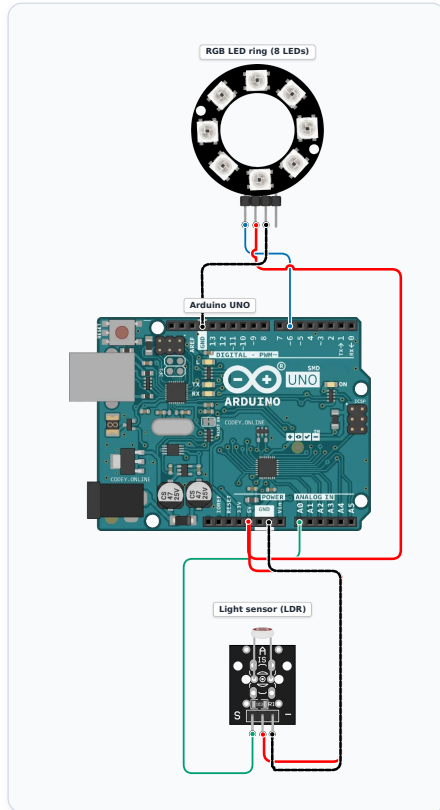


★ ★ Advanced beginner ⌚ 15 minutes

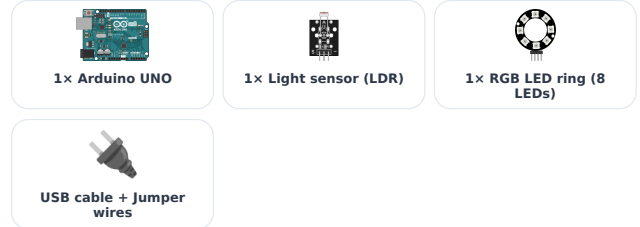
Night Light

You make a smart night light. When it gets dark, the LED ring glows softly. When it gets light, it turns off again.

Wiring diagram



What do you need?



This is how you build it

1. Connect the light sensor: S to A0, + to 5V and – to GND.
2. Connect the LED ring: DI to pin 6, 5V to 5V and GND to GND.
3. Open the serial monitor and look at the number you see in the light and in the dark. Change `DARK_LIMIT` to match.

The code

```
// Night light
// Is it getting dark? Then the LED ring glows softly. Is it getting light? Then
// it turns off.

#include <Adafruit_NeoPixel.h>

const int LIGHT_PIN = A0; // S of the light sensor on A0
const int RING_PIN = 6; // DI of the LED ring on pin 6
const int LED_COUNT = 8;

// At this value, we call it "dark". Look in the serial monitor which number you
// see
// in light and in the dark, and put a number in between here.
const int DARK_LIMIT = 500;

Adafruit_NeoPixel ring(LED_COUNT, RING_PIN, NEO_GRB + NEO_KHZ800);

void setup() {
  Serial.begin(9600);
  ring.begin();
  ring.setBrightness(60);
  ring.show();
}

void loop() {
  int light = analogRead(LIGHT_PIN); // A number from 0 to 1023
  Serial.print(F("Light sensor: "));
  Serial.println(light);

  // With this sensor, the number gets higher when it gets darker.
  // Does it work the other way round for you? Then change > to <.
  bool dark = light > DARK_LIMIT;

  for (int i = 0; i < LED_COUNT; i++) {
    if (dark) {
      ring.setPixelColor(i, ring.Color(255, 140, 40)); // Warm yellow light
    } else {
      ring.setPixelColor(i, 0); // Off
    }
  }
  ring.show();
  delay(200);
}
```

What does the code do?

- The light sensor is on A0. `analogRead()` gives a number from 0 to 1023.
- Is the number higher than `DARK_LIMIT`? Then we call it dark.
- In the dark, we give all the lights a warm yellow color. Otherwise they turn off.

Try this...

- Let the light slowly get brighter as it gets darker
- Let the color slowly change, like a relaxing mood light
- Let the light turn off by itself after 1 minute

🚀 Build this project with Codey: open codey.online/starter-kits/uno/projects/night-light and click MAKE THIS. Then the code and the wiring diagram are ready right away.