Science Journal Activity

Arduino Science Journal is a free app that uses the sensors built into your smartphone to collect, display and store data. In this activity you will be using the Science Journal app to collect data for an experiment that you will design.

Before Next Class: Download the App and Learn How To Use It


Download the Science Journal app. It is available for both [Android](#) and [Apple](#) devices. Once the app is on your phone watch this [introductory video](#) which gives a brief introduction to Science Journal. By next class you are expected to arrive with the app on your phone.

Class 1: Deliberate Play

1) Open up your app and click on the plus sign in the bottom right to create a new experiment. Then click on the pencil icon in the bottom right.

2) Click on the "Sensors" icon. This will bring up all of the sensors that Science Journal can access. The image below shows a list of what sensors are available to be used.
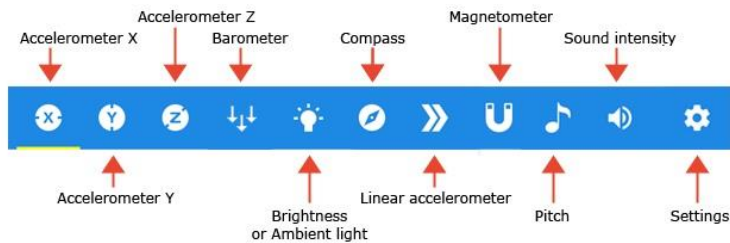

3) Click on the sound intensity sensor. You should see a screen that looks something like this:
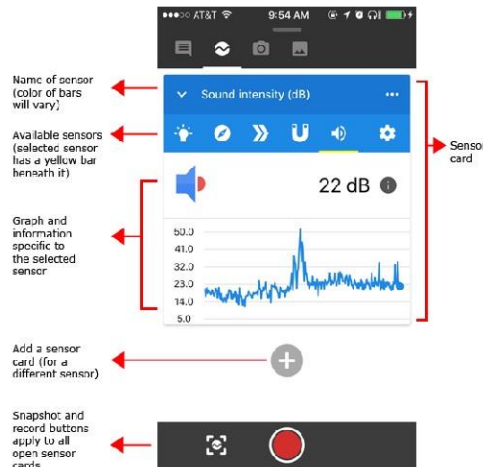
Try talking into your phone. Speak quietly, then loudly. Clap your hands. What do you notice?

4) Select the pitch sensor ♪ . Hum a high pitch note, then hum a low pitch note. What do you notice about the reading?

5) Select the linear accelerometer sensor ». Place your phone at rest on a table. Then wiggle it in any direction. Now try selecting the x, then y, then z accelerometer sensors x y z and wiggle it in different directions. What are the differences between the linear, x, y, and z sensors?

6) Select the ambient light sensor . Move the phone closer to the window or a light source. Cover your phone with your hand. Can you find where your phones light sensor is located?

7) Select the barometer sensor, which measures air pressure. Lift your phone as high as you can. Now move it to the floor. Did the pressure change? If possible, walk up or down a flight of stairs and see if you notice any difference.

8) Select the magnetometer sensor U . If you have magnets nearby bring them close to your phone. If not, try bringing your phone close to a device with an electric current running through it. What do you notice?

9) Select the compass sensor . What direction are you facing? Turn around with your phone in your hand and notice how the readings change.

10) Go back to your favourite sensor. Now touch the snapshot icon in the bottom left. Notice that it automatically stores the reading at that instant. Select the note icon and give the reading a description.

11) Touch the red record button at the bottom of the screen. You will see that the app now starts to record the graph that is generated. After a minute or so hit the stop button. You will see an image that looks something like this:
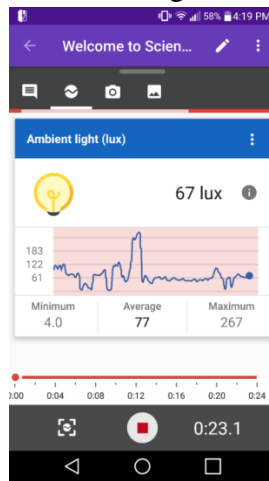
It will display the minimum, maximum and average reading over the time period that you recorded. If you now click on the graph you can play it back and add notes to any part of the graph you'd like. You can also crop and share the data. To carry out these more advance tasks please refer again to this page if you need help.

For Homework:

1) Now that you're used the app, brainstorm a list of possible scenarios to investigate. How could you use the app to measure something that is interesting to you?