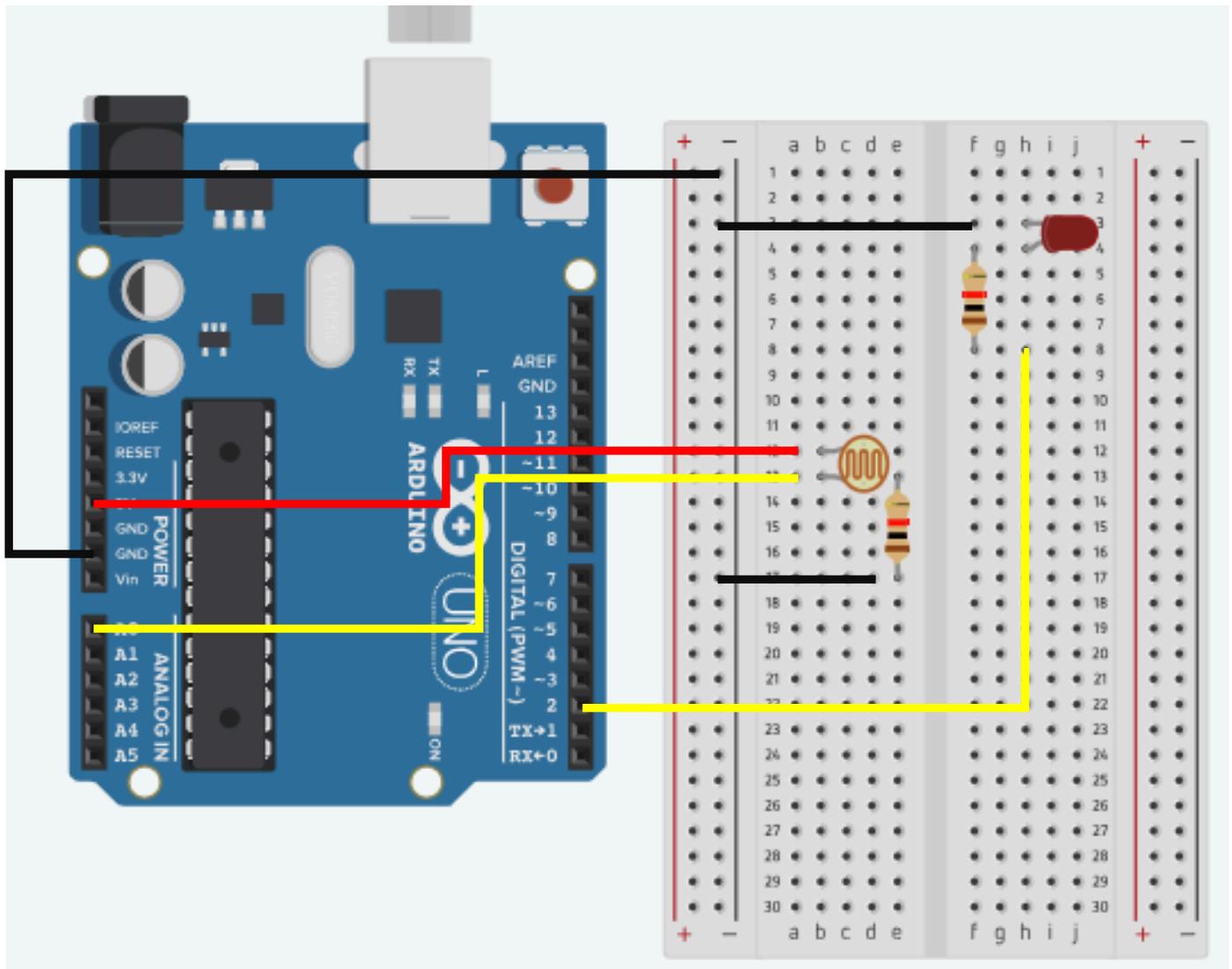


Making a Smart Light - The Circuit

Using the Arduino kit provided create the following circuit.
The colours of the wires does not matter as long as they are in the correct position.



Technology, Ethics and The Future

Making a Smart Light - The Code

Copy the following code into the Arduino Development Environment.

```
int sensorPin = 0;
int lightPin = 2;

int threshold = 400;

void setup() {

    Serial.begin(9600);
    pinMode(lightPin, OUTPUT);

}

void loop() {
    int sensorValue = analogRead(sensorPin);
    Serial.println(sensorValue, DEC);

    if(sensorValue < threshold){
        digitalWrite(lightPin, HIGH);
    }

    if (sensorValue > threshold){
        digitalWrite(lightPin, LOW);
    }

}
```

Technology, Ethics and The Future

Bringing it together

Once you have finished you'll need to verify the code is correct in order to upload it to the Arduino. If when you click **verify** any errors pop up then fix these before continuing.

N e x t    connect the Arduino to the laptop via the USB cable. Then select the correct port using **Tools > Port > ArduinoUno**. This will typically be called something like **dev/cu.usbmodem1401** (Arduino/Genuino Uno).

Now you can click **download**, to put the code onto the Arduino.

Now test your smart light works! Try taking the circuit into a room and turning the lights off - your smart light should turn on! When the room lights are put back on then your smart light should turn off!

If you have any issues check the monitor **Tools > Serial Monitor** and see whether the sensor is printing out values. These should change based on the amount of light it receives. **You may have to change your threshold** variable in order for the light to turn on when you expect it to. E.g. if when you cover the sensor the value printed to the serial monitor is ~500 then perhaps change your