Final

+ 3 force measur.
Horizontal
Vintical
Lateral

running -> Power so speed to the Wtts produced

other factors:
body wght
metabolic flex.
shoes.

I need
↳ Potentiometer
↳ jumper wires
↳ Arduino
↳ Box
↳ maybe a screen

↳ A Bant/Strap

Potentiometer

What is the best way to set up a potentiometer to run an 18 V bat motor with these parameters?

Asked 6 years, 5 months ago Modified 6 years, 5 months ago Viewed 998 times

-1

Operating voltage:	6 – 12,6 V DC
Power input:	3 W
Starting current:	max. 2,5 A for max. 200 ms

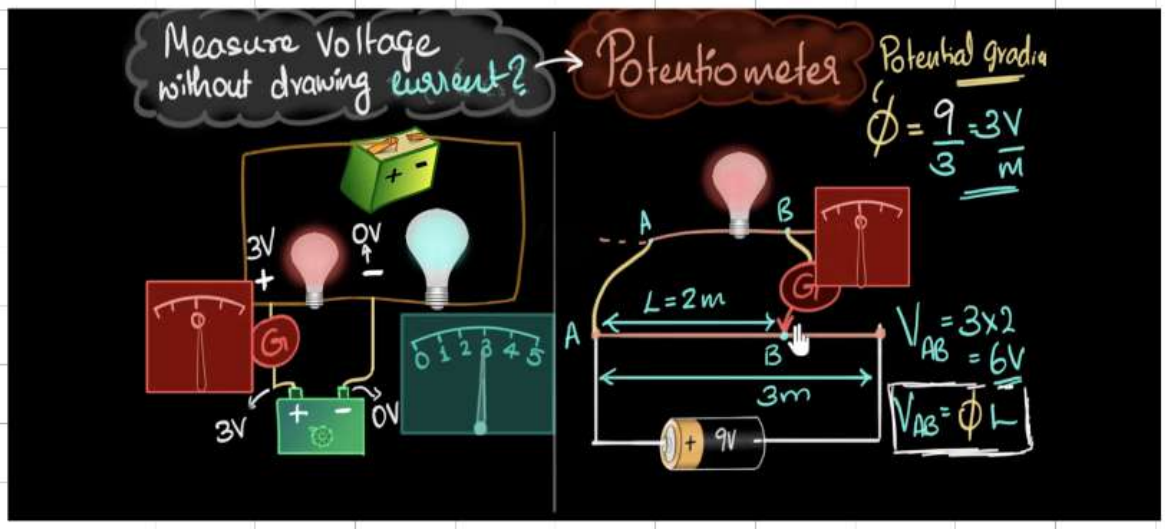
These are the values on the tech sheet for the small motor I picked up. I just want to be able to have an 18 V battery power the motor, but I would like to regulate it, and would be running it around 9-10 volts on average, but would like to vary it from 6-12 volts. What is going to be my best option, without having to purchase and test several potentiometers? Or is that basically what I have to do? I don't want to resist the current too much and waste the power, I also don't want the potentiometer to heat up or fail...

-> measure current

Potentiometer

→ risistor

→ 3 terminals
1 & 2 -> connect to the end of a resistive element
3 -> an adjustable wiber
↓
the position of it sets the resistive divider ratio



To Do:

→ Circuit

→ Interface on P5JS

- (someone jumping) or (Lines & Curves to make Art)

- Start Button
- Q related to weight & weight to calc. calories burnt

Accelemeter
⇓
activity moneter.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3758644/

⇓

according to this artical

↳ Best Placed on

upper arm ||
Lower arm \
Hip ///
Foot /
thigh ///
rest \
Chest ||
weist ///
lower Back \
ankle \
ear /

Hip & weist are v. close so let's put it somewhere there.

To make design good. => Box with all the circuit button attached to a table → only thing visible is

long wire with acc. attached to weist.

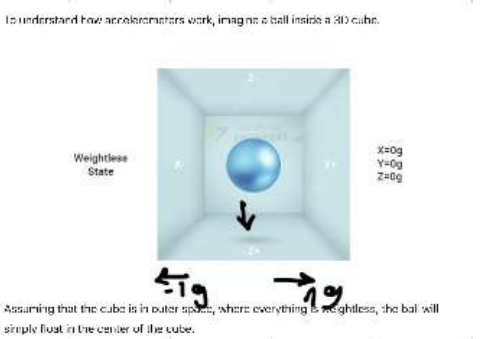
accelometer
Gyroscope → Uses earth Gravity to deter.
Oriantation
velocity

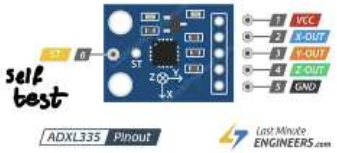
Position & oriantation of obj
acceleration

https://www.youtube.com/watch?v=eqZgxR6eRjo

ADXL335 accelometer

acceleration
↳ in form of gravity 1g
if ball rests on z\ pulled to the floor.





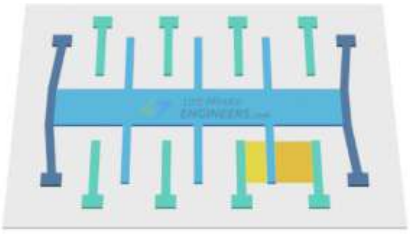
VCC supplies power to the module. Connect it to the 5V output of your Arduino.

X-Out outputs an analog voltage proportional to acceleration along the X axis.

Y-Out outputs an analog voltage proportional to acceleration along the Y axis.

Z-Out outputs analog voltage proportional to acceleration along the Z axis.

GND is the ground pin.



Suspended mass Fixed plates Silicon wafer

Polysilicon springs Change in capacitance

This structure is suspended by polysilicon springs. It allows the structure to deflect when accelerated along the X, Y, and/or Z axes.

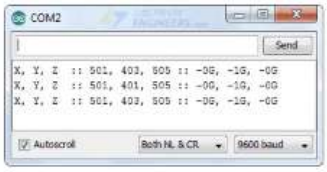
As a result of deflection, the capacitance between fixed plates and plates attached to the suspended structure changes. This change in capacitance is proportional to the acceleration along that axis.

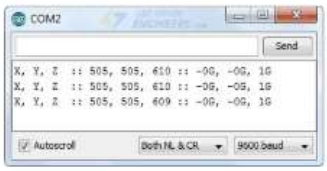
To connect the Light-Switch

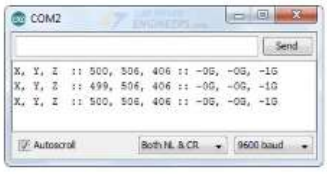
⇓

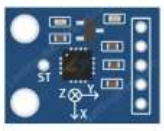
5V → Red.

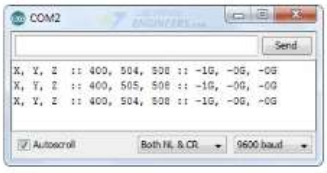
Resistor

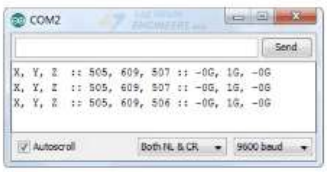


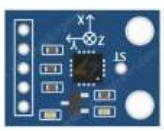


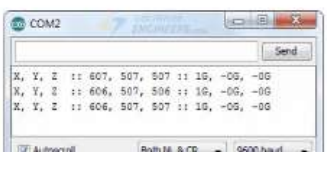












Code Communication

① Interface appears on P5JS

② Once the switch is pressed
(arduino sends to P5)
(P5 recieves)

Ⓐ Switch lights up

Ⓑ (arduino starts reading data & Sending it to P5JS)

(P5JS Recieves the data and moves the sprit sheet)

Ⓒ A Counter / time starts in P5JS

Ⓓ Music is played in P5JS

③ Switch pressed again.
(arduino sends to P5JS)
(P5 recieves)

Ⓐ Arduino stops sending to P5JS the data &
P5 stops moving the Sprit sheet

Ⓑ Counter Stops

(B) P5 calculates calo. burned/time estemaite

(C) Music Stops.

(D) Play again appears
click switch to start.

Problems

1st thing Switch / LED

↳ I was not using the Input-pullup for the LED

↳ For the specific button I am using I had to switch HiGh to low so it works. & then control the LED-state.

Also

acceleration to Speed

⇓

assume its linear velocity & use $V = w + at$

$\overline{b}$

zvalue.

I only wanted to use data when LED is On so I had to say that in P5JS

also I had to remove str(xval) to read data

I was using an array of 4 & Forgot that 0 counts so it,

0 1 2 3 no 1 2 3 4

which also created a problem in my code.

function
reset
↳ Data ෴ Back to intial State

acceleration $\frac{V - u}{t} = a$ — Intial velocity

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*Declare State

⇓

intial Value = 0

⇓

to keep checking data

LED On → mouse click ↳

1

Save Data

LED off →

To try & control different levels.