Welcome to your Stroud EnviroDIY Mayfly Date Logger… pH data logger thingy! Warning can only be interfaced with Arduino software with a windows. ☹

A circuit board

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A. MicroUSB port to connect to computer

B. On/Off switch

E. MicroSD Card socket

G. Grove connectors for analog sensors, ports for pH sensors.

L. Clock battery (which is already in there)

M. 3V Battery plug in

Q. LED blinkies

R. Realtime clock

S. The processor

Everything else don’t worry about it!

Getting started. You need:

1. The Mayfly board and all the bits.

2. The bits: pH sensor, SD card, and battery.

3. Need a microUSB cable.

This link has a detailed list of methods to get started with the Mayfly, but I boiled it down below.

<https://www.envirodiy.org/mayfly-sensor-station-manual/>

Using Arduino and interfacing with the Mayfly:

1. Install Arduino IDE.

<https://www.arduino.cc/en/Main/Software>

2. Add the Mayfly board to list of available boards. File > Preferences > paste this URL (<https://raw.githubusercontent.com/EnviroDIY/Arduino_boards/master/package_EnviroDIY_index.json>) into box labeled “Additional Boards Manager URLs”

3. In the IDE. Tools > Board > Boards Manager > drop down to select “Contributed” > select “EnviroDIY ATmega Boards” > install. This adds the Mayfly board to your IDE.

4. Select the Mayfly Board. Tools > Board > “EnviroDIY Mayfly 1284P”

5. Plug in the microUSB cord into the Mayfly, then plug in the microUSB into the computer.

6. Turn the power switch on the Mayfly board to on. Give it a second to recognize and assign a COM port.

7. In the Arduino IDE. Select the COM port. Tools > Port > Port XXX

8. In the IDE, open the serial monitor (top right corner of window or Tools > Serial Monitor). Set the baud rate to 57600.

So. The Arduino software is used to load in commands for the mayfly board to do. The things that we’re gonna have it do to take pH readings at timed intervals and record the pH and time at which it took the reading. It will also record the voltage the battery has left. Then it will write all of this information onto the SD card that can be removed and plugged into a computer to get the data out of it. We’ll need to load 4 “commands” to the Mayfly board: Real Time Clock (RTC) controller, SD card controller, battery controller, pH sensor controller. I’ve broken down the scripts that do these things below.

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