

MiLABEx™

Short User Manual for Desktop

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Introduction

MiLABEx™ Desktop is a powerful app that collects, displays, and analyzes experiment data. MiLABEx™ for desktop should be paired with the einstein™ LabMatell, which allows you to transform any PC into a holistic digital lab and works with unique brand sensors that collect data such as temperature, humidity, light, and many more.

Designed for K-12 educators, MiLABEx™ offers comprehensive features and capabilities for a unique learning and teaching experience:

- Create and run experiments
- Collect and display data in real-time
- View data in various formats, including graphs, tables, and meters
- Create and share workbooks with experiments and enriched learning
- Have your own weather station and collect data for 24 hours, 3 days, and even longer.
- Export data

Getting Started


Installation on a PC

To download the MiLABEx™ software, visit the download page in [Einstein World website](#).

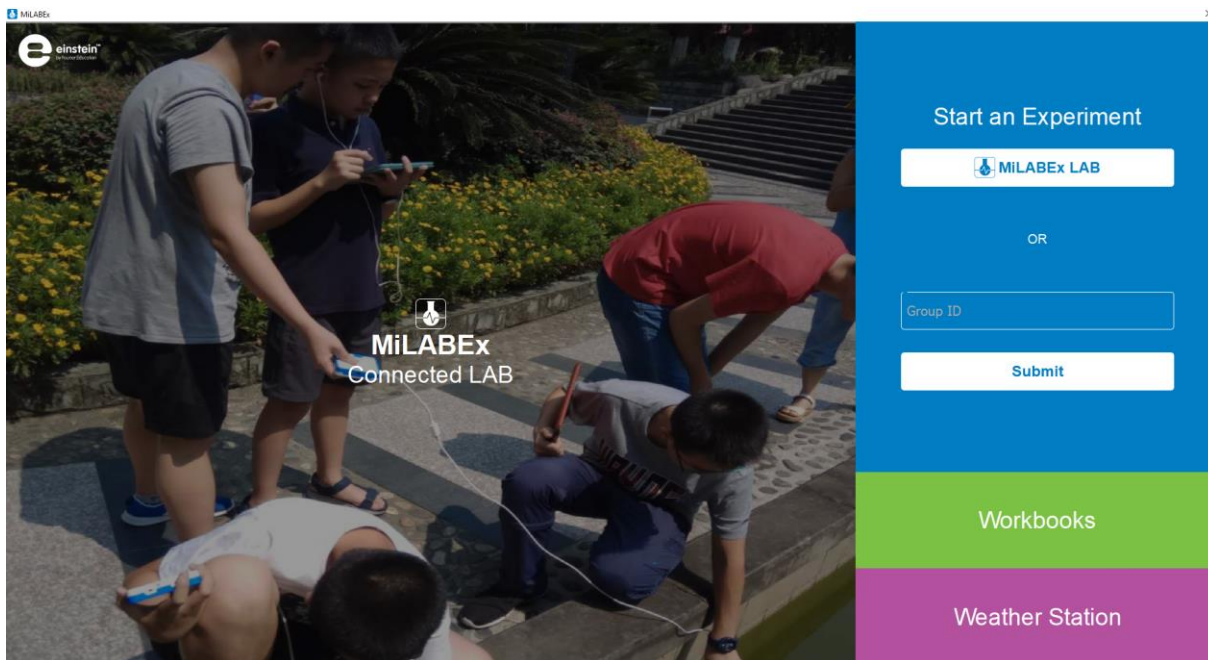
Click on Download for your relevant platform – Windows, Linux or Mac.

The installation file will be downloaded. Double click on the file and follow the installation instructions.

Opening the MiLABEx™ App

Once installed, the MiLABEx™ app appears with the following icon  on your device:

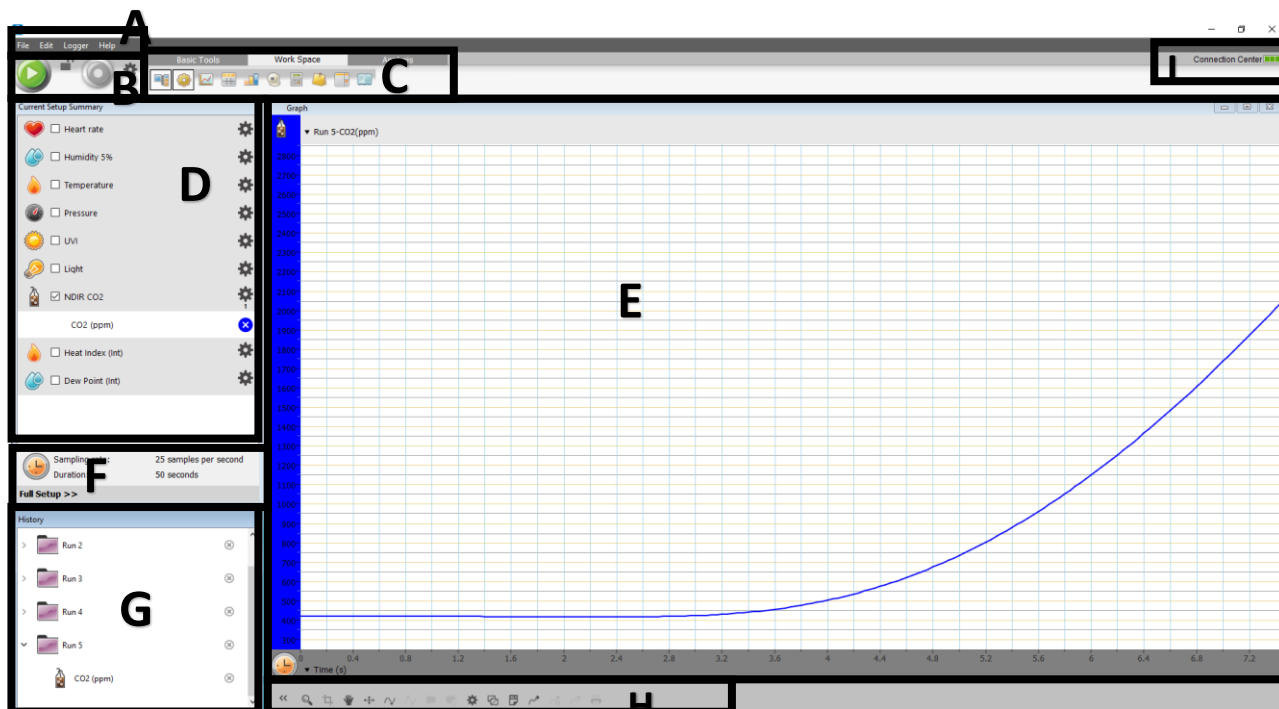
Simply tap it to open the app. When opening the app, you reach the following landing page



MiLABEx LAB

To start a new experiment, click on MiLABEx LAB.

The following page opens:



A – menu

The menu includes few functions:

File– save, open file, language, export file to mobile and exit.

Edit – cut, past, undo etc.

Data logger function – download experiment from labmate, connection center (managing the connection with the LabMate)

Help – user guide and about.

B - Run/Stop

C – Tool Bars

There are 3 tool bars that help navigate MiLABEx function –

Basic Tools – Here you can open a new experiment project or open a saved experiment on your device

Work Space – Here you can add views for your experiment and few other helpful tools like notes or calculator.

Analysis - Here you can find different functions and formulas to have further calculations on your experiment.

D – sensors List

The list of the connected sensors can be found in this box.

Checking the box selects the sensor that we want to use for the experiments. After selecting the sensor, the plot color is displayed on the list.

If it is external sensor, the port number appears under the sensor settings wheel icon.

Clicking on the settings icon opens the full setup which is described in more details [here](#)

E – Main screen

The default view in this area is Graph view. If you add another view, it is added to this area. The views are floating windows. You can organize them and resize them according to your preference.

F – Settings

A short summary of the settings is found here.

In order to go to the full setup, click on “full setup>>”. In the full setup it is possible to see the full information about the sensor's units, ranges and calibrate the sensors, when relevant.

G – History

All the experiments appear in this window. It is possible to see all the history runs of the current experiment. Also, when opening an experiment file from the device, the runs results appear here. The last run appears on the graph. In order to view previous runs, it is possible to drag the folder to the current view or open a new view and drag it to the new view (table, graph, meter). It is possible to open as many views as needed.

H – Graph Functions

Here you can find functions that are relevant for graph view. You can enlarge the graph, add points, draw prediction etc.

I- Connected Center

The connection to the LabMate is indicated here. By clicking on the “connection center” you can choose which LabMate to connect to.

There are two connection options – USB cable and BLE.

USB cable - The MiLABEx default choice is USB connection. It connects to the device automatically.

BLE – To connect with BLE, first pair the LabMate must be paired with your operating system (windows/Linux). Then when opening MiLABEx it is possible identify it and connect with it.

Workbooks

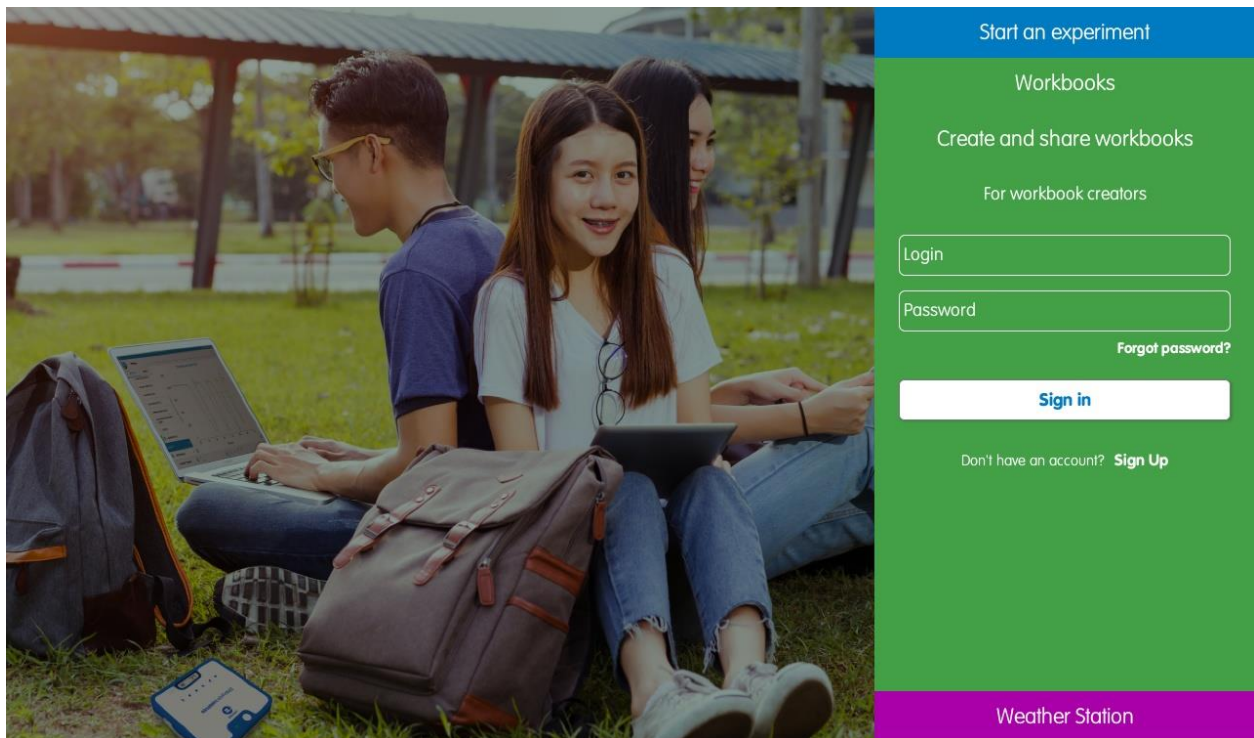
Workbook enables teachers, students, and publishers to create activity in science which can includes background and experiments instructions, pre-setup and video demonstration. Then, it is possible to open the activity and run it in share the activity in the class or in the public store.

This chapter explains how to login, create the activity, and use existing experiments.

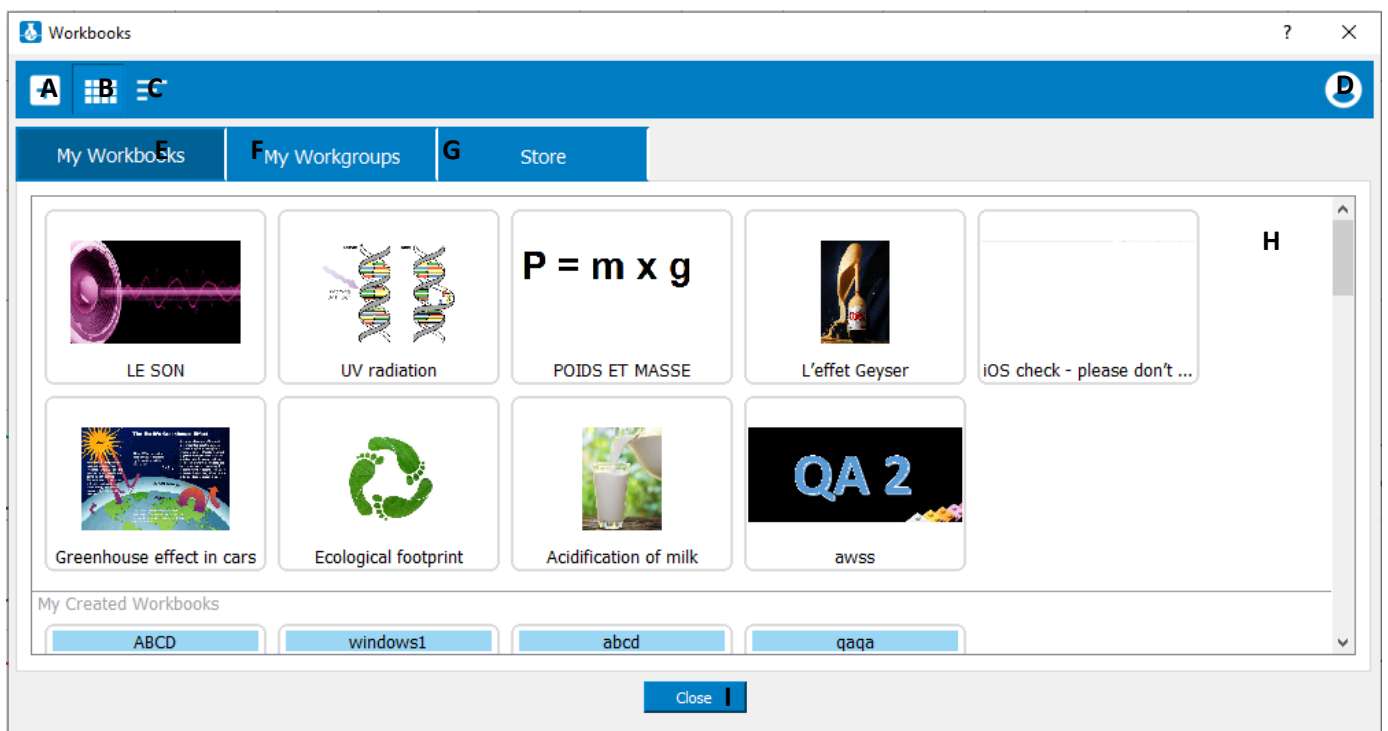
Introduction to the Workbooks Main Screen

Login

To open Workbooks, on the landing page tap Workbooks. Then a login section opens. Enter your account information or tap the ‘Sign Up’ link under the ‘SIGN IN’ button to create a new user.



Main screen



A. Create a new workbook:

B. Grid View

- C. List View
- D. Profile: Tap the icon to log out of your user
- E. My Workbooks: Shows the workbooks you've added to your personal library for quick access and workbooks that you've downloaded from the store.
- F. My Workgroups: Shows the workgroups you have created in your personal library.
- G. Store: Shows all accessible workbooks in the MiLABEx™ store from around the world. All workbooks that appear in the store have been approved by the Einstein World team and are available for free download or for a price determined by the creator. All workbooks are reviewed by the Einstein World team before they can be added to the store and used by all users. The review makes sure that the content is adequate and suitable for the store. It does not check the the experiment.
- H. Main Screen: The main screen view is where you'll see the results of your selection, i.e., workbooks in the My Workbooks or Store tabs filtered by category/language (if selected).
- I. Close: Closes the window.

Creating & Uploading a Workbook

Preparing the Activity Files to Create a New Workbook

To create a workbook, you need to start by preparing the activity files it contains. These are content files in the supported formats: PDF, mp4, and JPEG.

Build your activity files on your computer or device of choice. Draft the text required for your work on any word processor that allows you to save in PDF format. It is important that your workbook include all the instructions and step-by-step guidelines to executing the experiment outlined in it. The PDF can include text and images. The final PDF must be uploaded to the device you're using.

To upload your activity into a workbook, you'll need to add at least two images and you may also add videos. Make sure the files you want to add are saved on the device you are using. Images should be in JPEG format. Video files should be in mp4 format. It is best to save all files to the downloads folder on your device you are using.

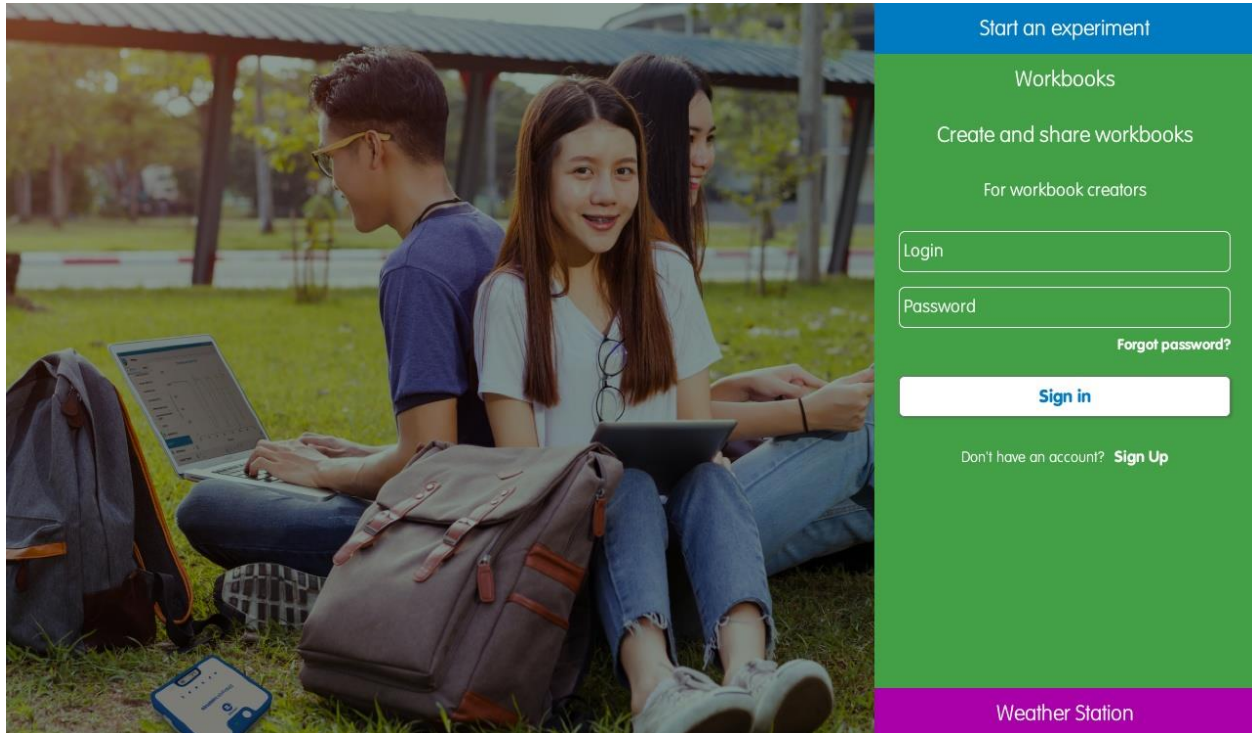
<p>Note: The entire activity (including all files) must not exceed 25 MB.</p>
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Creating Your Workbook


Below is a step-by-step guide to creating your new workbook.

Step 1: Login

Enter your username and password and tap the Sign In button on the main home screen.



Step 2: Create new workgroup

Click on the + icon in the top Left menu: . After you tap the icon a new screen opens with tabs and fields to fill-in. In this guide we go through all the tabs, step by step. The first Tab that opens is Properties Tab. Please follow the next steps to create the workgroup.

Step 3: Properties Tab

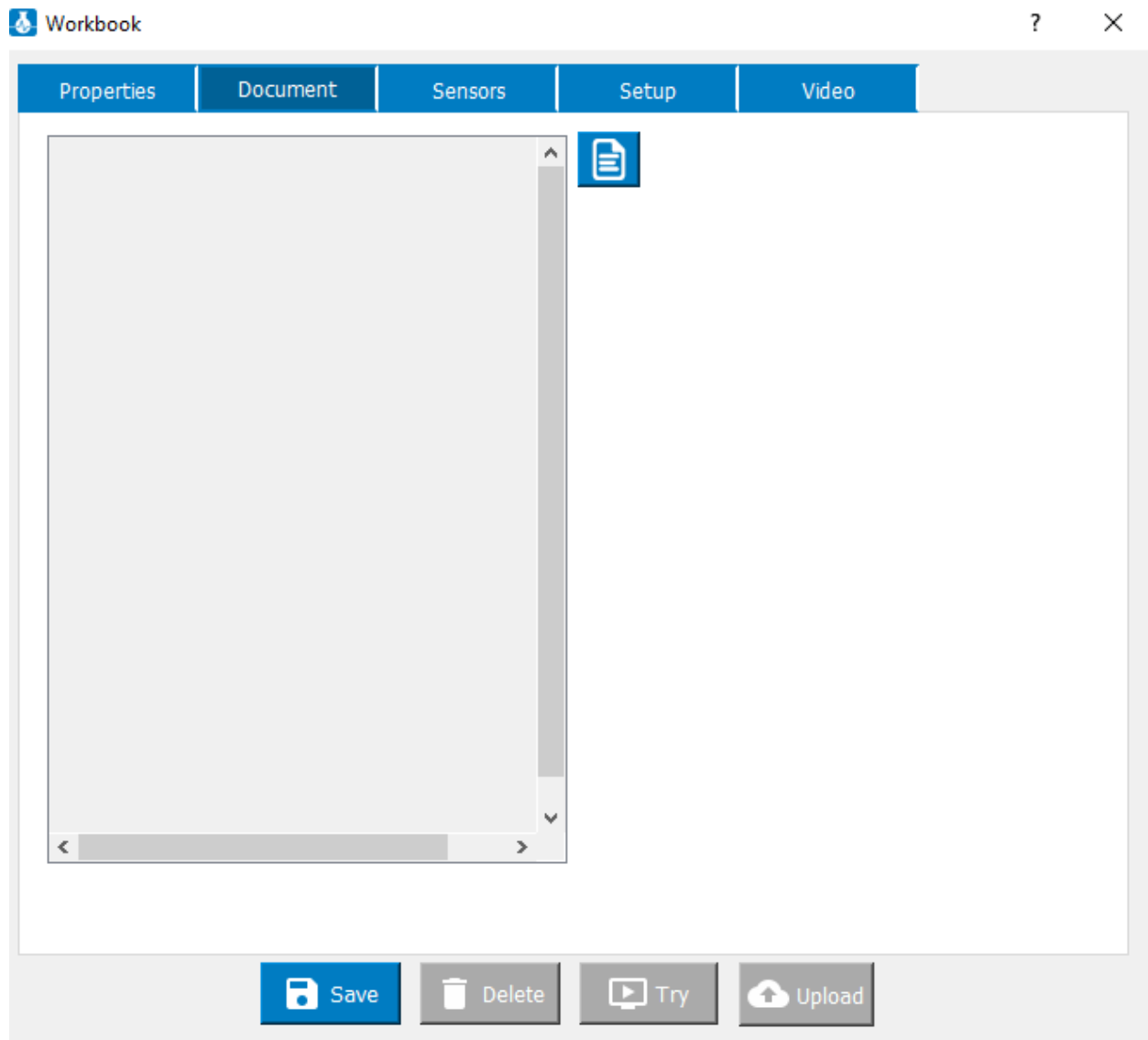
The screenshot shows the 'Workbook' creation screen. The 'Properties' tab is selected. The form includes the following elements:

- Icon:** A square box labeled 'A'.
- Title:** A text box labeled 'B'.
- Description:** A larger text box labeled 'C'.
- Upload to:** A dropdown menu labeled 'D' with 'Workgroup' selected.
- Workgroup:** A text box labeled 'E' that appears when 'Workgroup' is selected.
- Topic:** A dropdown menu labeled 'F' with 'Physics' selected.
- Language:** A dropdown menu labeled 'G' with 'English' selected.
- Thumbnail images:** Three image boxes, the first labeled 'H'.
- Bottom Bar:** Buttons for 'Save' (I), 'Delete' (J), 'Try' (K), and 'Upload' (L).

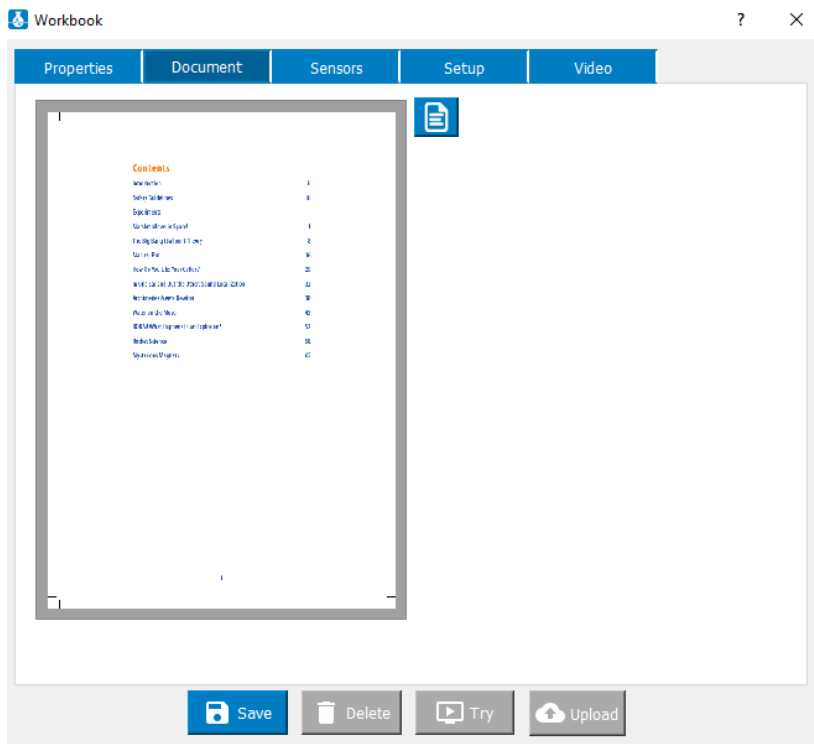
- A. Workbook Icon: To insert an icon, tap on the image box and a file explorer opens to choose the image. Please note that adding an image is required.
- B. Title: Write the file title for your workbook. It is limited to 45 characters.
- C. Description: Provide a brief description of the workbook's activity and what it includes, such as files, experiment type, what students will learn, concrete takeaways, grade level, etc. The description is limited to 240 characters.
- D. Public store/workgroups - Allow the experiment to be published in the public store or as an experiment that can be accessed with a workgroup ID. When the Workgroup is selected another workgroup field opens (E)
- E. Workgroup ID: This field only appears when you choose the Workgroup option. Enter a new workgroup ID to create a new workgroup or use an existing workgroup ID to add your workbook to an existing workgroup. Workgroup IDs can be any combination of characters and numbers (at least 4 characters). When sharing the workbook with students, they'll only need the ID to access it from the MiLABEx™ app by tapping the **Workgroups** button on the main screen.
- F. Topic: Choose one of the categories from the available options.
- G. Language: please choose the language in which the activity is written.
- H. Thumbnail Images: To insert an icon, tap on the image box and a file explorer opens to choose the image. Please note at least one image is required.

Step 4: Document Tab

Tap on the Document Tab and the file icon to upload a PDF file from your device.

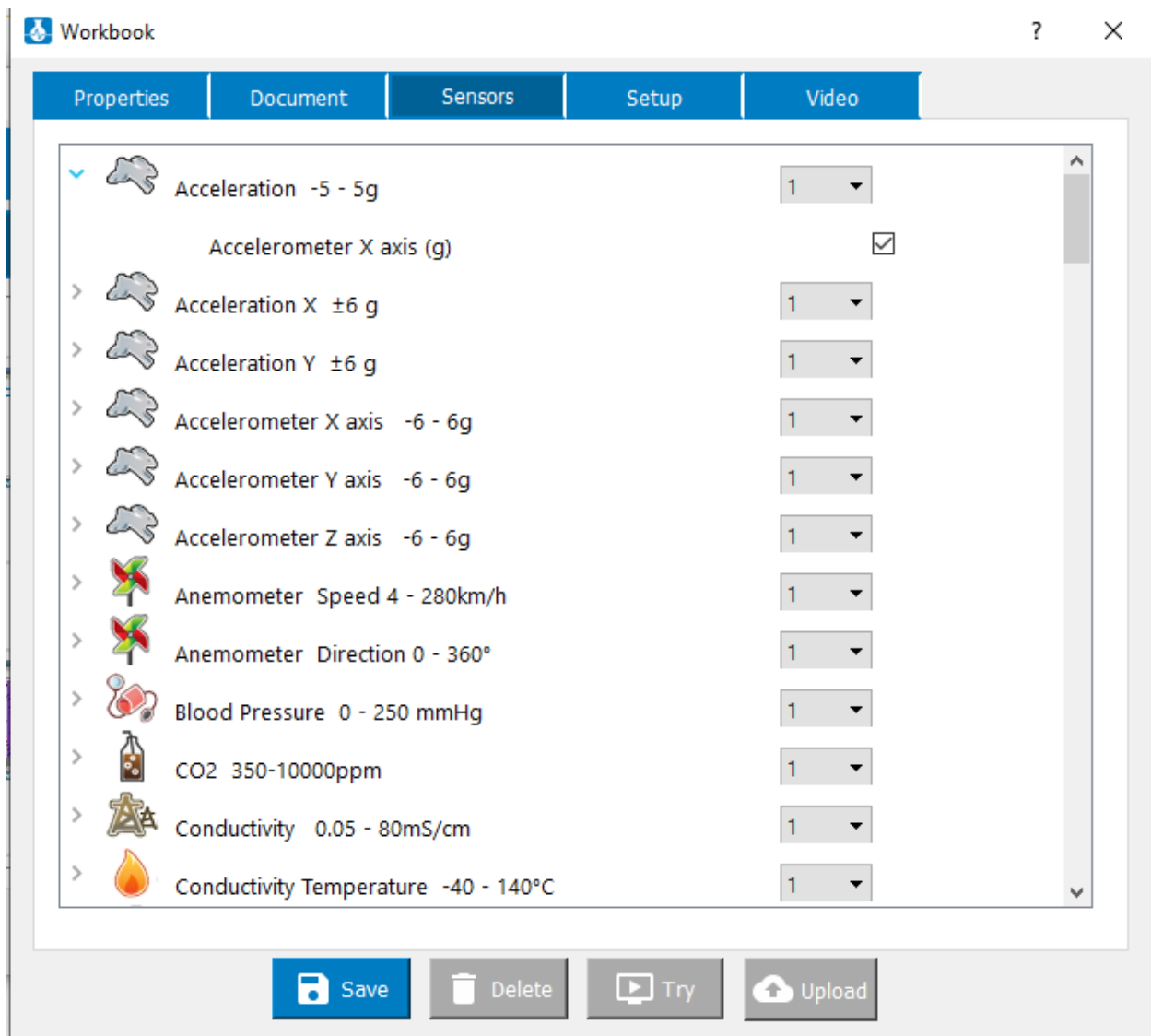


Choose the file from your device. After selecting the file, it is displayed on the screen like so:



Step 5: Sensors Tab

Tap the Sensors tab. A list of sensors appears. Open the sensors required for your workbook's experiment and tick the box. If you wish to select multiple sensors for the same metric, tap the sensor to open a dropdown menu of additional sensors of the same type. For example, tap on **Temperature**, and select numerous types of temperature sensors that are available. Tap on the sensor(s) you want to use and select the number of sensors you'd like to add in the dropdown option with the down arrow.



Step 6: Setup tab

Tap **Setup** tab and fill in the fields as required.

Workbook ? X

Properties Document Sensors Setup Video

Sampling Rate Every hour ▼

Duration (hr,min,sec) 0 0 0

X Axis Time ▼

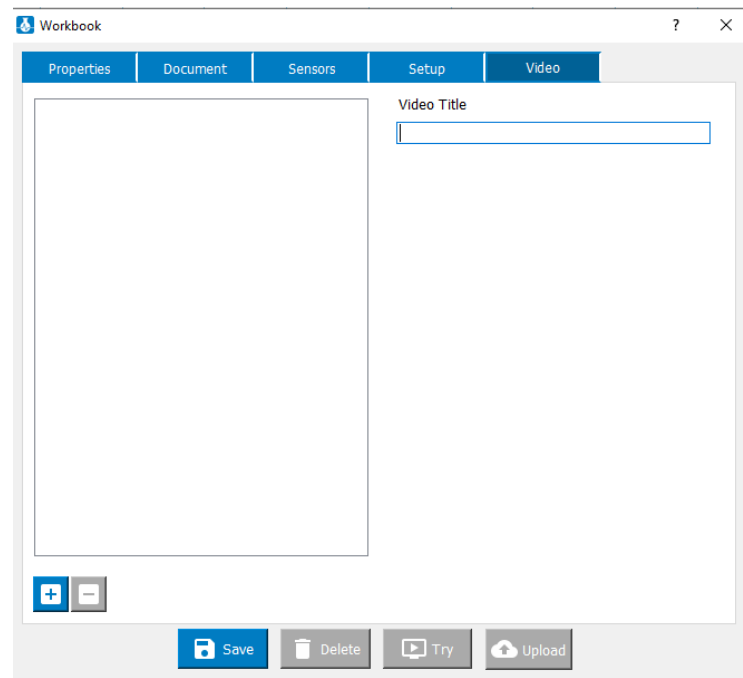
Experiment Type Auto ▼

Save Delete Try Upload

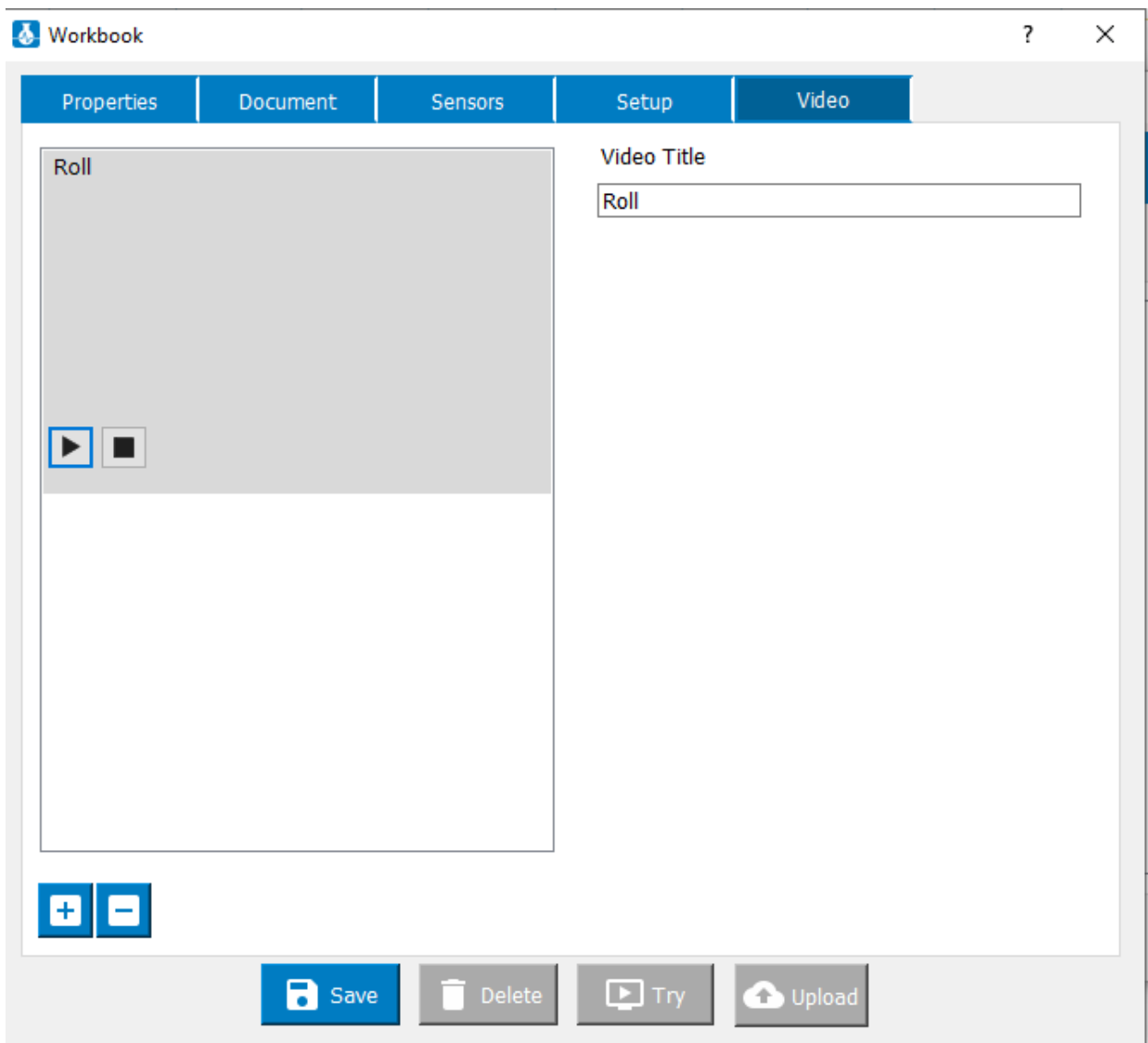
Step 7: Video Tab - optional

It is possible to add Video to give further explanation for the experiment.

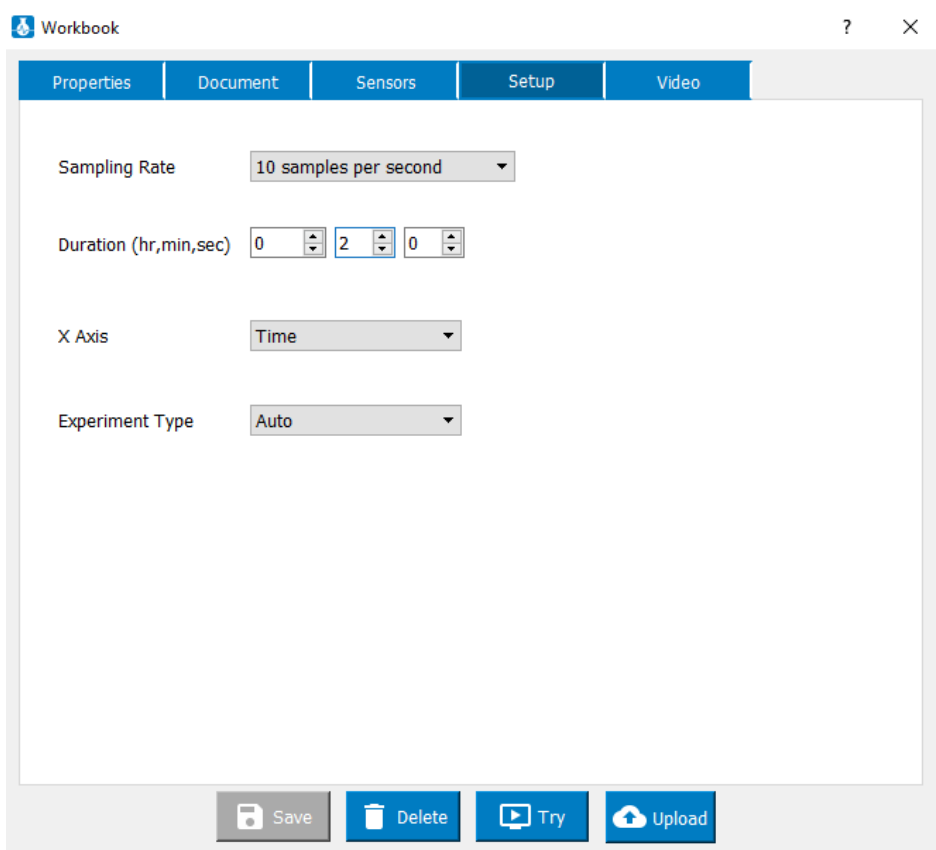
To upload a video tap on the + icon, on the bottom left as shown below



The video is uploaded to the workgroup



step 8: Upload Workbook

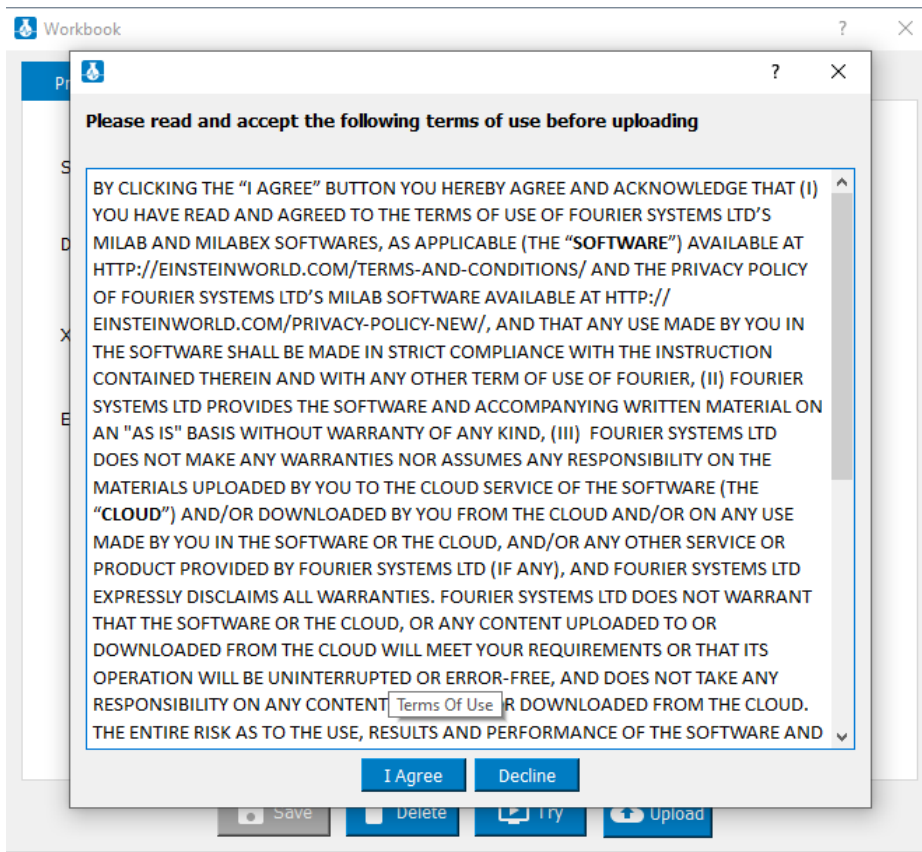


Once you finish setting all the text, documents, and images, it is time to upload the workbook to the store or to your Workgroup file. Tap Save. This enables the upload button (as well as try and delete). Any additional change enables the save again. Only after Save the changes that were made are uploaded.

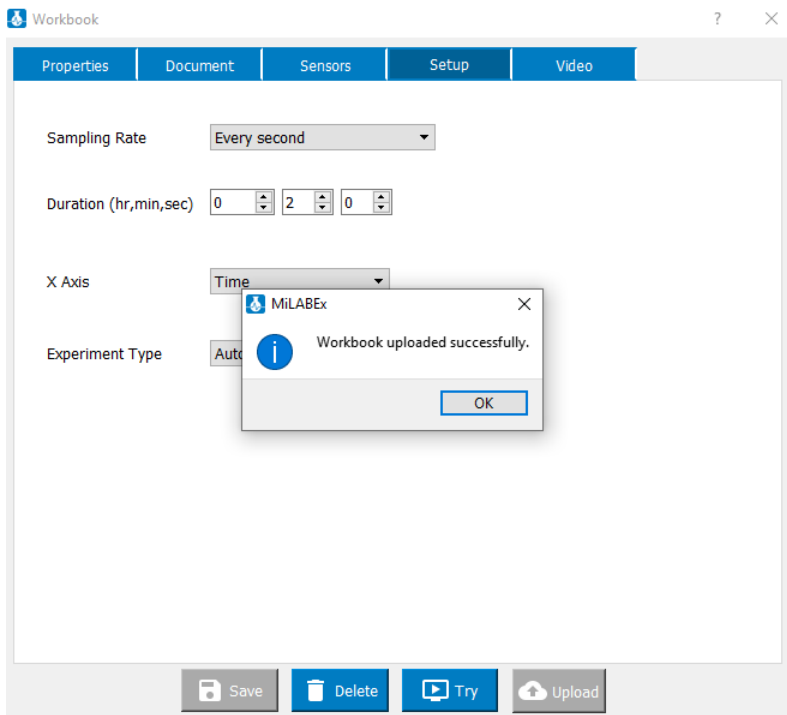
The file is uploaded according to your selection in the Properties Tab.

- Public store: Upload your workbook to the public store where it can be accessed by any einstein™ user. All store workbooks must be reviewed and approved by the einstein™ team before they appear in the store.
- Workgroups: Workgroups are a great option for teachers who want to share their workbooks only with a specific group of students or peers. When adding workbooks to workgroups, they are not reviewed by einstein™ and do not appear in the public store.

When you're done a message with Term and Conditions appears.



A popup informs you that the workbook has been uploaded. Click OK to close the notification.



Once completed, you can find your workbook in the **My Workbooks** tab.

Optional step: Try - Run Experiment

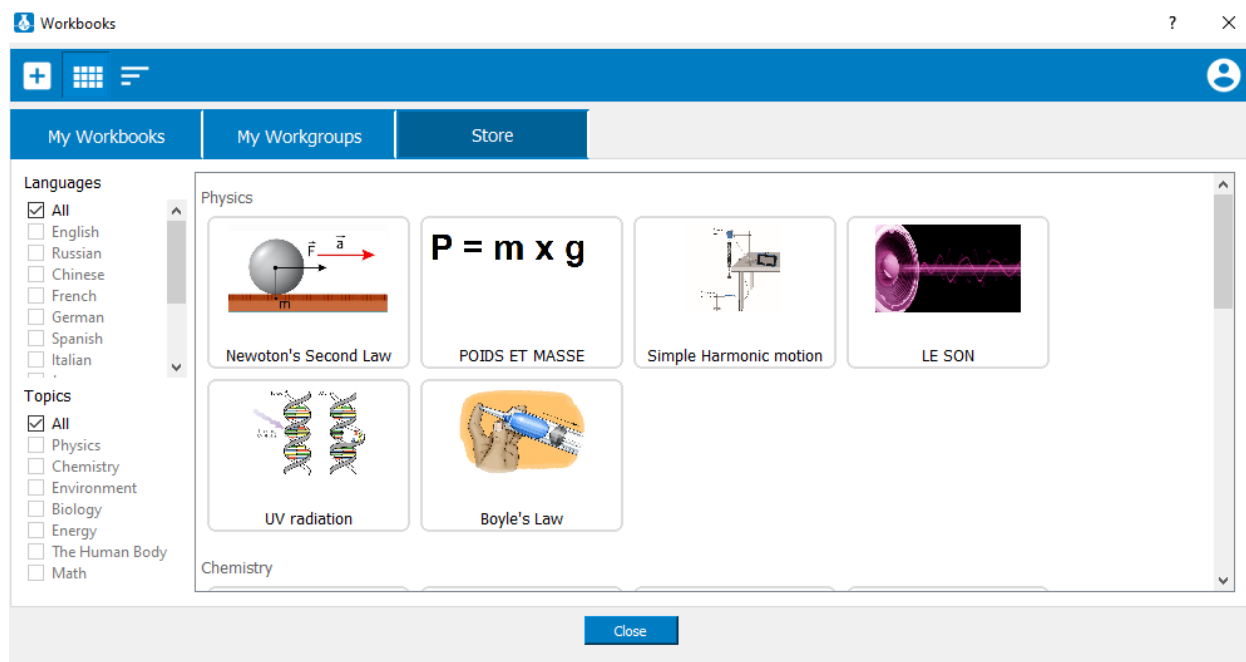
Once the Experiment was saved and/or uploaded, it is possible to press Try and run the experiment. When pressing Try the Experiment with its settings opens. Pressing “Run” starts the experiment.

Workbooks in Review

Before a workbook can be approved in the **Store**, it must be reviewed by the Einstein World team. Once a workbook has been reviewed, you’ll receive an email informing you if it is approved, not approved, or if amendments are required.

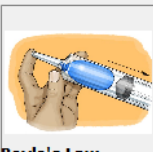
Transferring Approved Workbooks from the Store to My Workbooks

All approved public workbooks (yours and those created by other users) can be viewed in the store. You can select chosen languages and topics.



Clicking twice on the tile open more details about the workbook

Download
?
X



Boyle's Law

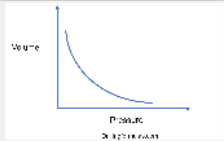
Boyle's law states that at constant temperature, the pressure of a given mass of a dry gas is inversely proportional to its volume:

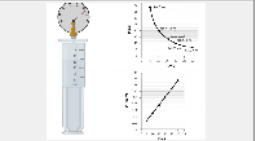
$$P=k/V$$

Topic: Physics
 Language: English
 Author: eli kalmanzon

$$P_1V_1 = P_2V_2$$

P = Pressure of the gas
 V = Volume of the gas
 Temperature must be constant






Download

Click Download to add it to **My Workbooks**.

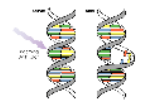
Workbooks
?
X

+
Grid
List

My Workbooks
My Workgroups
Store




LE SON



UV radiation


$P = m \times g$

POIDS ET MASSE




L'effet Geyser


iOS check - please don't ...



Greenhouse effect in cars




Ecological footprint



Acidification of milk

QA 2

awss



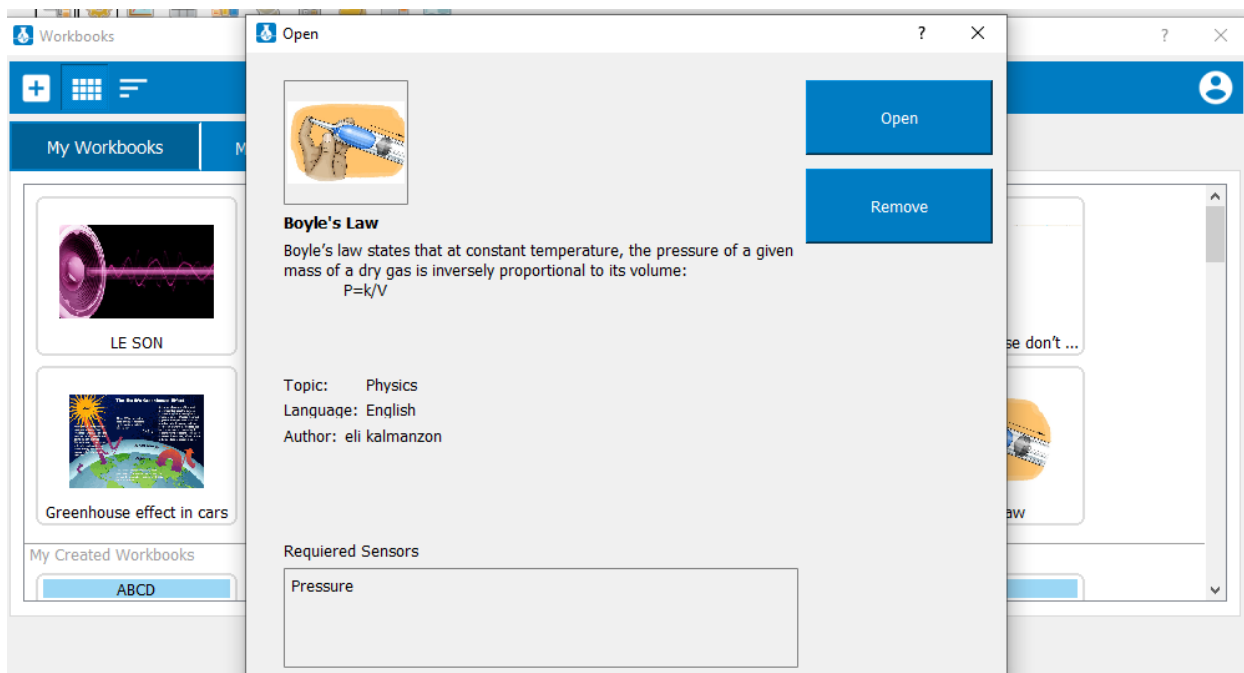
Boyle's Law

My Created Workbooks

ABCD
userguide
userguide
windows1
abcd

Close

Double click on the workbook and it opens more details about the experiment.



Click Open to open the Experiment and run it. The PDF and Video (if included) opens on screen.

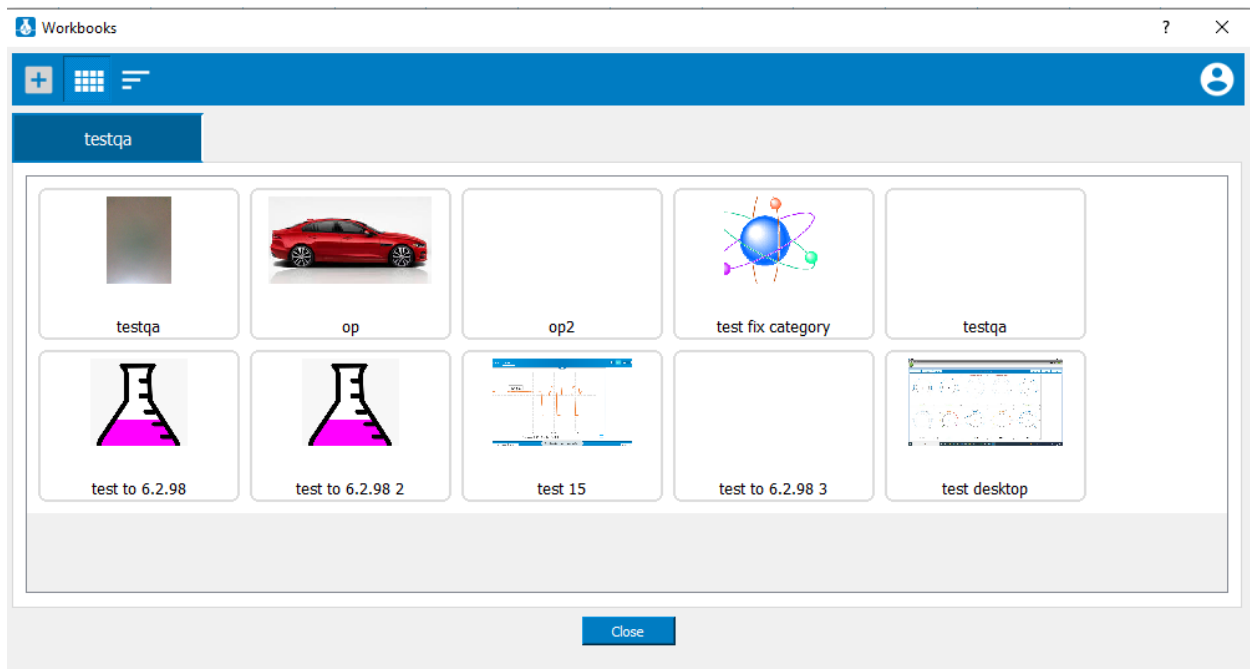
Accessing a Workgroup by ID

Students and peers can access workbooks shared with a specific workgroup by using the workgroup ID.

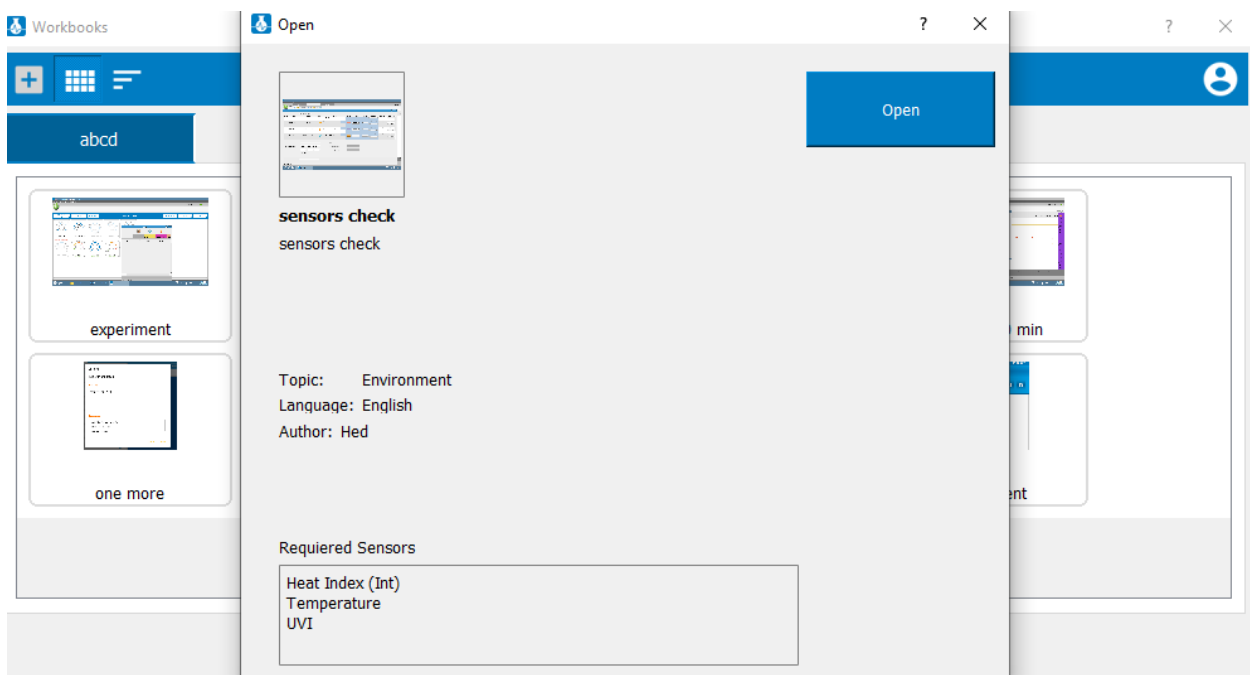
By default, **Start an Experiment** section opens as so

In case this section is closed, click on “Start an Experiment” and the section opens.

Typing the relevant workgroup ID and then Submit opens the list of workbooks affiliated with this workgroupID.



Then Double click on the relevant tile the Experiment opens the experiment details.



Click run to open the experiment and Run it.

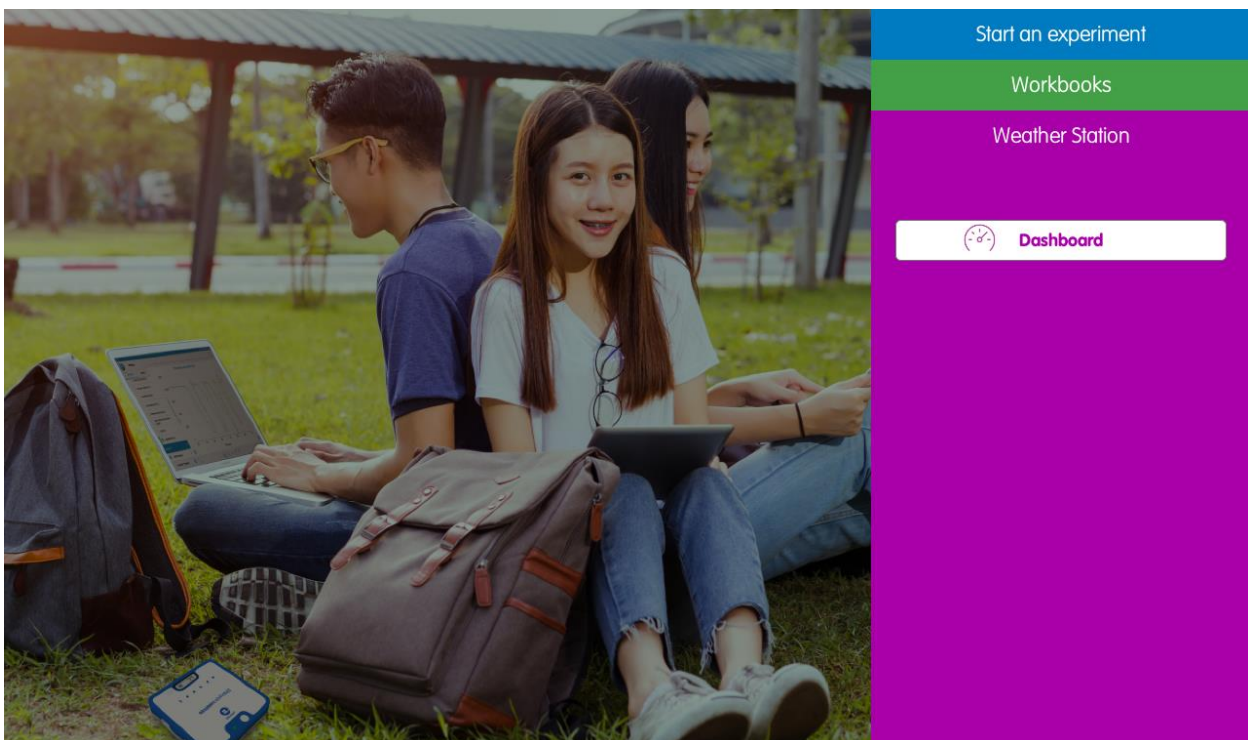
Weather Station

Navigate the Weather Station

The “Weather Station” is a dashboard that shows weather related sensors. Its main purpose is to enable students to visualize the current weather status with chosen parameters or monitor the behavior of the weather parameters for a long period of time.

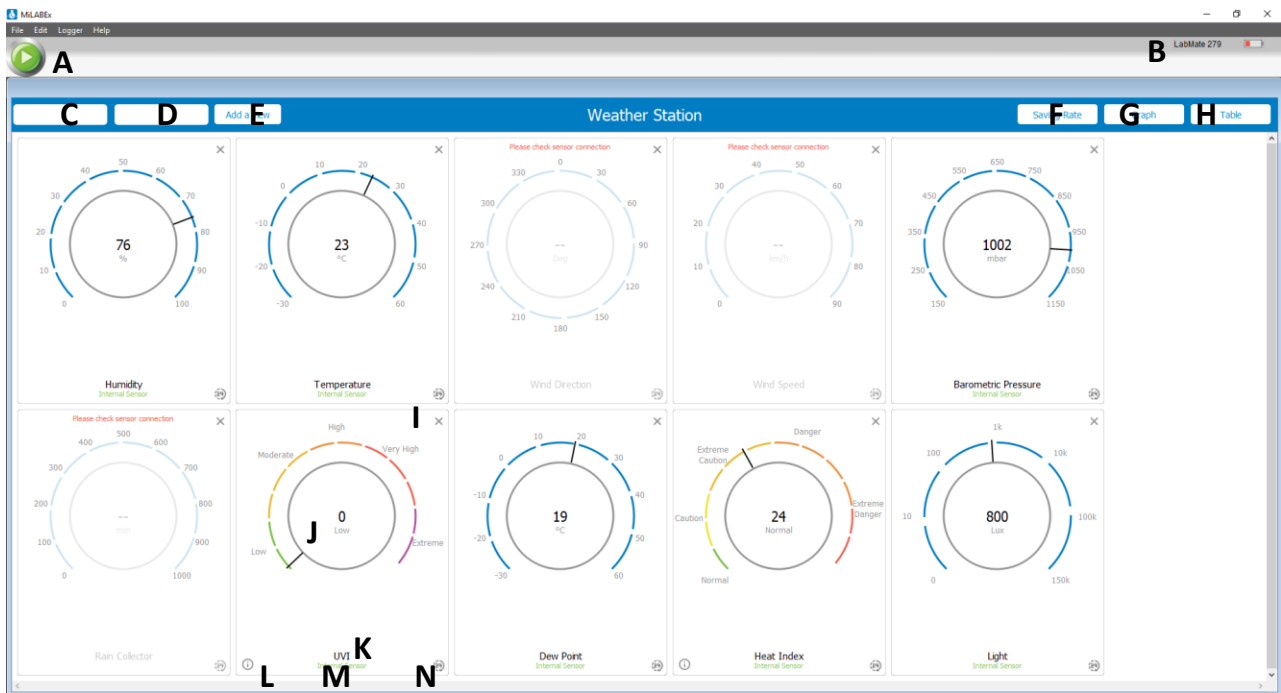
The weather station works only with einstein™ LabMatell and the einstein™ Tablet3 with firmware 4.33 and up.

Click on Weather station tab on the landing page.



Click on “Dashboard” to go into the weather stations’ Dashboard.

The “DASHBOARD” -is the page displayed when you open the “Weather Station”. It is composed of tiles that display the “current” state of the different sensors.



Each tile displays the default view- a clock style gauge that shows its current sensor value. When you open the “Weather Station”, it shows all the default sensors.

A - Start/Stop button

To start the measuring, click on the Start button. When you Stop it, it opens an option to save measurements in the device. When clicking on Run again, it resets all the station’s history and start again.

General Setup

B - Logger device shows the name of the logger which the device is connected to.

C – Shows the name of the experiment. When clicking Run it automatically selects the date and hour that the measurements has started.

D – Timer which displays the counted time since the experiment has started.

E - Add View – Clicking on add a view opens a list of sensors you can add to the dashboard and to the measurement.

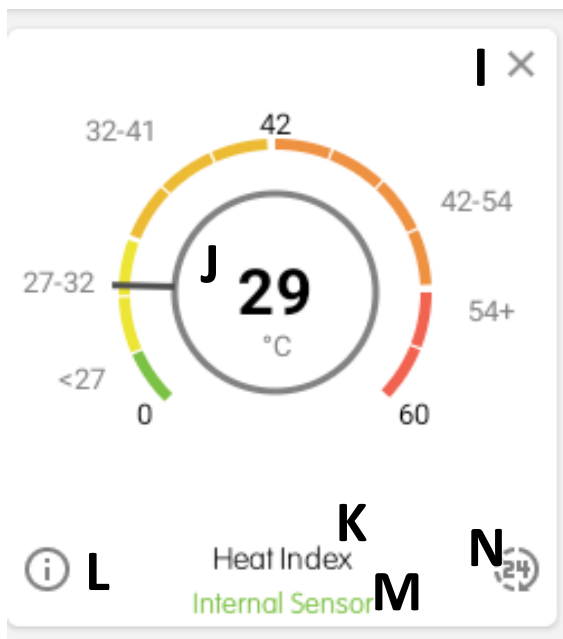
F – Saving rate – here you can change the sample rate. The default sample rate is “1 sample per minute”.

The View Mode tabs

I - Click on “GRAPHS” to the history (since the last “Run” command).

J - Click on “TABLE” to show the history in a table format.

Tiles options



I - Delete a tile - click on the X on the tile's upper right-corner

J – A clock style gauge that shows its current sensor value

K – The name of the sensor.

L– In Heat index and UVI you will also be able to find an extra information regarding the measurement

M - In case it is internal sensor, the words “internal sensor” appear in green as the example shows.

N - Show last 24 hours graph -tap on the 24 hours icon to show a graph of the last 24 hours data