Resources

[Http://outreach.science.tamu.edu/tso/2019/texaseventguidelines/detector%20guidelines%202019\_with%20erick's%20edits\_5\_14%20(00000002).pdf](http://outreach.science.tamu.edu/tso/2019/texaseventguidelines/detector%20guidelines%202019_with%20erick's%20edits_5_14%20(00000002).pdf)

[Https://pimylifeup.com/raspberry-pi-light-sensor/](https://pimylifeup.com/raspberry-pi-light-sensor/)

[Https://pimylifeup.com/raspberry-pi-motion-sensor/](https://pimylifeup.com/raspberry-pi-motion-sensor/)

<https://tutorials-raspberrypi.com/raspberry-pi-temperature-sensor-1wire-ds18b20/>

<http://www.circuitbasics.com/raspberry-pi-ds18b20-temperature-sensor-tutorial/>

<https://www.raspberrypi.org/forums/viewtopic.php?t=198192>

$63.73

Amazon Wishlist

Necessary

* Breakaway Pins
  + [Https://www.amazon.com/sukeq-break-away-2x20-pin-connector-raspberry/dp/b07crwnfrt/ref=sr\_1\_19?keywords=raspberry+pi+0+pins&qid=1553036176&s=gateway&sr=8-19](https://www.amazon.com/sukeq-break-away-2x20-pin-connector-raspberry/dp/b07crwnfrt/ref=sr_1_19?keywords=raspberry+pi+0+pins&qid=1553036176&s=gateway&sr=8-19)
* Breadboard Kit
  + [Https://www.amazon.com/eboot-400-point-solderless-breadboard-flexible/dp/b071d7v9hd/ref=sr\_1\_17?keywords=breadboard&linkcode=ll2&linkid=82fcb14576272d1280c9e37c9f77e6f8&qid=1553037454&s=industrial&sr=1-17&tag=pimylifeup-20](https://www.amazon.com/eboot-400-point-solderless-breadboard-flexible/dp/b071d7v9hd/ref=sr_1_17?keywords=breadboard&linkcode=ll2&linkid=82fcb14576272d1280c9e37c9f77e6f8&qid=1553037454&s=industrial&sr=1-17&tag=pimylifeup-20)

Light Sensor

* Capacitor
  + [Https://www.amazon.com/projects-b-0002-d01-radial-electrolytic-capacitor/dp/b00e6pdete/ref=as\_li\_ss\_tl?s=industrial&ie=utf8&qid=1533645625&sr=1-4&keywords=1uf+capacitor&linkcode=ll1&tag=pimylifeup-20&linkid=1655cb6474222479bfc1464774581136&language=en\_us](https://www.amazon.com/projects-b-0002-d01-radial-electrolytic-capacitor/dp/b00e6pdete/ref=as_li_ss_tl?s=industrial&ie=utf8&qid=1533645625&sr=1-4&keywords=1uf+capacitor&linkcode=ll1&tag=pimylifeup-20&linkid=1655cb6474222479bfc1464774581136&language=en_us)
* Photoresistor
  + [Https://www.amazon.com/gp/product/b016d737y4/ref=as\_li\_ss\_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=918ac7f532e4dc24704992dccfa92561&language=en\_us](https://www.amazon.com/gp/product/b016d737y4/ref=as_li_ss_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=918ac7f532e4dc24704992dccfa92561&language=en_us)

Motion Sensor

* Speaker
  + [Https://www.amazon.com/cylewet-mainboard-computer-internal-speaker/dp/b01mr1a4nv/ref=sr\_1\_1\_sspa?keywords=piezo+buzzer&linkcode=ll2&linkid=40a1426f7dac4f59d535e46f13746d04&qid=1553040830&s=electronics&sr=1-1-spons&tag=pimylifeup-20&psc=1](https://www.amazon.com/cylewet-mainboard-computer-internal-speaker/dp/b01mr1a4nv/ref=sr_1_1_sspa?keywords=piezo+buzzer&linkcode=ll2&linkid=40a1426f7dac4f59d535e46f13746d04&qid=1553040830&s=electronics&sr=1-1-spons&tag=pimylifeup-20&psc=1)
* Sensor
  + [Https://www.amazon.com/gp/product/b00joztac6/ref=as\_li\_ss\_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=b87ee3a54d06564d114c5e17cf9be49b&language=en\_us](https://www.amazon.com/gp/product/b00joztac6/ref=as_li_ss_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=b87ee3a54d06564d114c5e17cf9be49b&language=en_us)
* Resistors
  + [Https://www.amazon.com/100-ohm-resistors-watt-pieces/dp/b07jjqy958/ref=sr\_1\_4?crid=3qhczvo4wo7f6&keywords=100+ohm+resistor&linkcode=ll2&linkid=a57f33ac0b17f9bbab33897cd9fd06ae&qid=1553040804&s=industrial&sprefix=100+ohm+re%2cindustrial%2c536&sr=1-4&tag=pimylifeup-20](https://www.amazon.com/100-ohm-resistors-watt-pieces/dp/b07jjqy958/ref=sr_1_4?crid=3qhczvo4wo7f6&keywords=100+ohm+resistor&linkcode=ll2&linkid=a57f33ac0b17f9bbab33897cd9fd06ae&qid=1553040804&s=industrial&sprefix=100+ohm+re%2cindustrial%2c536&sr=1-4&tag=pimylifeup-20)

Optional

* Breakout To Breadboard
  + [Https://www.amazon.com/gp/product/b00og4x0dk/ref=as\_li\_ss\_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=cb7fa3607511531341759cbf4bf004e0](https://www.amazon.com/gp/product/b00og4x0dk/ref=as_li_ss_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=cb7fa3607511531341759cbf4bf004e0)
* Wires
  + [Https://www.amazon.com/gp/product/b005tzj0am/ref=as\_li\_ss\_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=fbfb8007271947f6b9a65f23591d2b64](https://www.amazon.com/gp/product/b005tzj0am/ref=as_li_ss_tl?ie=utf8&linkcode=ll1&tag=pimylifeup-20&linkid=fbfb8007271947f6b9a65f23591d2b64)

code:

#! /bin/bash

# Read Temperature

tempread=`cat /sys/bus/w1/devices/10-000802b4ba0e/w1\_slave`

# Format

temp=`echo "scale=2; "\`echo ${tempread##\*=}\`" / 1000" | bc`

# Output

echo "The measured temperature is " $temp "°C"

\_\_\_\_\_\_\_\_\_

<https://www.howtoforge.com/tutorial/howto-install-raspbian-on-raspberry-pi/>