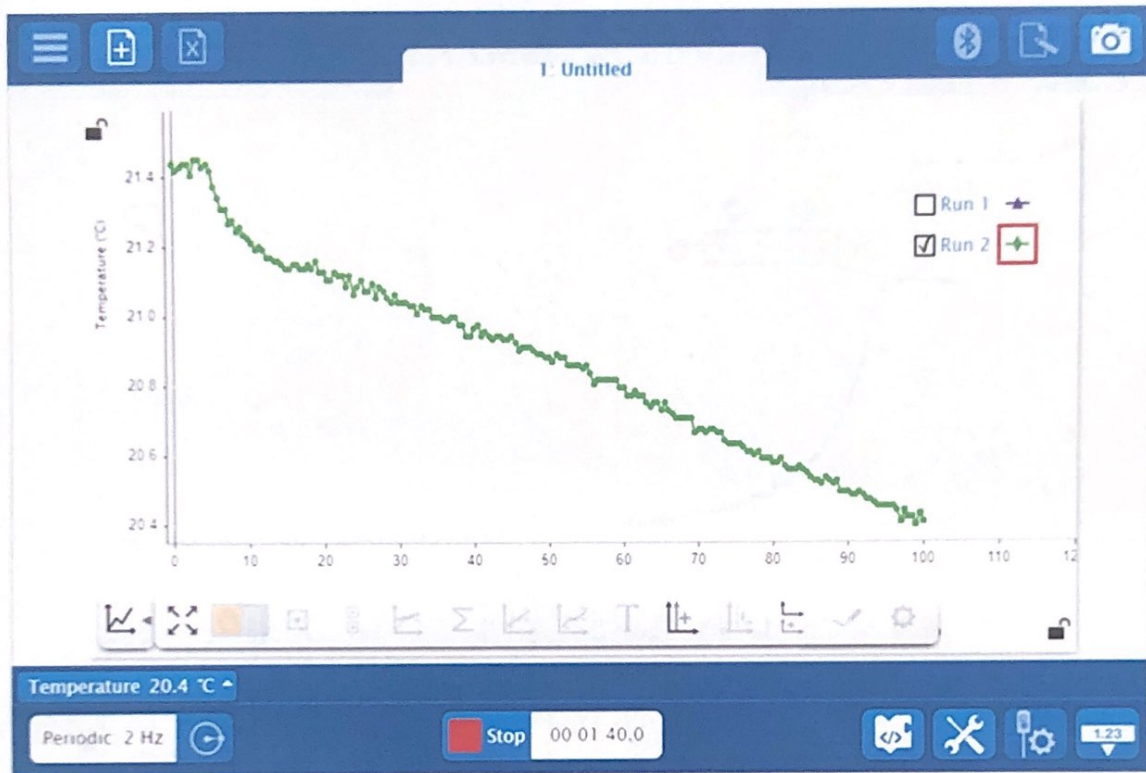
Determine the coordinates of a data point and the difference between two points on the graph.





1. Click a data point to analyze.
2. Click the coordinates tool . A box displaying the coordinates appears.
3. Click the coordinates box then click the delta tool . A second coordinates box appears.
4. Drag the second coordinates box to a new location to determine the difference between the two points. Boxes showing the difference in y and the difference x appears.

Collect a second run

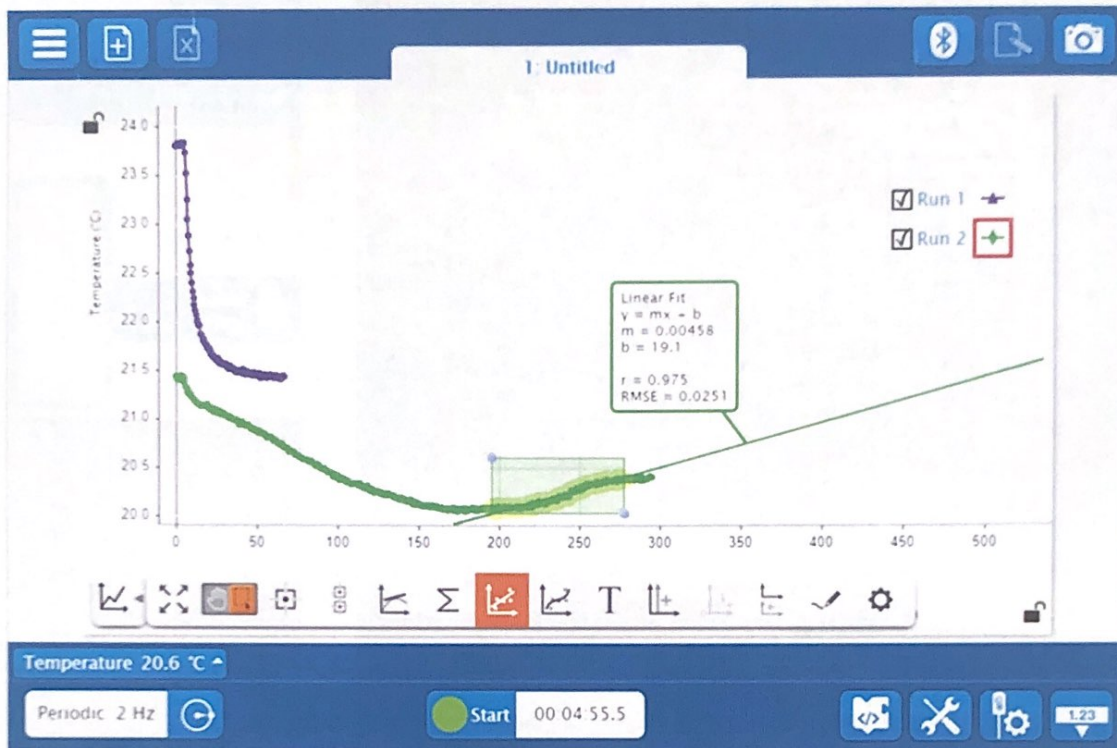
Record a second data run and compare it to the first run.





1. Click **Start**  to begin recording a second data run. The first data run is hidden.
2. Remove the Temperature Sensor probe from the water and set it on the table.
3. After several minutes, click **Stop**  to end recording data.
4. In the graph legend, select the **Run 1** box to make the first run visible.

Fit the data to a line

Add a linear fit to a selection of the data to find the slope and y-intercept.



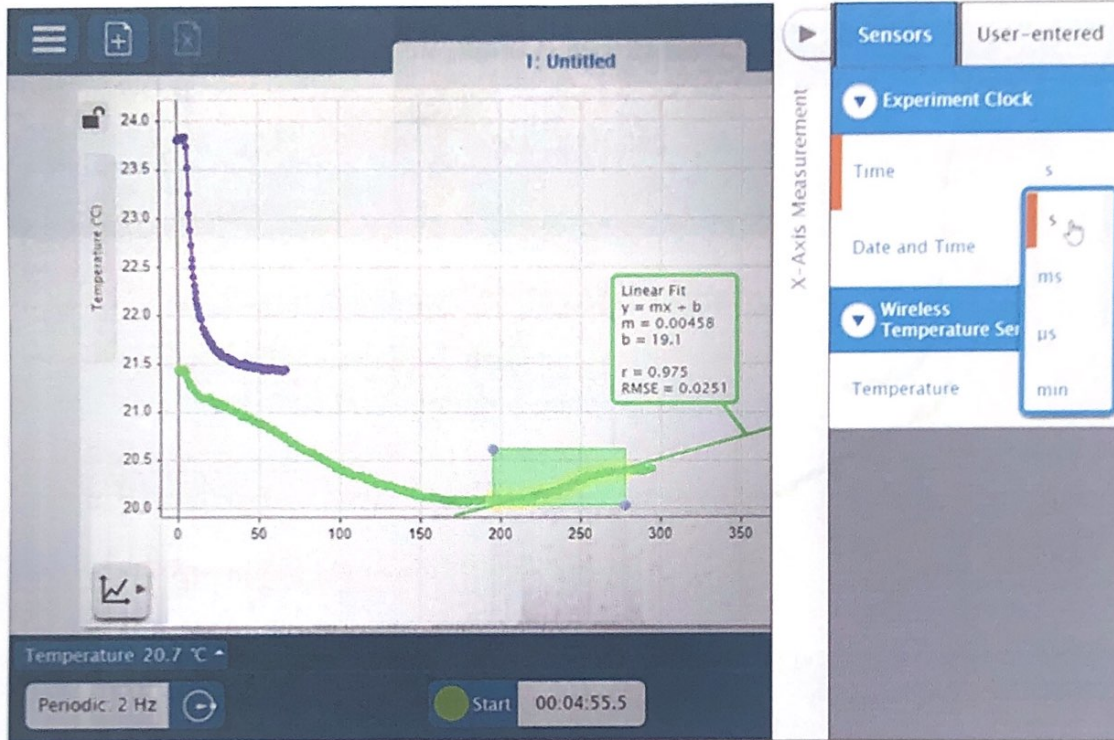
1. Toggle the cursor tool to selection mode .
2. Drag the cursor across the graph to select a portion of the graph to analyze.
3. Select the linear fit tool  to fit a line to the selection. A line appears with a box displaying the slope, y-intercept, and error values.


Tip

Drag the axes to see a projection of the linear fit.

Change the units of the Time axis


Change the units of the Time measurement from seconds to minutes to make the data easier to read.




1. Click the toolbar drawer  to collapse the toolbar.
2. Click **Time (s)** on the x-axis.
3. In the **X-Axis Measurement** panel, click **s** then select **min** from the list.

Save the data

Save your experiment file to share with others.

1. Click the **Main Menu**  then select **Save As**.
2. Create a name for your file then save it on your device.

Tip

On mobile devices, directly email your file by tapping the share tool  then tap **Share SPARKlab**.

To open your file at a later time, click **Open Saved Experiment** on the [Welcome Screen](#).

Next steps

Now that you've gone over the basics of collecting data in SPARKvue, here are some suggestions to learn more about SPARKvue:

- Explore the [graph display](#) tools.
- Explore the [Experiment Screen tools](#).
- Build a [new experiment page](#).
- Use the search feature at the top of this page to find a specific topic.