Quick Start Guide

Measure Analyze Learn

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What is included with your LabQuest 2

- LabQuest 2 unit
- Rechargeable battery
- Power adapter
- USB cable
- This Quick-Start Guide
- Stylus (in unit)
- Stylus tether
- Logger Lite CD

Get the complete user guide at www.vernier.com/labquest/guide

Warranty Information

LabQuest 2 – Vernier warrants this product to be free from defects in materials and workmanship for a period of five years from the date of shipment to the customer.

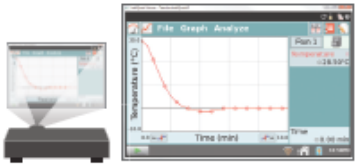
LabQuest 2 Battery – Vernier warrants this product to be free from defects in materials and workmanship for a period of one year from the date of shipment to the customer.

This warranty does not cover damage to the product caused by abuse or improper use.

LabQuest Charging Station
Charge four LabQuest units at a time.
www.vernier.com/lq-crg

LabQuest 2 Lab Armor
Molded rubber material protects LabQuest from spills and falls.
www.vernier.com/lq2-armor

LabQuest Viewer Software
Remotely monitor student progress or project the LabQuest screen.
www.vernier.com/lq-view

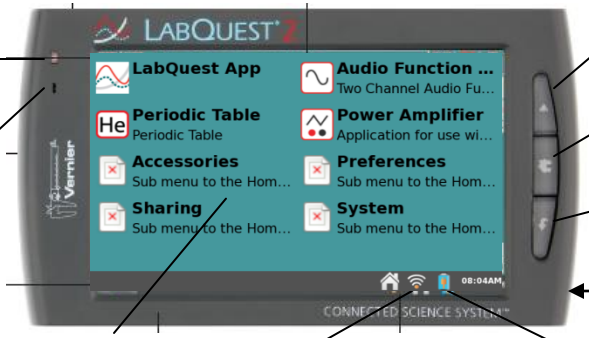


Before you use your

LabQuest 2

- Install the battery
- Connect the power adapter
- Charge for at least 8 hours
- Read the safety information and operating instructions found in this guide

Key Features of your LabQuest 2 Hardware



Internal Light Sensor

Internal Microphone

Collect
Control data collection

Home
Access applications

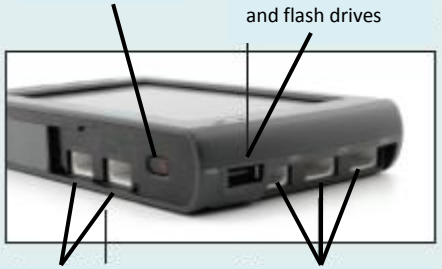
Escape
Exit menus/applications

Stylus storage

Resistive Touch Screen
For touch or stylus

Wi-Fi Status

Battery Level/Charge indicator

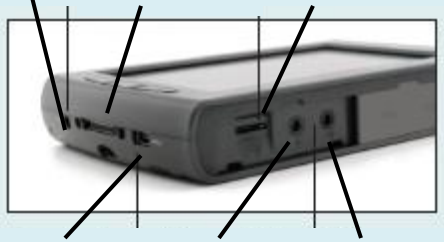


Power Button

USB 2.0 Port
for USB sensors and flash drives

Digital Sensor Ports
for Motion Detectors and other digital sensors

Analog Sensor Ports
for temperature, pH, CO_2, and other analog sensors



AC Power

Docking Port
for LabQuest charging station

Micro SD/MMC Card Slot

Computer Connectivity
transfer data or use as a computer interface

Audio In
For external microphone

Audio Out
For speakers, headphones, and Power Amplifier

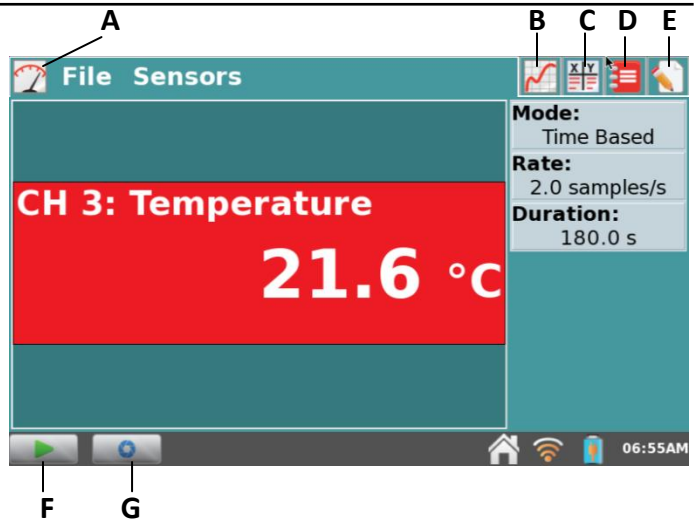
LabQuest App – Navigation

Tap the tabs to access different screens of the LabQuest App

A – Meter
B – Graph
C – Table
D – Lab Instructions
E – Notes

Tap the buttons to collect data

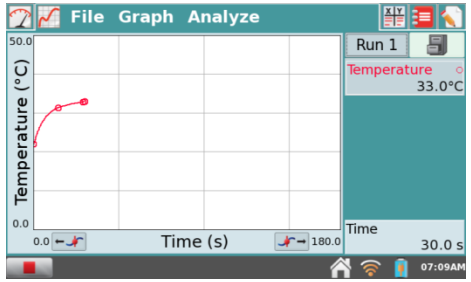
F – Start/Stop
G – Keep
(not always shown)



LabQuest App – Quick Data Collection

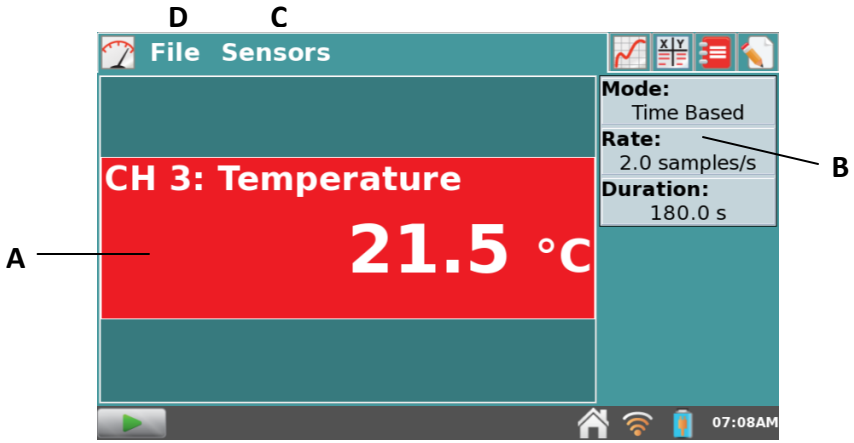
Three steps to collect data:

1	**Turn on LabQuest** LabQuest App launches automatically.
2	**Connect a sensor** The sensor will auto-ID. The default collection rate for the sensor is set up.
3	**Tap Collect**  You are now collecting data.



LabQuest App switches to the Graph screen when data collection begins. Tap  *to end collection early*

LabQuest App – Meter Screen



Use the meter screen to set up your experiment

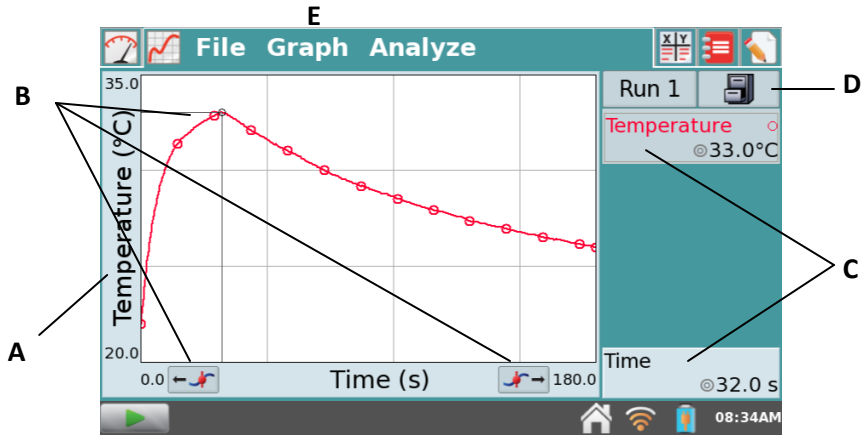
LabQuest App – Meter Screen

A. Digital Meter – The Meter screen displays a digital meter for each connected sensor. Tap on a meter to change units, calibrate, zero, or reverse the sensor.

B. Data-collection details – A summary of the data-collection setup is shown. Tap anywhere on the details box to modify the settings.

C. Sensors Menu – You can access all of the setup options using the Sensors menu. Use the Sensor Setup option to activate internal sensors or to set up sensors that do not auto-ID.

D. File Menu – This menu is available from every screen. Use this menu to save files for analysis at a later time, print, or open an existing file.



When data collection is complete, the graph autoscales to the data

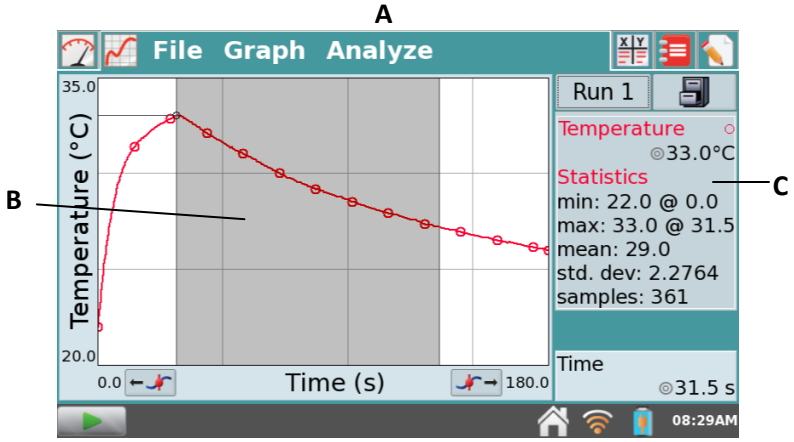
A. Axis Label – The Graph is set to display your sensor data. When you have more than one sensor or run, you can change what is plotted on the axis by tapping on the label and selecting the desired data column.

B. Examine Point – Tap any point to activate the examine cursor. Tap a different point or use the Examine buttons to move to a new point.

C. Current Reading – The coordinates of your examine point are displayed to the right of the graph. During collection, the live sensor reading is shown.

D. Store Run – To collect multiple trials of an experiment, store the run before collecting more data.

E. Graph Menu – Use the Graph menu for even more graph options.

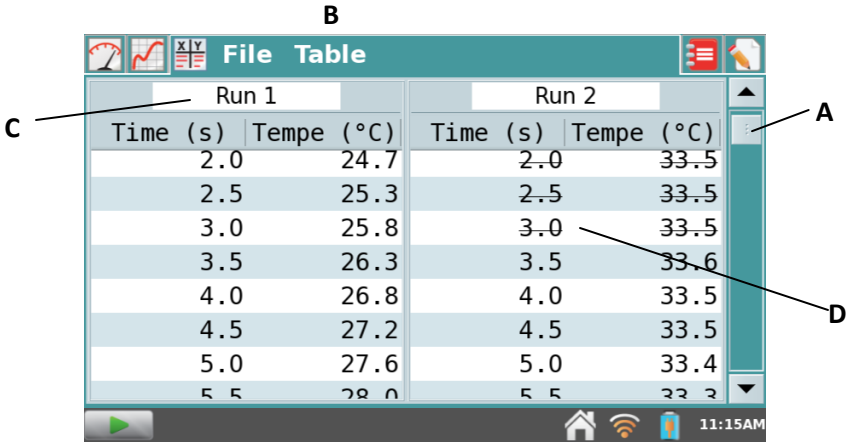


Statistical analysis of your data is done on the Graph Screen

A. Analyze Menu – Tap this menu to access the analysis tools. Your options include tangent lines, statistics, integrals, curve fits, models, and more. Select your analysis tool, then select the desired data column for analysis.

B. Select a region – You can analyze all the displayed data or just a portion of it. To analyze only a portion of the data, tap and drag across the desired region before selecting your analysis tool. If no region is selected, the analysis will apply to all the displayed data.

C. Analysis details – The results of your analysis is displayed next to the graph. To view a full screen display of the results, tap on this box. To remove an analysis, tap the Analyze menu and select the tool again.



You can also manually enter data into the data table

A. Scroll Bar – Use the scroll bar to view your data. Tap and drag the slider or tap the arrow keys to scroll the table.

B. Table Menu – Use the Table menu to manage your data. You can also create new manual or calculated columns to enhance your data analysis.

C. Run Name – Individual data sets can be renamed. Tap on the name and enter the desired name. A keyboard will automatically launch.

D. Struck Data – You can non-destructively remove data points from your graphs and statistical calculations using the Strike Through Data option. First, select a region on the graph or in the table, then choose Strike Through Data from your Table (or Graph) menu.

USB Printers

Connect a compatible HP printer (www.vernier.com/labqprinters) to LabQuest using the standard USB port (USB cable not included with LabQuest).

Network/Wi-Fi Printers

Tap the Wi-Fi icon and connect to the network to which your desired printer is connected. Tap System on the Home screen, then tap Printers. Tap Add a Printer and select your desired printer.

To print from a LabQuest, choose Print from the File menu. You can choose to print a graph, table, lab instructions, notes, or the LabQuest screen as it is currently displayed.

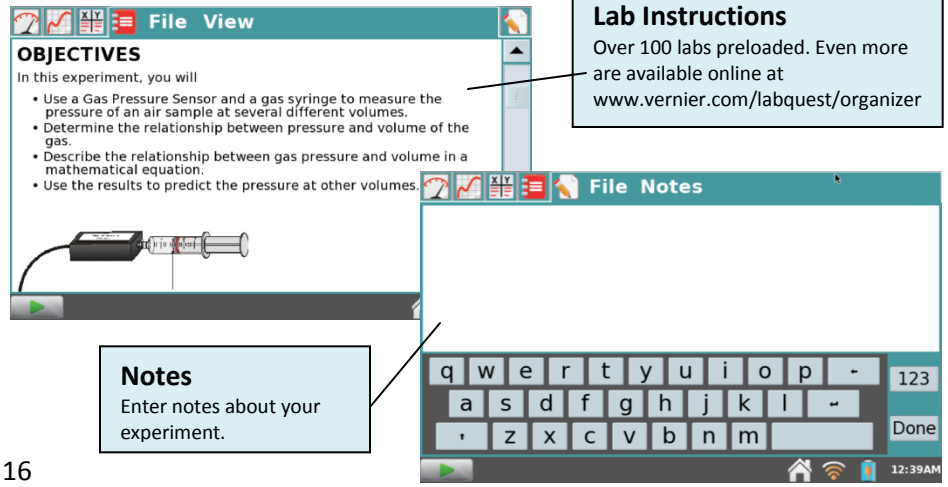
Computer Printing

You can print LabQuest files using your computer and our Logger Lite or Logger *Pro* software. See the software documentation for more information.

Print a saved file – Connect a USB Flash drive to your LabQuest. Choose Save As from the file menu and tap on the USB icon. Name the file as desired and select OK. The file will be saved on your flash drive and can be opened using Logger Lite or Logger *Pro* on your computer.

Import your data – Start the Logger Lite or Logger *Pro* software on your computer. With your data displayed on the LabQuest, connect the LabQuest to your computer using the USB cable that came with LabQuest. Follow the computer software prompts to import the data to the software.

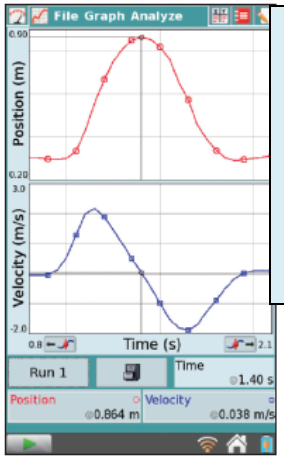
LabQuest App – Other Screens



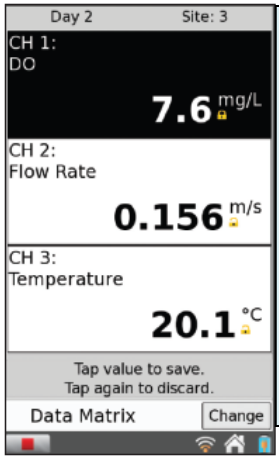
Lab Instructions
Over 100 labs preloaded. Even more are available online at www.vernier.com/labquest/organizer

Notes
Enter notes about your experiment.

LabQuest App – Other Views

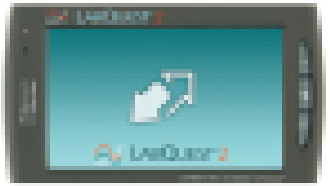


Portrait orientation
Rotate LabQuest to a portrait orientation to better view two graphs , tables, and lab instructions.



High Contrast Mode
Use high contrast mode when viewing a LabQuest in bright light. To access this option, tap Preferences on the Home Screen, then tap Light and Power.

Using LabQuest with a Computer



A double arrow indicates the computer is in control of your LabQuest

Connect LabQuest to a computer running Logger *Pro* or Logger Lite to:

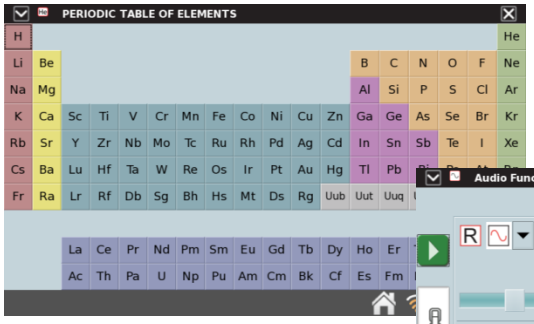
- Import data from LabQuest for further analysis
- Use LabQuest as a computer sensor interface
- Manage user data (Open, Save, Delete, or Import) stored in the LabQuest's internal memory.

Software Requirements:
Logger *Pro* 3.8.5 or newer
Logger Lite 1.6 or newer

Using LabQuest with Tablets and other Mobile Devices

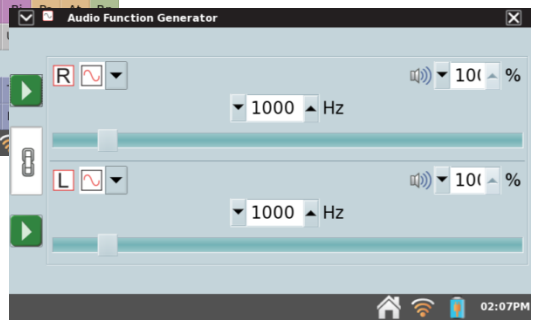
You can collect, view, analyze, and annotate data from a LabQuest 2 on an iPad®, Android® tablet, or other mobile device that has a supported browser.

Other Applications



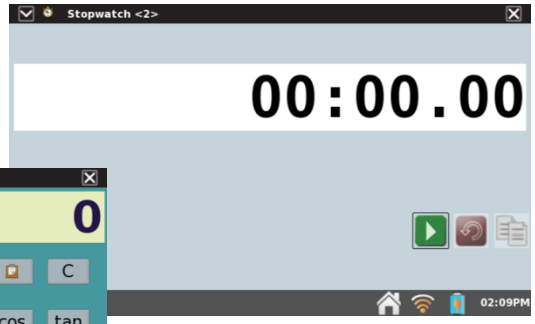
Periodic Table

Periodic Table, Audio Function Generator, and Power Amplifier (not shown) are accessed via the Home menu.

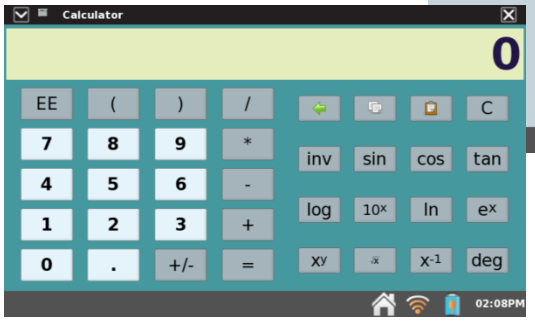


Audio Function Generator

Stopwatch, Calculator, and Sound Recorder (not shown) are accessed via the Home> Accessories menu.



Stopwatch



Calculator

Care of LabQuest

Software Updates – Software updates for LabQuest, as they are released, will be available at www.vernier.com/labquest/updates. To determine what version of the software you are using, tap System on the Home screen, then tap Information.

Screen Calibration – The screen may need to be recalibrated periodically. To access the calibration tool, tap System on the Home screen, then tap Calibrate Screen. If you are unable to access the Calibration tool, press and hold the power button until the LabQuest shutdown message is displayed. Wait until the system shuts down then turn the unit back on. While the system is rebooting, press the Home key to prompt the system to display the calibration tool. Tap the calibration target in the five locations indicated to calibrate the screen.

System Reset – To reset the system, tap System on the Home screen, then tap Reboot. If you are unable to access the Reboot tool, press and hold the power button until the LabQuest shutdown message is displayed. Wait until the system shuts down then turn the unit back on.

Battery Life – Battery life will depend on the sensors and features used. To access power saving options, tap Preferences on the Home Screen, then tap Light and Power.

Battery Maintenance – Use only the supplied AC adapter or optional charging station to charge the LabQuest battery. A full charge can take eight hours. The battery cannot be overcharged, and it can be safely recharged after a partial discharge.

Screen Maintenance – The LabQuest screen is water resistant. Wipe the screen clean with a cotton cloth that is slightly dampened with water or ethanol. ***Do not use any other solvents. Do not submerge your LabQuest in liquids.***

Summer Storage – For long-term storage of your LabQuest, fully shutdown the unit by pressing and holding the power button until the shutdown message is displayed. After the system shuts down you can remove the battery, if desired. Store the LabQuest in a climate-controlled environment. ***Excessive heat can significantly reduce battery life.***

Federal Communication Commission interference statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution
This 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

RF Exposure Warning
The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

IC Statement
This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

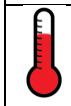
Industry Canada - Class B This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of Industry Canada.
Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matérial brouilleur: “Appareils Numériques,” NMB-003 édictée par l’Industrie.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut causer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer fonctionnement du dispositif.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.
L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut causer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer fonctionnement du dispositif.

RF exposure warning: The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Avertissement d'exposition RF: L'équipement est conforme aux limites d'exposition aux RF établies pour un incontrôlés environnement. L'antenne (s) utilisée pour ce transmetteur ne doit pas être co-localisés ou fonctionner en conjonction avec toute autre antenne ou transmetteur.

Safety Information

	Read all safety information and operating instructions included in this Quick Start Guide prior to using your LabQuest 2.
	LabQuest is designed to be splash resistant. However, avoid water immersion and standing liquid on the display. If water gets in the device, immediately shutdown the device (tap System on the Home screen, then tap Shutdown, or hold down the power button until the shutdown sequence begins). Remove battery, connected cables, SD card, and any other accessories. Allow to dry thoroughly before restarting. ***Do not attempt to dry using an external heat source.***
	Safe operating temperatures are from 0 °C to 45 °C. Storage temperature are -30 °C to 60°C. Exposures to low or high extreme temperatures will temporarily reduce battery life. Avoid rapid temperature changes as condensation may form inside the device. Do not leave in a car as temperatures can exceed the maximum storage range.
	Contains a Lithium Ion battery. Use only supplied battery for this device. Do not puncture or expose to excessive heat or flame.
	Do not store in chemical closet or in areas of concentrated chemical gasses.