

# Arduino: Photoresistor

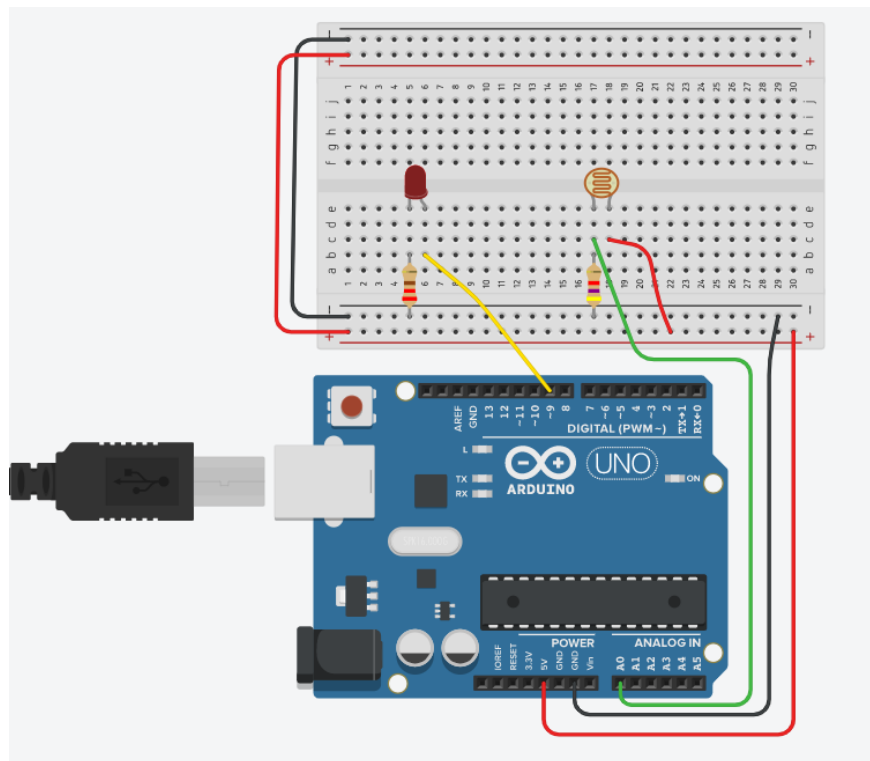
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Photoresistor: is an active component that decreases resistance with respect to receiving luminosity on the component's sensitive surface. The resistance of a photoresistor decreases with increase in incident light intensity; in other words, it exhibits photoconductivity. Applications as camera light meters, clock radios, alarm devices (as the detector for a light beam), nightlights, outdoor clocks, solar street lamps, and solar road studs, etc.

1. Navigate to TinkerCAD > Create the following circuit > Circuit > Create a New Circuit > Rename to Photoresistor > Create the following Circuit



2. Write the following code

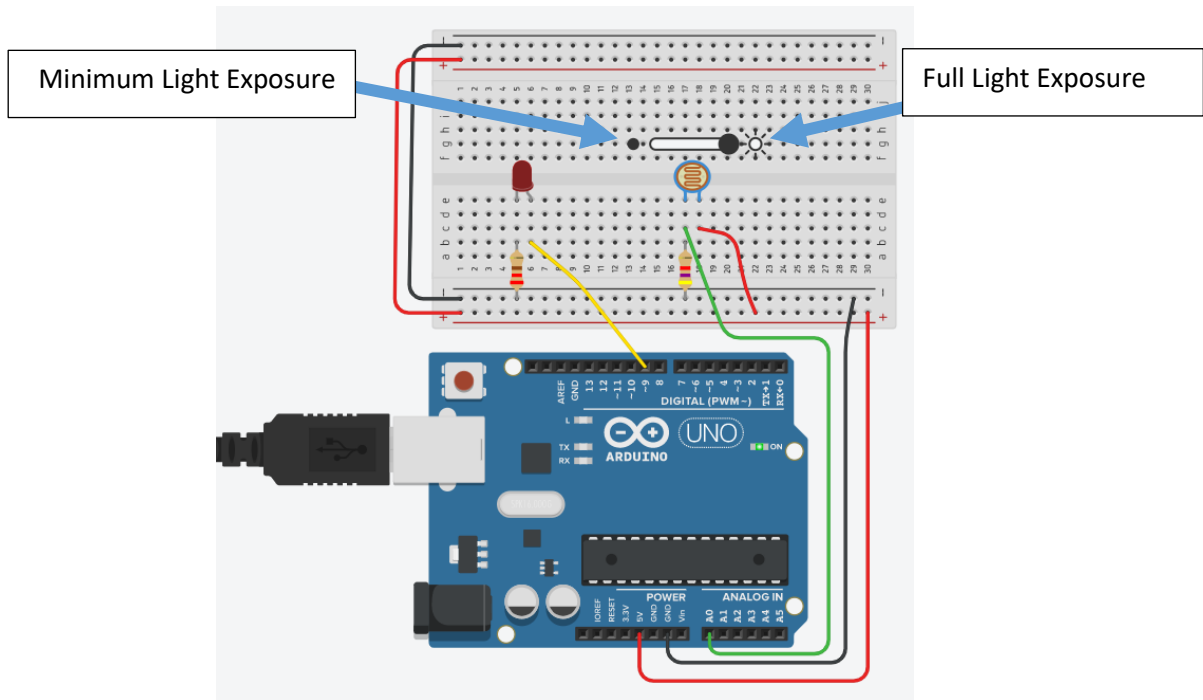
```
int sensorValue = 0;

void setup()
{
  pinMode(A0, INPUT);
  Serial.begin(9600);

  pinMode(9, OUTPUT);
}

void loop()
{
  // read the value from the sensor
  sensorValue = analogRead(A0);
  // print the sensor reading so you know its range
  Serial.println(sensorValue);
  delay(100); // Wait for 100 millisecond(s)
}
```

3. Run Simulation > Operate Photoresistor: Click on the Photoresistor > Slide bar will appear > Slide bar left and right to determine how much light is applied to the photoresistor



## Assignment

Add the Following Electrical Components and modify the code to meet the various scenarios

1. Servo Motor
  - a. Photoresistor Settings and Servo Motor Angles
    - i. Photoresistor Set to Min (26) = Servo Motor at 0 degree
    - ii. Photoresistor Set greater than 800 = Servo Motor at 180 degree
    - iii. Photoresistor placed in between Min/Max = Servo Motor set angle equal to Photoresistor
2. RGB LED (remove Red LED)
  - a. Colors
    - i. Green: Photoresistor is less than 300
    - ii. Yellow: Photoresistor is between 300-600
    - iii. Red: Photoresistor is greater than 600
      1. Servo Motor will stop operating if in the Red > will begin moving again when photoresistor goes below 800

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