

Arduino Project 2: Sensor Light

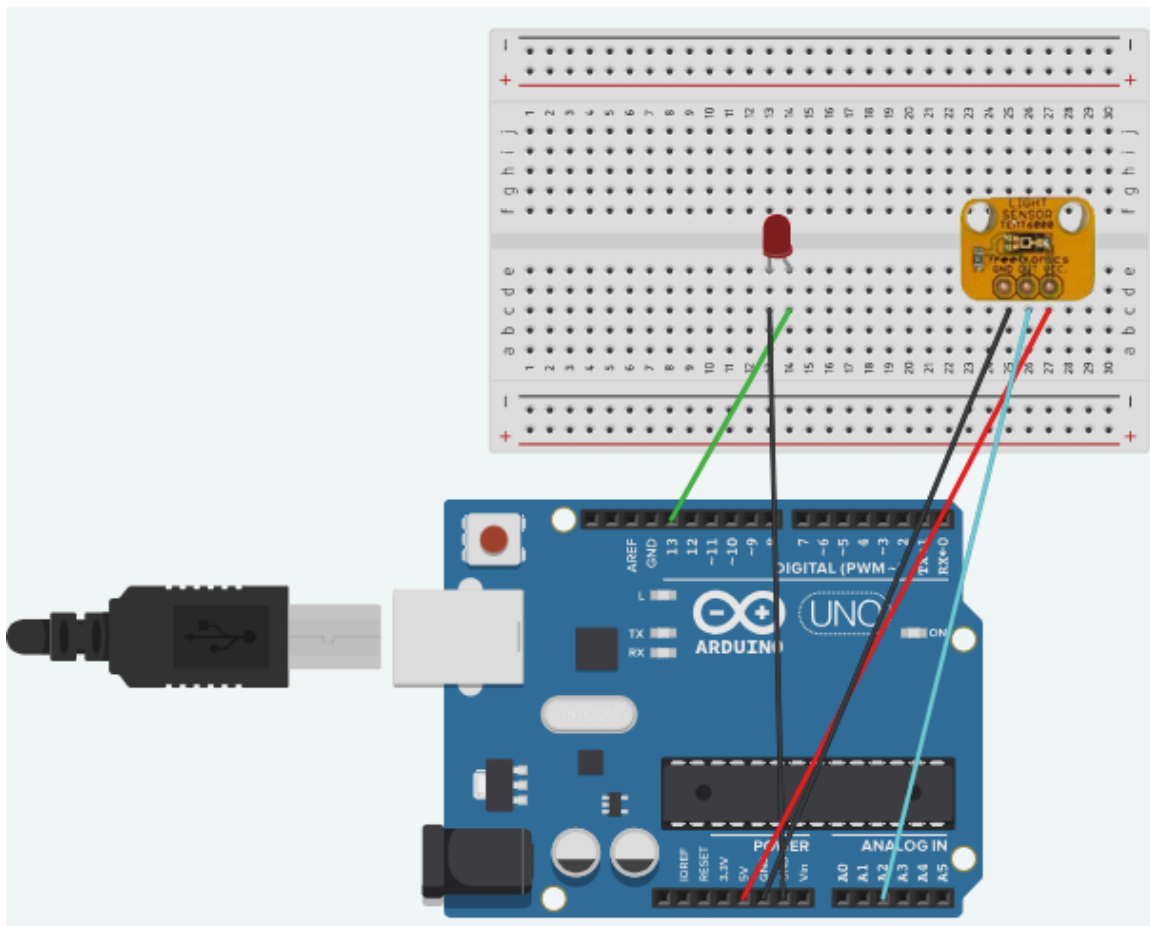
The project

This project involves using a light sensor to turn an LED light on only when it is dark. You can adjust the values in the code depending on how dark you want it to be before the light turns on. This could be used as a night light or outdoor garden light. You could also connect it to a solar panel unit.

What you need:

- 1 x Arduino Uno or compatible board
- 1 x Freetronics Light Sensor (or similar)
- 1 x LED (red, green, or any other colour)
- 1 x Solderless breadboard
- 5 x jumper wires

Diagram



Code

Use the Arduino IDE to write this code, verify it and then upload it to the Arduino board.

```
int led = 13;
int lightReading = 0;

void setup () {
  pinMode(led, OUTPUT);
  Serial.begin(9600);
}

void loop () {
  lightReading = analogRead(A2);
  Serial.println(lightReading, DEC);
  if (lightReading < 50) // change this value to suit light conditions. Ranges from 0 (very dark) to 1023 (very bright).
  {
    digitalWrite(led, HIGH); // turns the light on
    Serial.println("light on");
  }
  else
  {
    digitalWrite(led, LOW); // turns the light off
    Serial.println("light off");
  }
  // Delay of 1000ms before checking light level again
  delay(1000);
}
```

In the Arduino IDE, click on **Tools > Serial Monitor** to see the light readings (while the Arduino is connected to the computer via a USB cable).

