

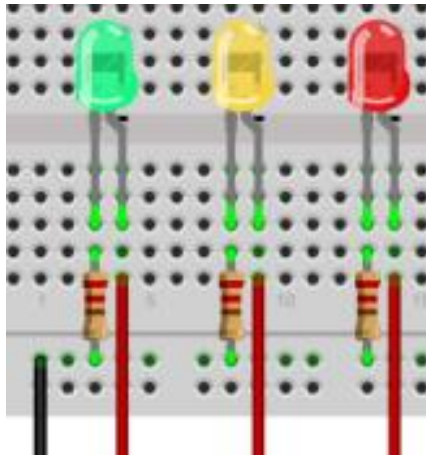
Build a set of traffic lights using your bread boarding and microcontroller skills. Show your instructor when the lab is complete. The lab will include a written report with the following information:

Written Report

- Title page.
- Table of contents.
- Background research.
- Materials list.
- Experimental procedure including a copy of the code.
- Wiring diagram (you may take a picture of your breadboard/Arduino).
- Conclusions.
- Ideas for future projects. One idea should be fully developed into a lab.
- Bibliography.

Circuit

Wire the breadboard as shown below. Use your previous knowledge to wire the switch.



The following sequence must be programmed into the Arduino.

Code:

Pressing the button will start the sequence.

Sequence 1 – Red on for 3 sec followed by Green on for 3 sec followed by Yellow on for 2 sec. Repeat.

Pressing the button will switch to sequence 2.

Sequence 2 – Red and green flashed alternately for 0.5 sec each for 5 sec followed by Yellow on for 5 sec. Stop

Pressing the button will switch to sequence 3.

Sequence 3 – Red and Green on for 3 sec followed by Yellow flashing on and off at 0.25 sec rate for 5 sec. Repeat.

Pressing the button will switch to sequence 4.

Sequence 4 – All lights flash alternately at a rate of 0.5 sec for 5 sec duration followed by Green on for 3 sec. Stop.