**Setup:**

* Can be performed at any time if ambient brightness is consistent (e.g., no flickering). Also try and minimise the change in intensity between experiments (if this isn't possible the results are still valid, as only the difference in intensity is used for calculations).
* Insert all green pieces
* Upload the Arduino code and open the Arduino IDE's serial monitor to collect data from the experiment.

​

**Method:**

1. Leave it running in the background for a few hours (keeping the serial monitor open) and it will automatically collect the data
2. Copy the terminal output and save the file as “green\_pieces.csv”
3. then repeat steps 1-2 for the red and blue pieces saving as “red\_and\_blue\_pieces.csv”
4. run "splitting\_testing\_and\_training\_data.py" to slit the original data into training and testing data
5. run "training\_colour\_prediction.py to display the data as a 3D graph and output the expected reflectivity, by piece colour, to the terminal window
6. Finally, copy this output into testing\_colour\_prediction.py" to calculate the accuracy of the program