

Data Matrix Mode

Data Matrix is one of LabQuest's data-collection modes. It was created to improve data collection in the field by addressing several key issues. These include:

1. Collecting data at multiple locations and over multiple days, all in one file.
2. Collecting data from more sensors than there are ports available.
3. Collecting data from certain combinations of water quality sensors that previously could not be used together due to electrical interference.

It is recommended that sensors requiring calibration be calibrated prior to going into the field. Save this calibration onto the sensor itself (when available).

Set Up Data Matrix

1. Connect one of the sensors to LabQuest and choose New from the File menu. More sensors can be added at any time during data collection.
2. On the Meter screen, tap Mode. Change the Mode to Data Matrix.
3. Enter the names for the rows and runs of data. The default is that rows correspond to sites and runs correspond to the collection day. Either accept the default names of Site and Day, as shown in Figure 1, or enter unique names as shown in Figure 2. Another default setting is for LabQuest to automatically increment the Site and Day names, e.g., Site 1, Site 2. Select this box as shown in Figure 2 to disable automatic incrementing.

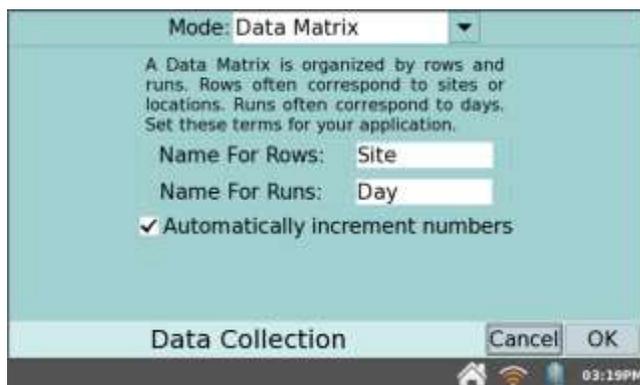


Figure 1 Data Matrix with default settings

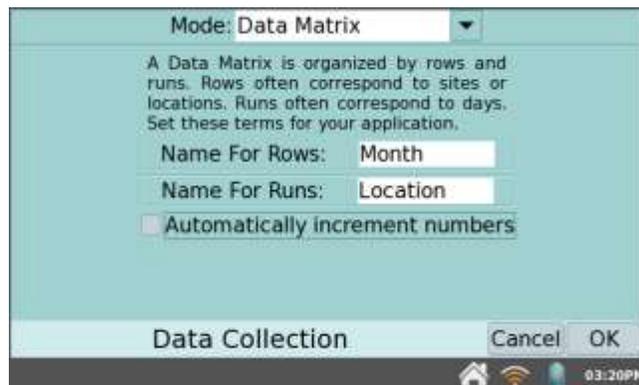


Figure 2 Data Matrix with custom labels

4. Tap OK.
5. If not collecting data immediately, you may wish to save the file by choosing Save from the File menu.

Collect Data

6. Start data collection.
7. The Change screen will open, as shown in Figure 3, allowing changes or adding sites and days. **Note:** The words Site and Day may have been changed something else, but these instructions will use the default terms.
 - a. If the Automatically increment numbers box was not checked, Day 1 and Site 1 will be filled in as shown in Figure 3. If not, tap Add Day to add a day, the tap Add Site to add a site. At least one site and day will need to be added.
 - b. All of the anticipated sites and days can be added at this time, or they can be added later.
 - c. Tap Continue.

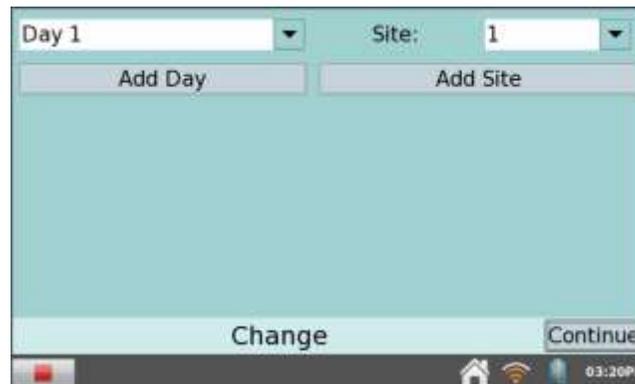


Figure 3 Data Matrix Change page with first day and site added

8. Each connected sensor will display a live reading on the screen as shown in Figure 4. If there is not enough room to display all sensors, a scroll bar will be available. Note that the selected site and day are displayed across the top of the screen for reference.

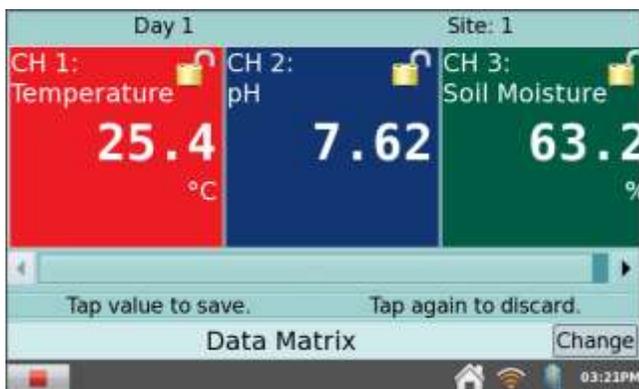


Figure 4 No data have been kept

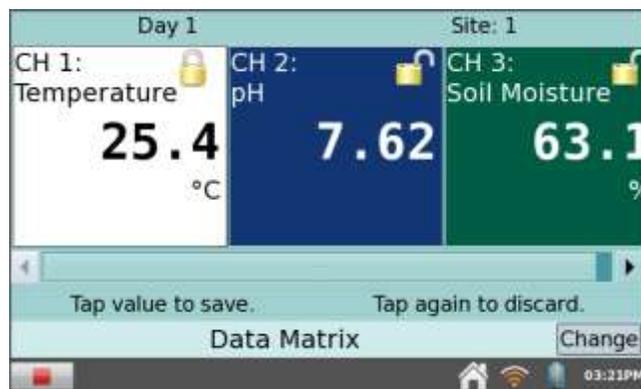


Figure 5 Temperature value has been kept

9. When ready, tap the value to keep it. The meter for that value will turn white and the padlock will close as shown in Figure 5, indicating the value has been kept in the file. If a mistake is made, tapping a second time will discard the value.
10. Once a value has been kept, that sensor can be removed and a different sensor connected, if desired.

11. Once all the values for that site and day have been kept, either stop data collection, or tap Change to return to the Change screen. Choose Change only if the next location is very close and will continue collecting data immediately. Otherwise, stop data collection and save the file.
12. The data can be viewed by navigating to the Table screen. Use the scroll bars to navigate around the table, if needed.

ANALYSIS

13. The data can be graphed by doing the following:
 - a. Navigate to the Graph screen.
 - b. To change between one and two graphs, choose Show Graph from the Graph menu, and make your selection.
 - c. Tap on the y-axis label and select the parameter you wish to graph from the list.
 - d. Select the desired site or day from the chooser located near the upper right corner of the graph.
14. If the data are currently graphed to compare locations, but a comparison of dates is desired instead, or vice versa, they can be transposed or *pivoted* (LabQuest 2 only). To pivot the data:
 - a. Navigate to the Graph screen.
 - b. Choose Advanced ► Pivot Data from the Analyze menu.
 - c. The pivoting will be reflected on the graph and in the data table.

MAPPING

15. If you have *Logger Pro* available, you could also transfer the data from LabQuest to a computer. Instructions can be found in Appendix B. *Logger Pro* has more graphing and analysis options than LabQuest, such as bar graphs and the ability to insert images, as the map shown in Figure 6. If your file includes GPS coordinates, *Logger Pro* also has the ability to export your data into Google Maps or ArcGIS. Instructions can be found in [TIL 2802 How do I map data collected on LabQuest or LabQuest 2?](#)

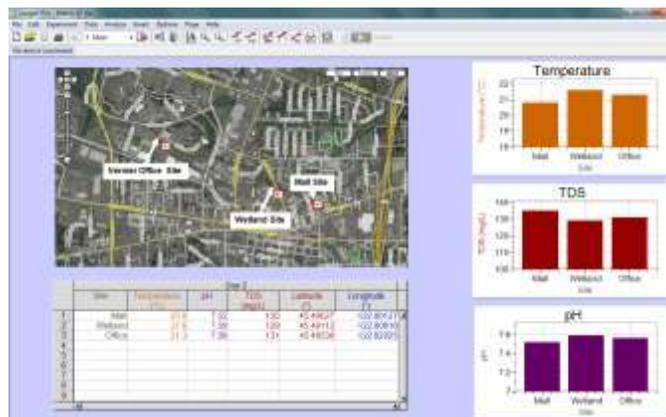


Figure 6 Water quality presentation in Logger Pro