Name:
Date:

Circuit #6a Photo Resistor

1.

How is this circuit, or a circuit like it, used in everyday life? Provide at least three examples.

Can you turn your LED up and down using the photoresistor? Great.

2.

In the code you uploaded to your Arduino board change the line:

lightLevel = map(lightLevel, 0, 900, 0, 255);
to: lightLevel = map(lightLevel, 0, 900, 255, 0);

3.

How does this change the way your circuit acts?

4.

Leave the code above in and turn your photoresistor so that it faces the LED. Turn the lights off. Does your LED turn all the way off? Why is this?

5.

What two lines do you need to add to your code to see what the output values from the photoresistor are and where do you need to add them?

6.

Who invented the photoresistor, or photocell, and where was it invented?

7.

There are three reasons the code below will not work, find all three errors and change or add the necessary code so it does work.

```
int lightPin = 0;
int ledPin = 8;

void setup()
{
  pinMode(ledPin, OUTPUT)
}

void loop()

 int lightLevel = analogRead(lightPin);
 lightLevel = map(lightLevel, 0, 900, 0, 255);
 lightLevel = constrain(lightLevel, 0, 255);
 analogWrite(ledPin, lightLevel);
}
```

8.

From the code above copy the command you would need to change if you wanted the LED to light up only when the photoresistor value is above 50%.

9.

Write below what you would need to change the command to so that it functions as described above.

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10.

Photoresistors are great for light control, what else would you like to control with them? You can turn other circuits on or off by turning on your lights or opening your blinds. List at least three circuits.

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