

## CODE TO NOTE

### IF ELSE STATEMENTS:

```
if(logic statement){  
  //run if true  
}  
else{  
  //run if false  
}
```

The **if else** statement lets your code react to the world by running one set of code when the logic statement in the round brackets is true and another set of code when the logic statement is false. For example, this sketch uses an **if** statement to turn the LED on when it is dark, and **else** statement to turn the LED off when it is light.

### LOGICAL OPERATORS:

```
(photoResistor <  
threshold)
```

Programmers use logic statements to translate things that happen in the real world into code. Logic statements use logical operators like 'equal to' `==`, 'greater than' `>` and 'less than' `<`, to make comparisons. When the comparison is true (e.g., `4 < 5`), then the logic statement is true. When the comparison is false (e.g., `5 < 4`) then the logic statement is false. This example is asking whether the variable **photoresistor** is less than the variable **threshold**.

## CODING CHALLENGE

**RESPONSE PATTERN:** Right now your **if** statement turns the LED on when it gets dark, but you can also use the light sensor like a no-touch button. Try using `digitalWrite()` and `delay()` to make the LED blink a pattern when the light level drops, then calibrate the threshold variable in the code so that the blink pattern triggers when you wave your hand over the sensor.

**REPLACE 10KΩ RESISTOR WITH AN LED:** Alter the circuit by replacing the 10KΩ resistor with an LED (the negative leg should connect to GND). Now what happens when you place your finger over the photoresistor? This is a great way to see Ohm's law in action by visualizing the effect of the change in resistance on the current flowing through the LED.