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| Cambridge Raspberry Jam | |
| Name |  |
| Age |  |
| Parent |  |

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| Beginners worksheet #8 | |
| Project | Light Sensor |
| Description | In this project you will learn how to wire and program a light sensor and see how bright it is in your room. |

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| Tools required | | |
| □ Raspberry Pi SD card | □ 1 X Red LED | □ 8 x m/f jumper wires |
| □ Keyboard | □ 1 X Blue LED | □ 5 m/m jumper wire |
| □ Monitor + Cable | □ 2 x 330 Ω resistors | □ Temperature sensor (DS18B20) |
| □ Power supply | □ 2 4.7k Ω resistors | □ LDR Light Dependent resistor |
| □ Breadboard | □ Buzzer □ Button | □ 1uf resistor |
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| D:\1_Personal\Rasberry Pi videos\Raw\10x10\Breadboard diagrams\8.png | | |

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| Code |
| TURN ON THE LEDS “8\_ldr.py”  #!/usr/bin/env python  import os  import datetime  import time  import RPi.GPIO as GPIO  GPIO.setwarnings(False)  DEBUG = 1  GPIO.setmode(GPIO.BCM)    def RCtime (RCpin):  reading = 0  GPIO.setup(RCpin, GPIO.OUT)  GPIO.output(RCpin, GPIO.LOW)  time.sleep(.1)    GPIO.setup(RCpin, GPIO.IN)  # This takes about 1 millisecond per loop cycle  while (GPIO.input(RCpin) == GPIO.LOW):  reading += 1  return reading    while True:  GetDateTime = datetime.datetime.now().strftime("%Y-%m-%d %H:%M:%S")  LDRReading = RCtime(3)  print RCtime(3)  # Open a file  fo = open("/home/pi/10x10/foo.txt", "wb")  fo.write (GetDateTime)  LDRReading = str(LDRReading)  fo.write ("\n")  fo.write (LDRReading)    # Close opend file  fo.close()  time.sleep(1) |
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| 1. Change directory “cd Desktop/gpio\_python\_code/”  2. Create file “touch 8\_ldr.py” then “touch foo.txt”  3. Enter the code above code  Once complete “Ctrl + x” then “y” then “enter”  4. To run the python code “sudo python 8\_ldr.py” << See what the light levels in the room are.  5. The check the file “more foo.txt” you can see your results. |