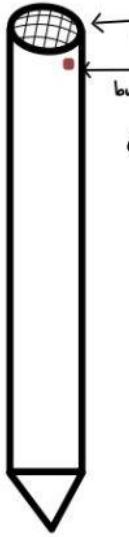


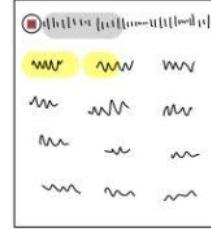
# INVENTIONS 1

## Recording Pen & App

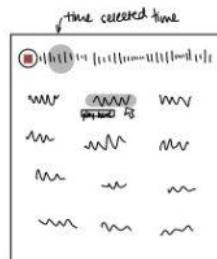


button can be multipurposeful  
ie. single tap  $\Rightarrow$  to record  
double tap  $\Rightarrow$  delete stored material)

The recording should be synchronized  
w/ the students writing via  
bluetooth



It could highlight text  
as recording is played



an app that allows  
the features to  
be easily accessible

app allows basic note-taking  
skills as well

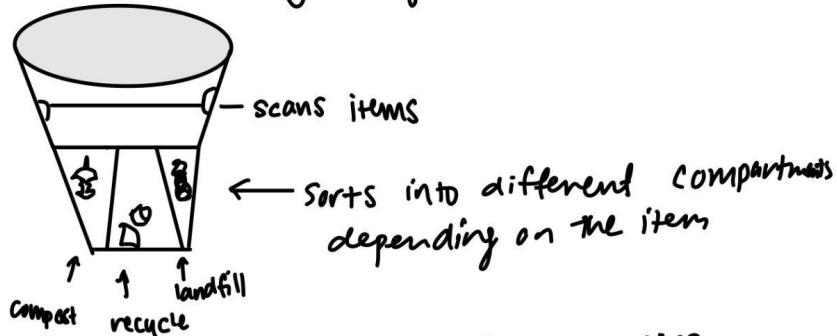
should allow student to  
click on a text section  
and replay from that  
section.

04/10/24

A handwritten signature or initials in cursive script.

# INVENTIONS 1

garbage organizer

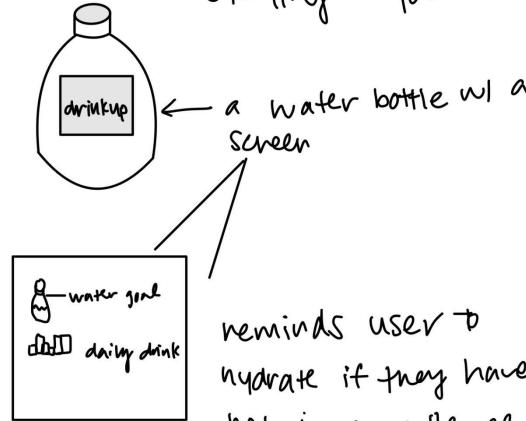


to reduce inaccuracies  
w/ people putting their  
items in the wrong  
spots

04/11/23

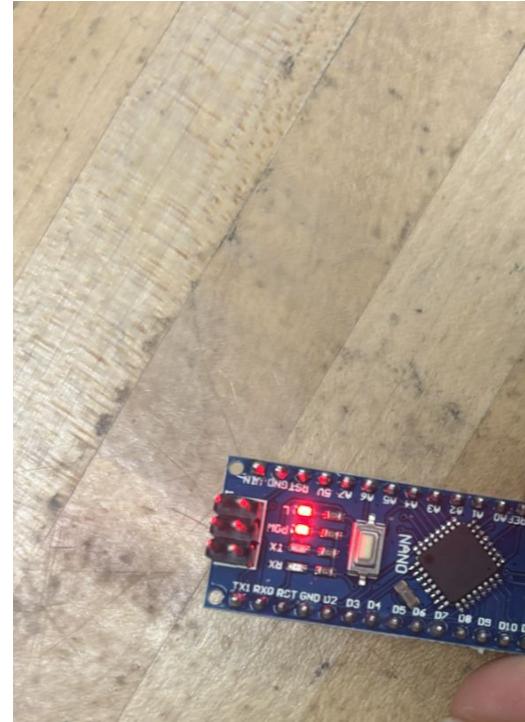
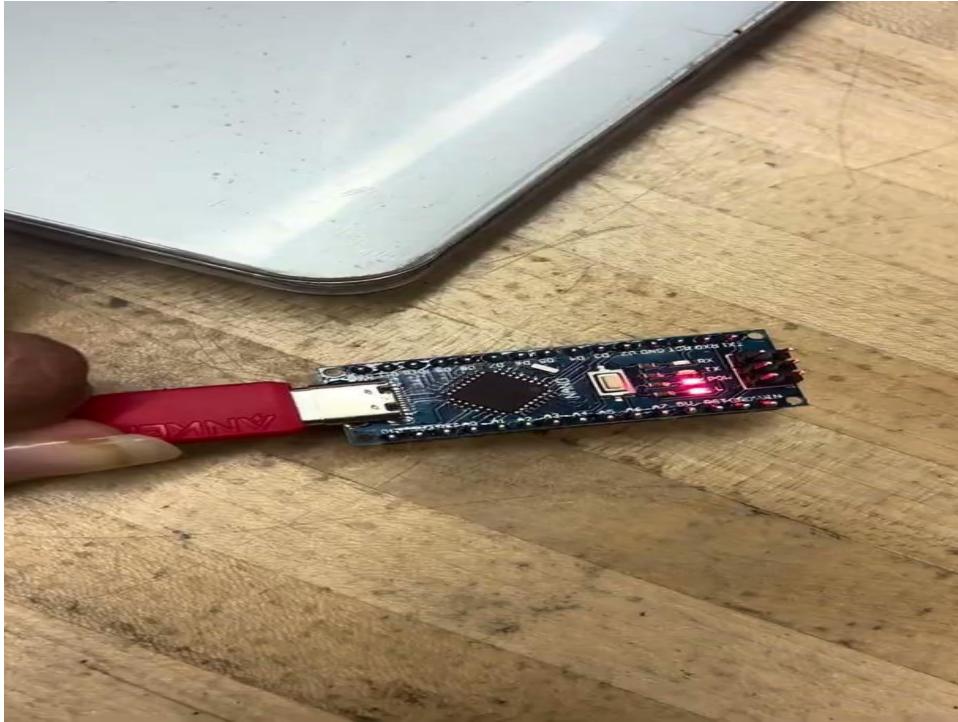
Shreyas

staying hydrated



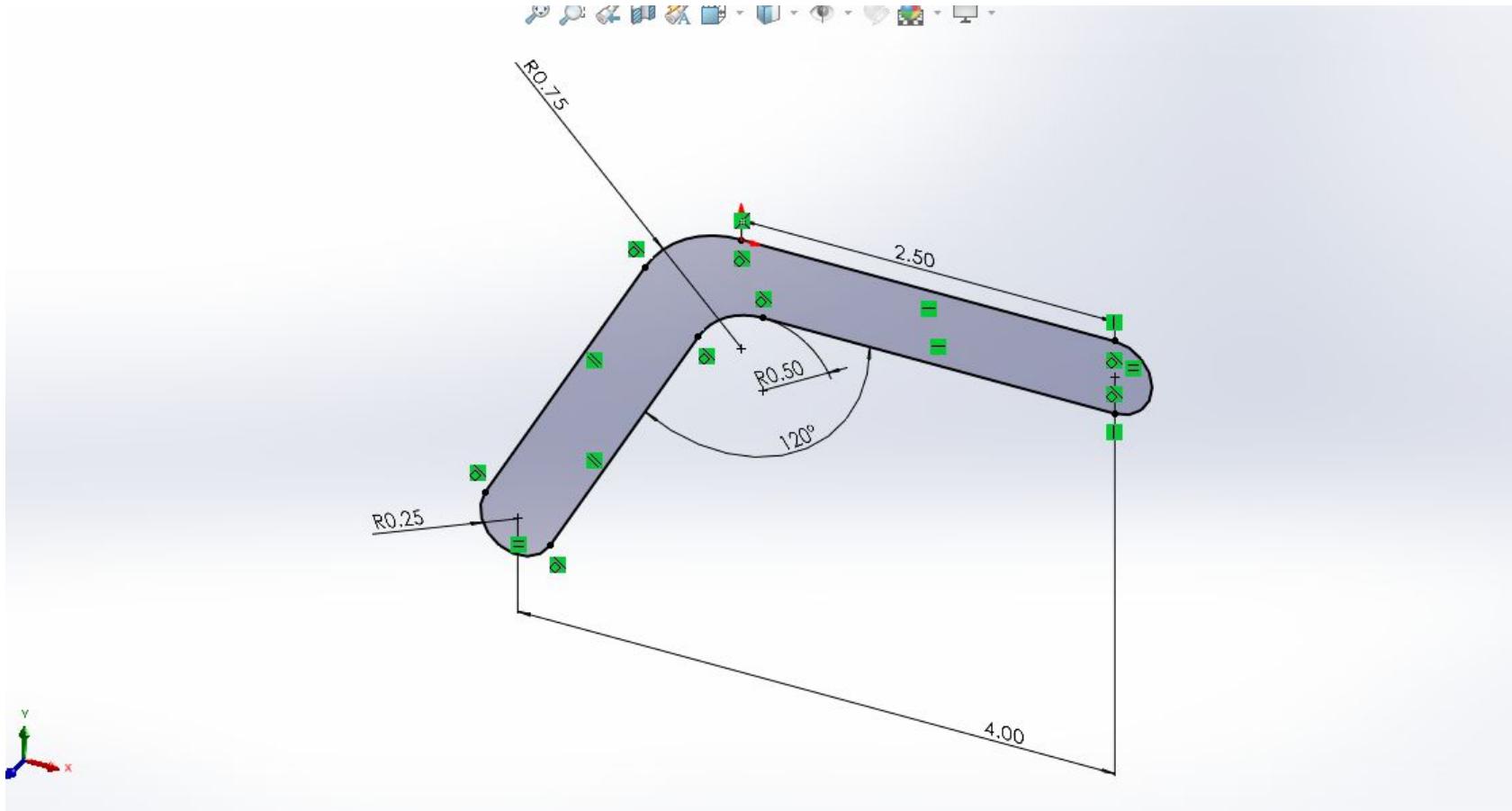
04/11/23,  
Shreyas

# ELECTRONIC ASSIGNMENT 1



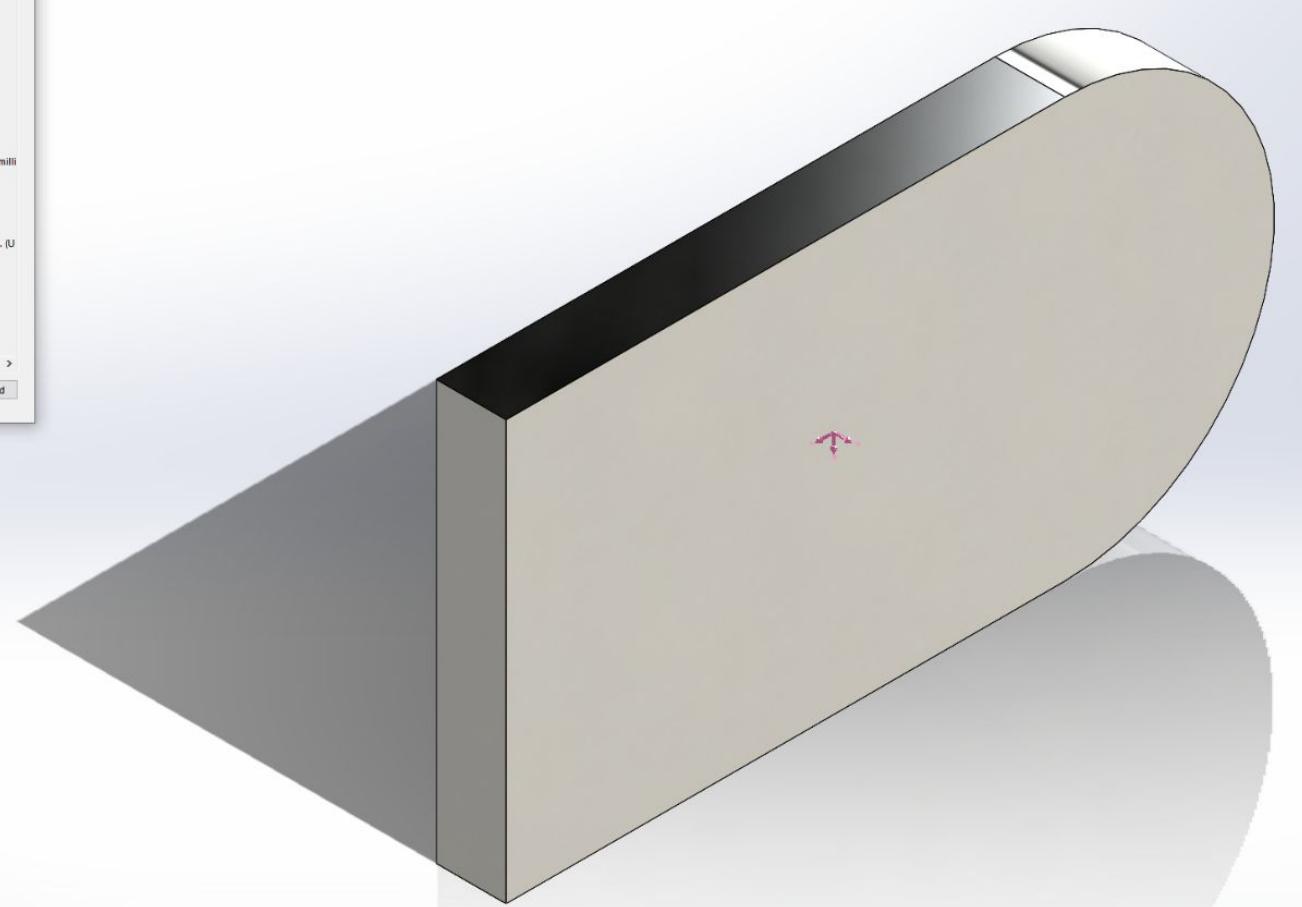
I couldn't get the blink code to run on my computer, I have a Mac. I had to use the computer in lab. Do you know why this could be happening? I followed the instructions as stated.

Click on the video^



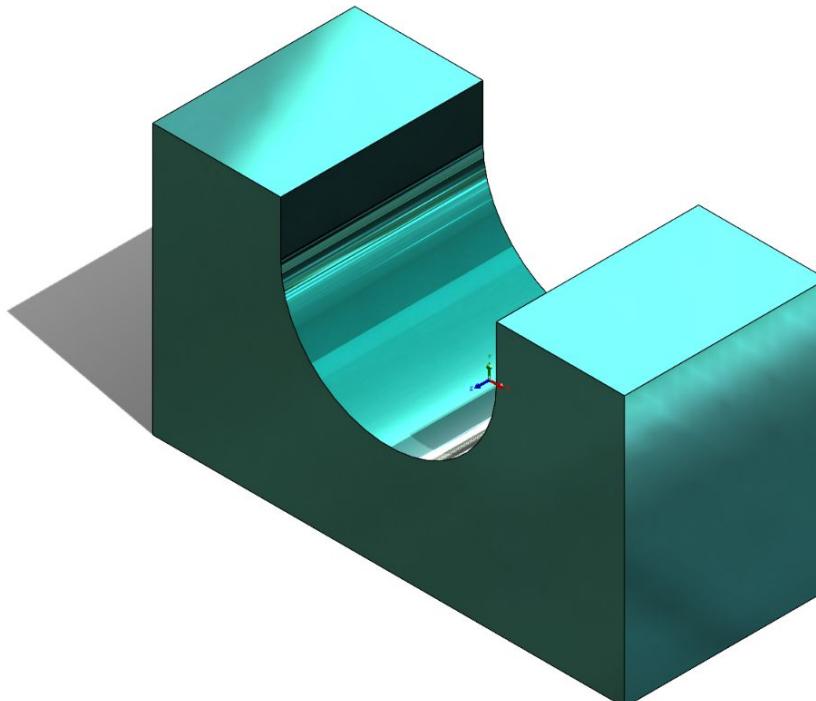
# PART 2

Density = 0.01 grams per cubic millimeter  
Mass = 484.67 grams  
Volume = 62137.17 cubic millimeters  
Surface area = 15569.91 square millimeters  
Center of mass ( millimeters )  
X = 5.00  
Y = 30.00  
Z = -52.00  
Principal axes of inertia and principal moments of inertia: ( grams \* square milli  
Taken at the center of mass:  
Ix = 0.00, 0.00, 1.00 Px = 141169.64  
ly = 0.00, -1.00, 0.00 Py = 447518.84  
lz = 1.00, 0.00, 0.00 Pz = 580610.66  
Moments of inertia: ( grams \* square millimeters )  
Taken at the center of mass and aligned with the output coordinate system. (U  
Lxx = 580610.66 Lxy = 0.00 Lxz = 0.00  
Lyx = 0.00 Lyy = 447518.84 Lyz = 0.00  
Lzx = 0.00 Lzy = 0.00 Lzz = 141169.64  
Moments of inertia: ( grams \* square millimeters )  
Taken at the output coordinate system. (Using positive tensor notation.)  
Ix = 2327231.74 ly = 72700.49 lz = -126007.96  
lyx = 72700.49 ly = 1770053.77 lyz = -756047.77  
lzx = -126007.96 ly = -756047.77 lz = 589489.30  
< >  
[Help](#) [Print...](#) [Copy to Clipboard](#)



# PART 3

Mass properties of EditingGeometry  
Configuration: Default  
Coordinate system -- default --  
Density = 0.01 grams per cubic millimeter  
Mass = 62649.88 grams  
Volume = 803205.53 cubic millimeters  
Surface area = 29792.92 square millimeters  
Center of mass: ( millimeters )  
X = 0.00  
Y = 85.55  
Z = 75.00  
Principal axes of inertia and principal moments of inertia: ( grams \* square millimeter )  
Taken at the center of mass  
Ix = 1.00, 0.00, 0.00 Py = 315222258.16  
Ly = 0.00, 1.00, 0.00 Pz = 918737222.94  
Lz = ( 0.00, 0.00, 1.00 ) Lz = 999022441.96  
Moments of inertia: ( grams \* square millimeters )  
Taken at the center of mass and aligned with the output coordinate system. (Iu)  
Ix = 1.00, 0.00, 0.00 Lx = 0.00  
Ly = 0.00, 1.00, 0.00 Ly = 918737222.94  
Lz = 0.00, 0.00, 1.00 Lz = 999022441.96  
Moments of inertia: ( grams \* square millimeters )  
Taken at the output coordinate system. (Using positive tensor notation.)  
Ix = 1.00, 0.00, 0.00 Lx = 0.00  
Ly = 0.00, 1.00, 0.00 Ly = 1271142781.66  
Lz = 0.00, 0.00, 1.00 Lz = 4019653525.26  
< >



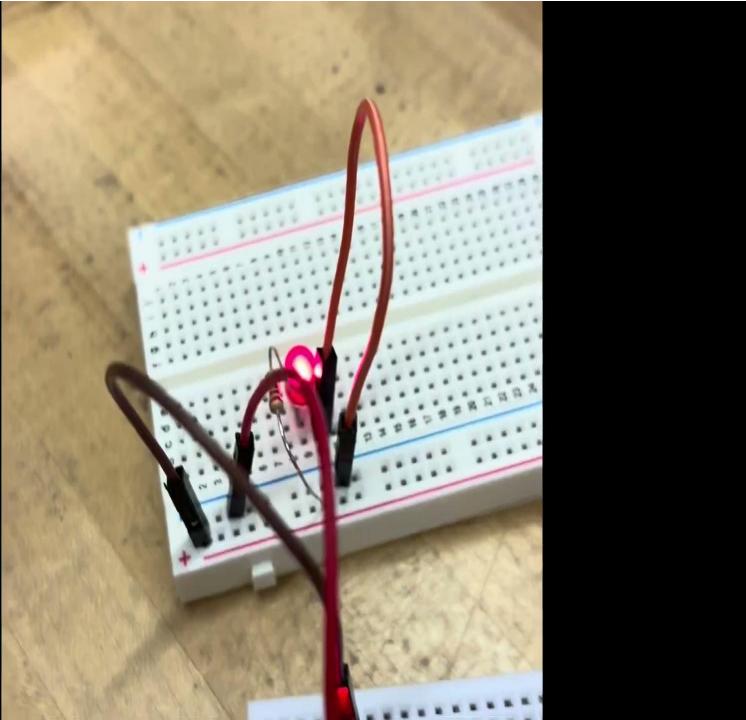
\*Isometric

Model | 3D Views | Motion Study |  
DJKS Education Edition - Instructional Use Only

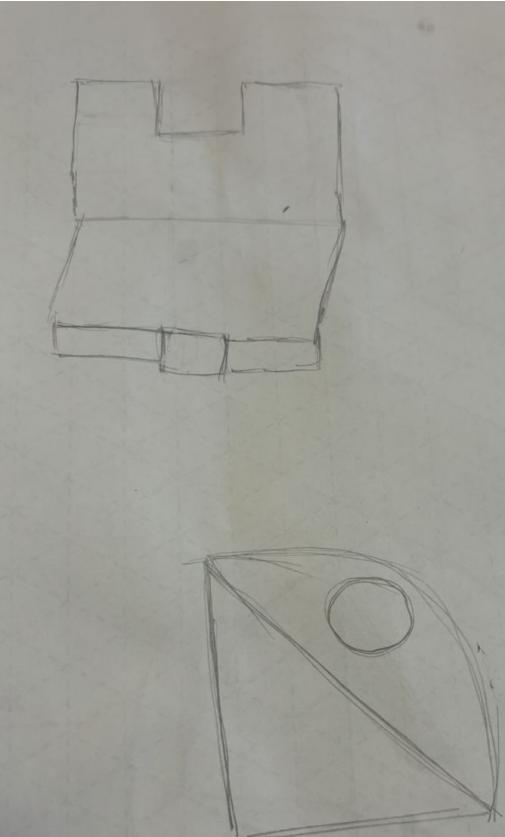
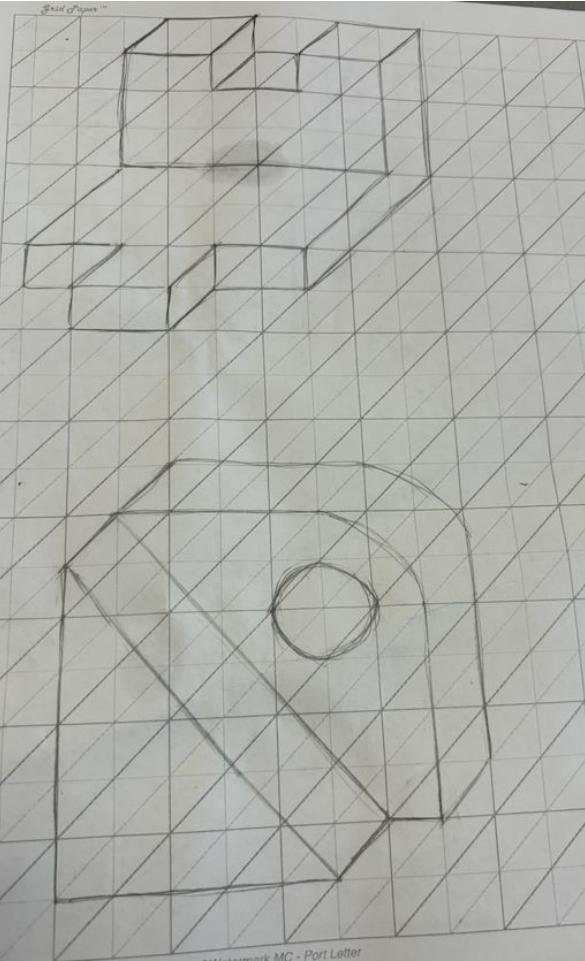
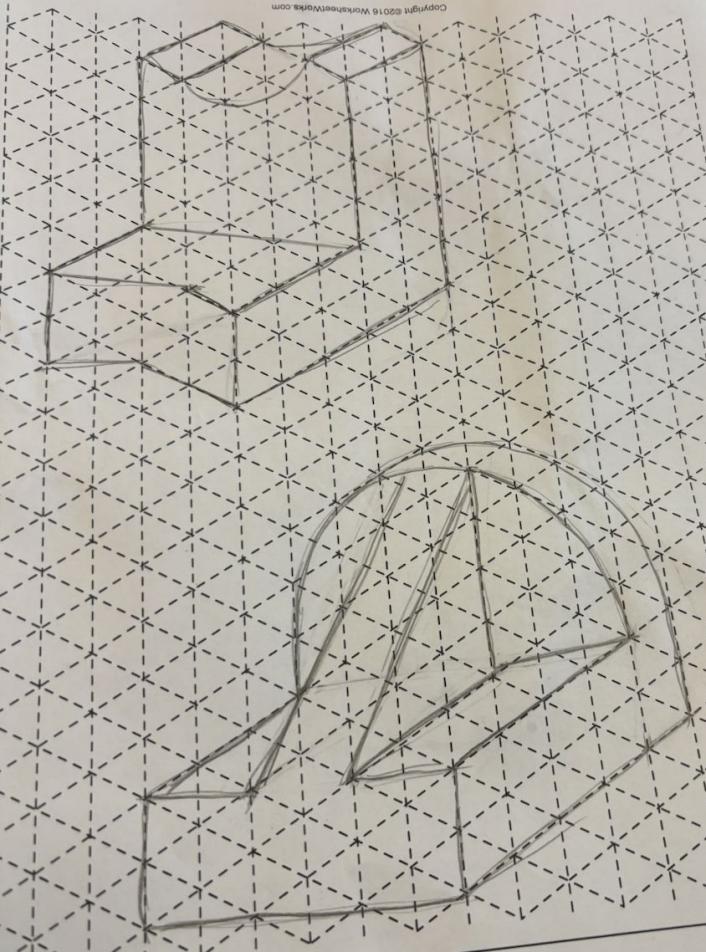
Type here to search



# ELECTRONIC ASSIGNMENT 2

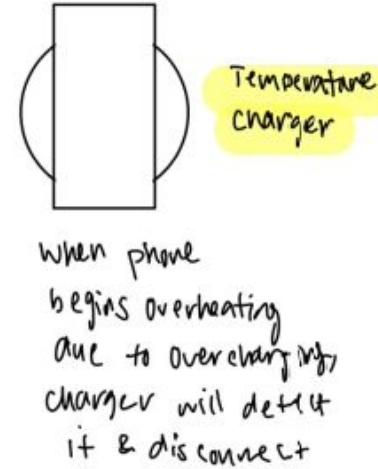
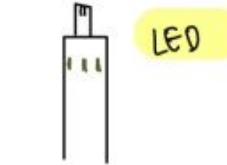
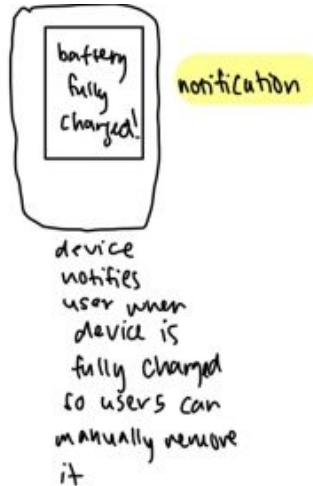
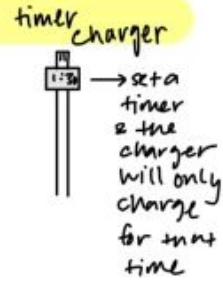


# SKETCHING 2



# INVENTIONS 3

## Link to Interview



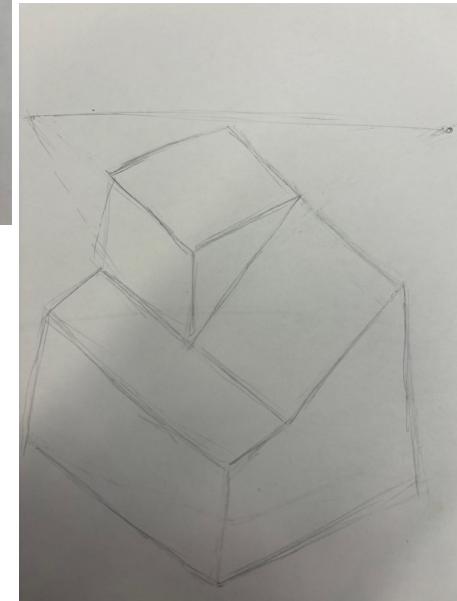
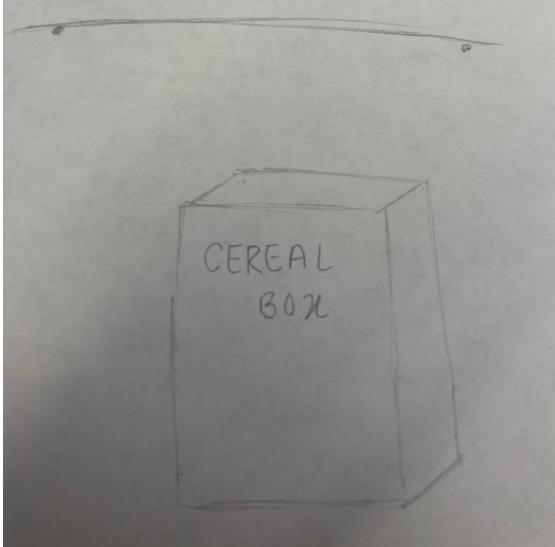
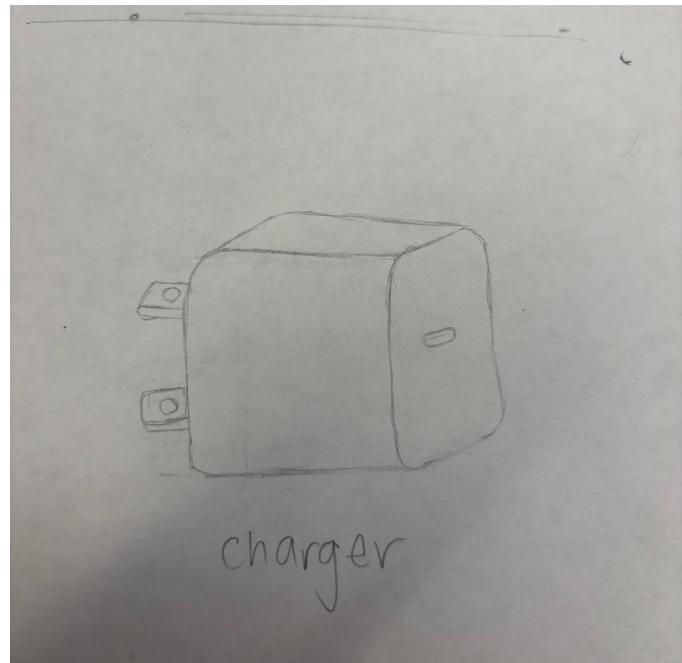
**charger durability:** material used to construct charger should be strong while being lightweight  $\Rightarrow$  plastic

**compatibility:** charger is compatible w/ various devices

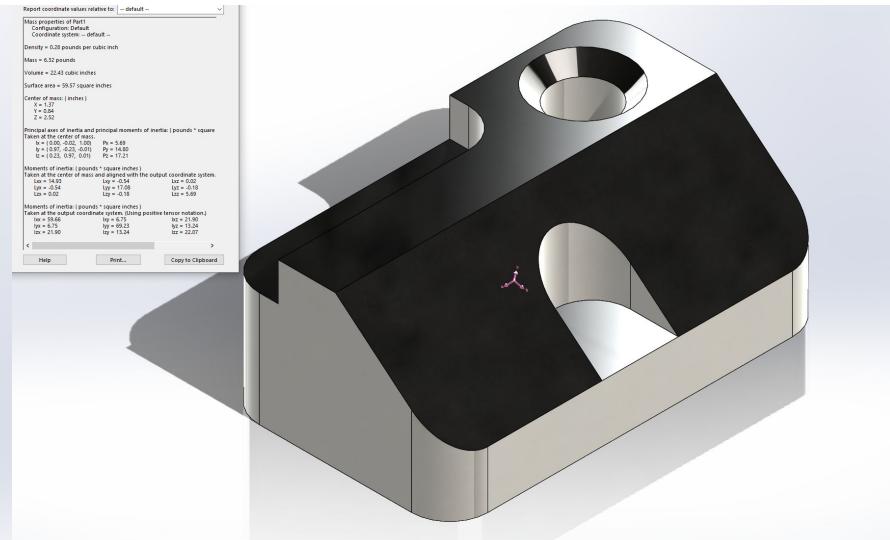
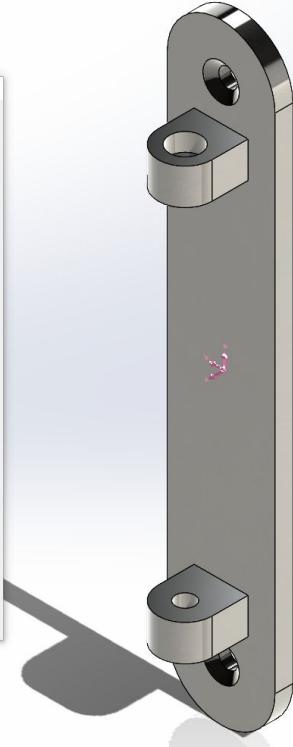
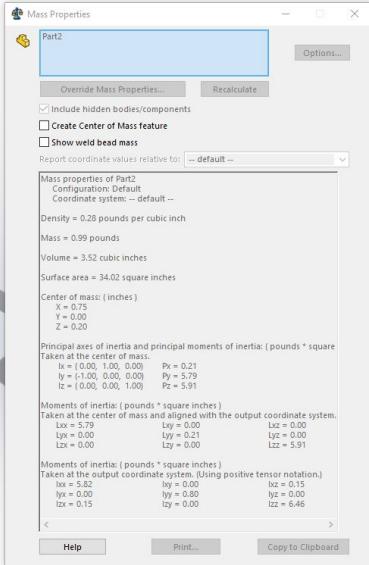
**timer:** user is able to set time easily, simple timers & microcontrollers necessary

This invention solves the problem of overcharging during the night by using a timer to stop the charging after a certain amount of time

# SKETCHING 3



# SOLIDPROFESSOR 3



# ELECTRONIC ASSIGNMENT 3

<https://youtu.be/U2SBd4vtJsQ>

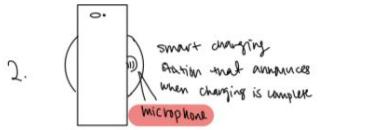
# INVENTIONS 4

- A. charger does not stop charging after battery is full.
- B. charger will be lightweight & strong
  - charger has a good quality timer
  - charger is compatible w/ various devices
  - C. → low voltage output
    - limited connectivity (usb, usbc)
    - may not be able to use all sensors necessary due to limited processing power

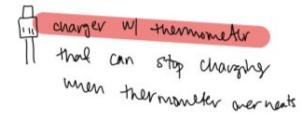
## Solutions



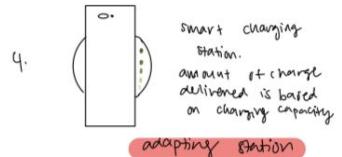
The phone itself stops charging when fully charged



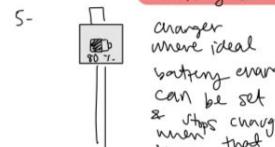
2.



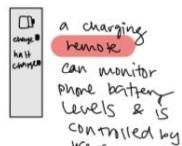
3.



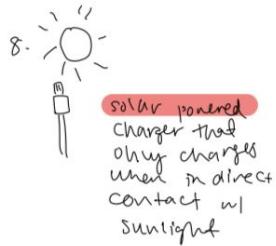
4.



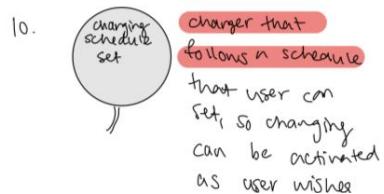
5.



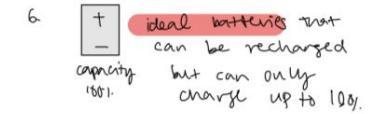
a charging remote  
can monitor phone battery levels & is controlled by user



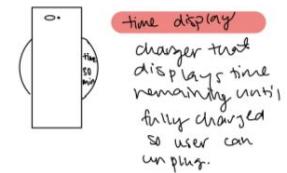
6.



charger that follows a schedule that user can set, so charging can be activated as user wishes



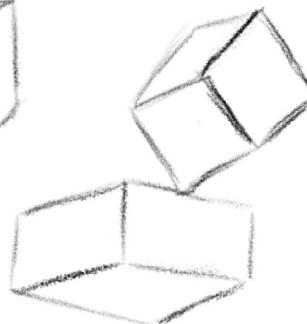
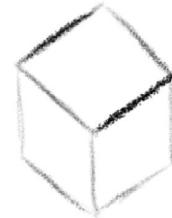
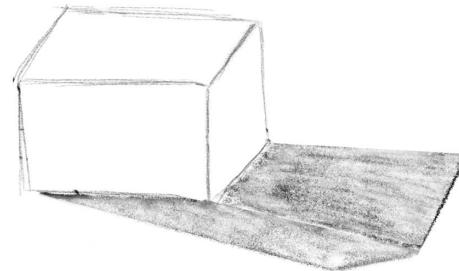
7.



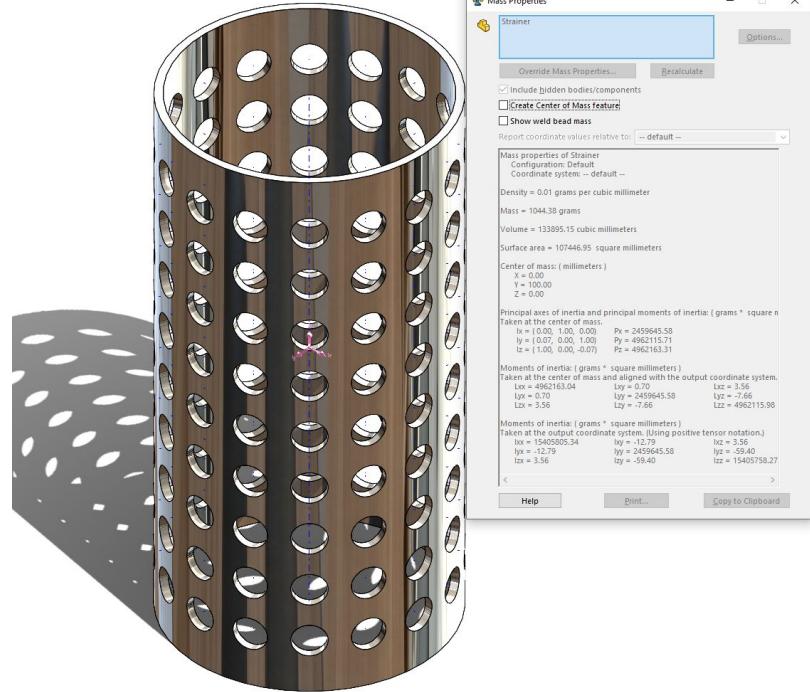
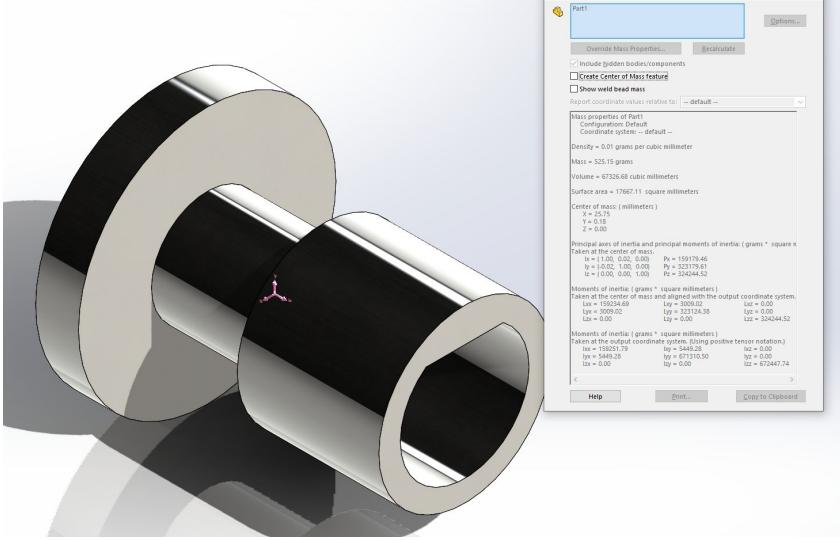
time display  
charger that displays time remaining until fully charged so user can unplug.

8.

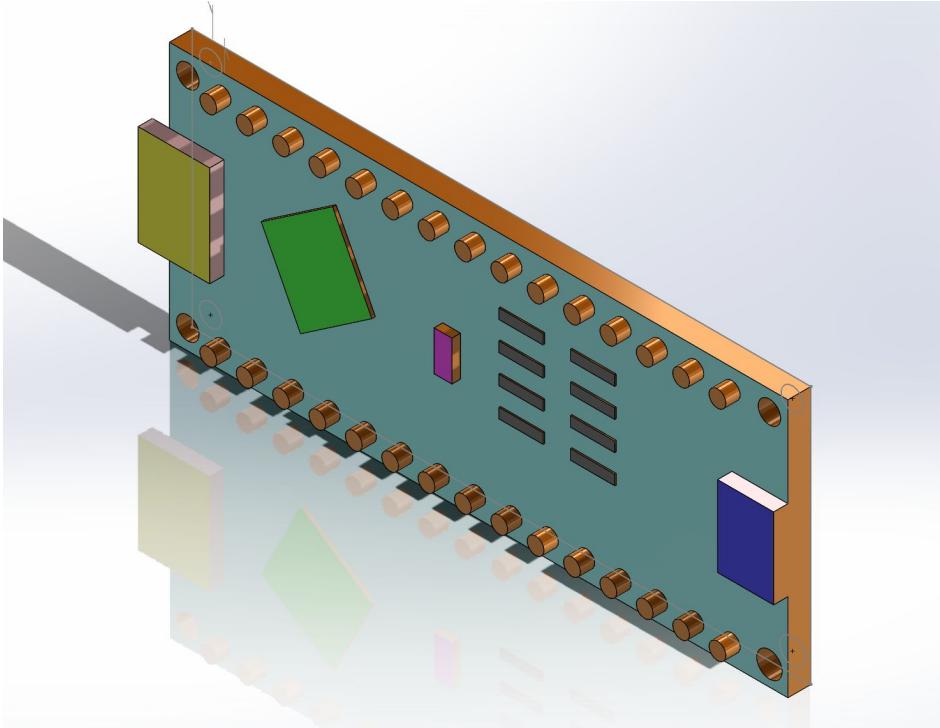
# SKETCHING 4



# SOLIDPROFESSOR 4



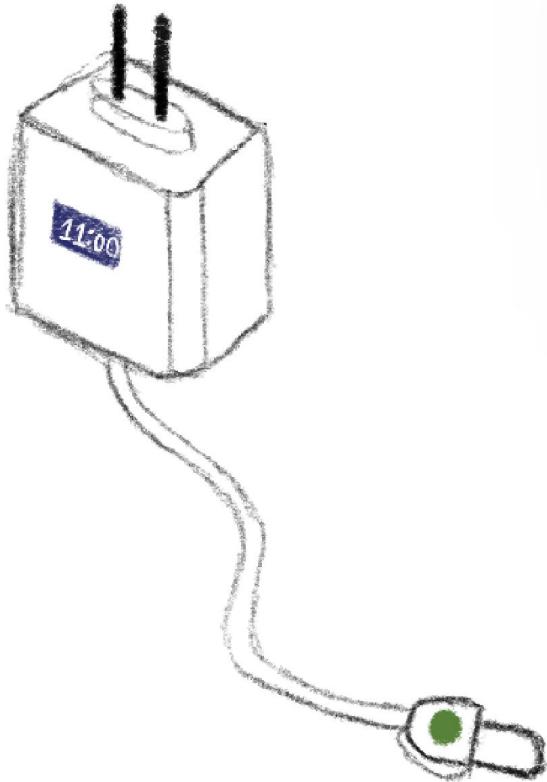
# CUSTOM PARTS 4



# ELECTRONICS ASSIGNMENT 4

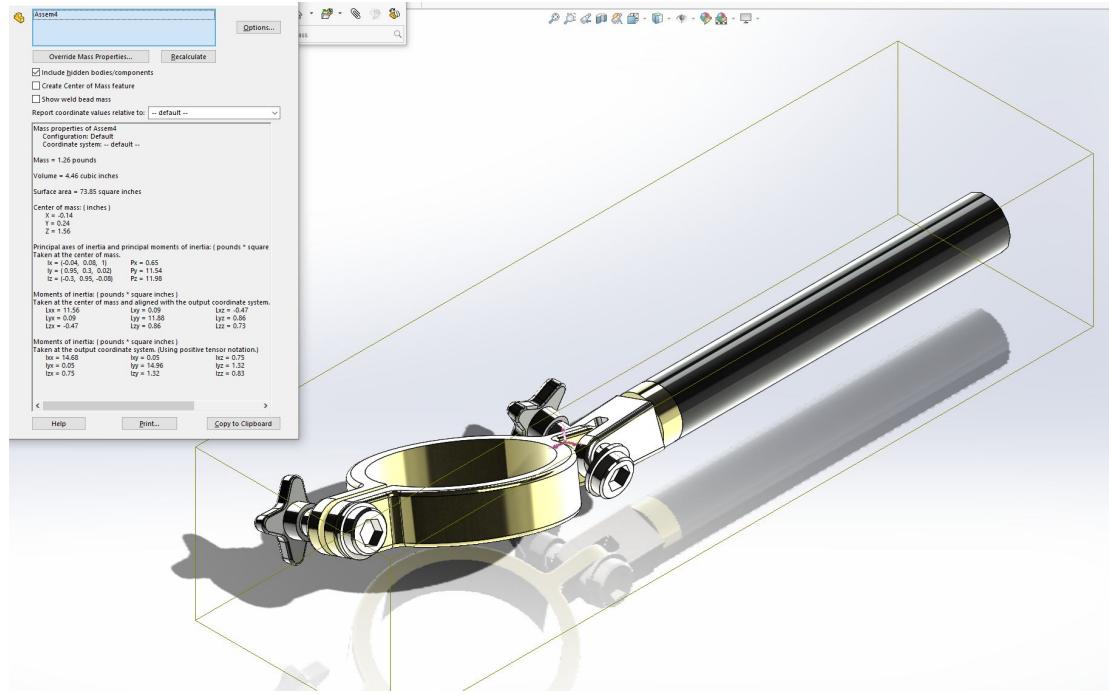
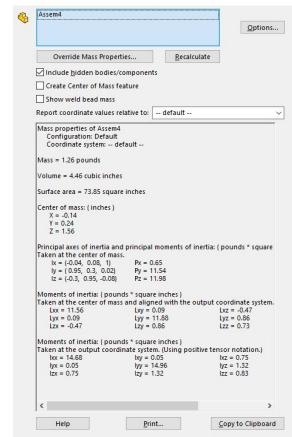
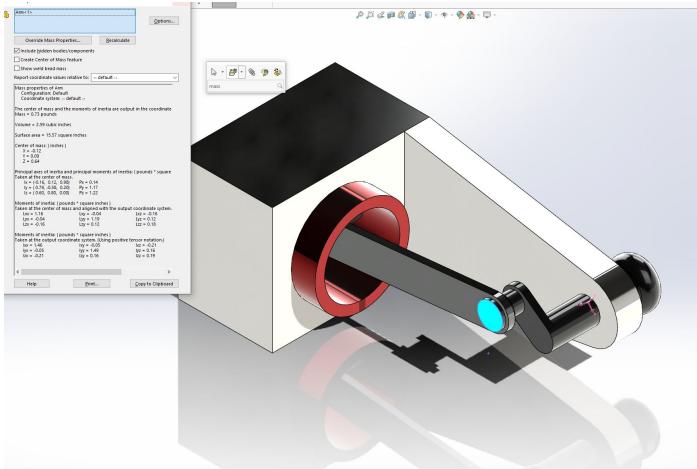
<https://youtu.be/90EMNxTCPk>

# INVENTIONS & SKETCHING 5

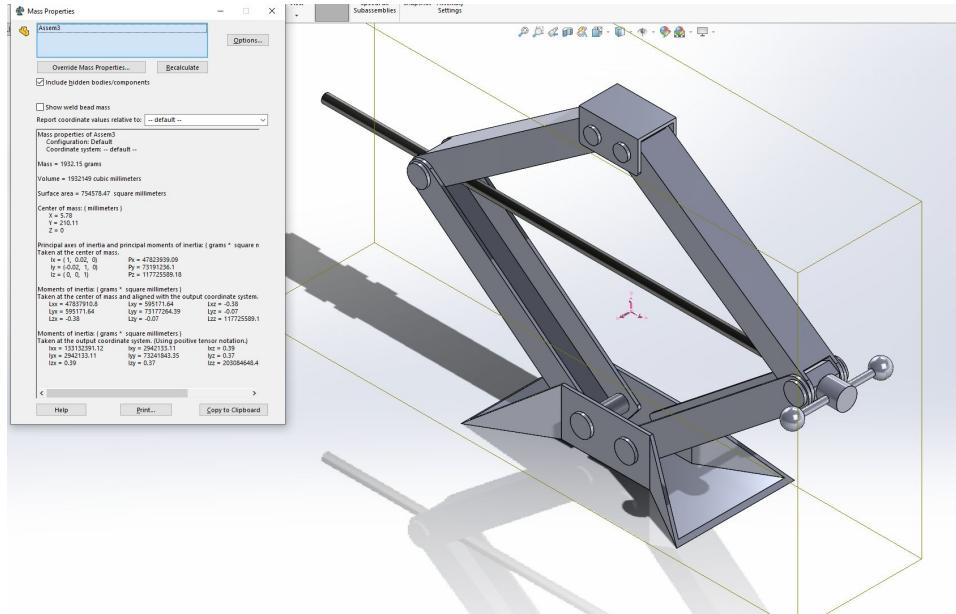


	Regular	new style	My design
Rate	s	-	s
cost	s	-	s
effort	+	+	s
materials	-	+	-
	Ø	Ø	-

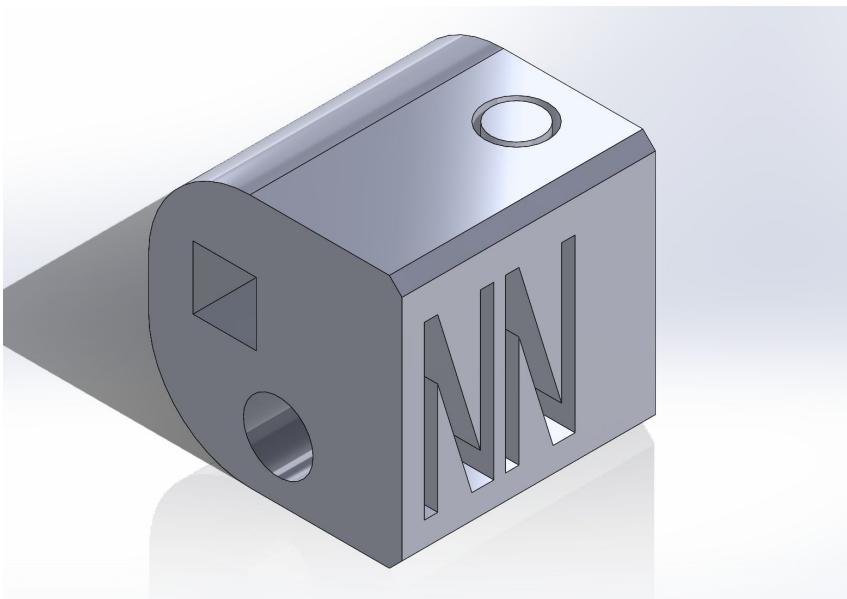
# SOLIDPROFESSOR 5



# SOLIDPROFESSOR 5



# CUSTOM PARTS 5



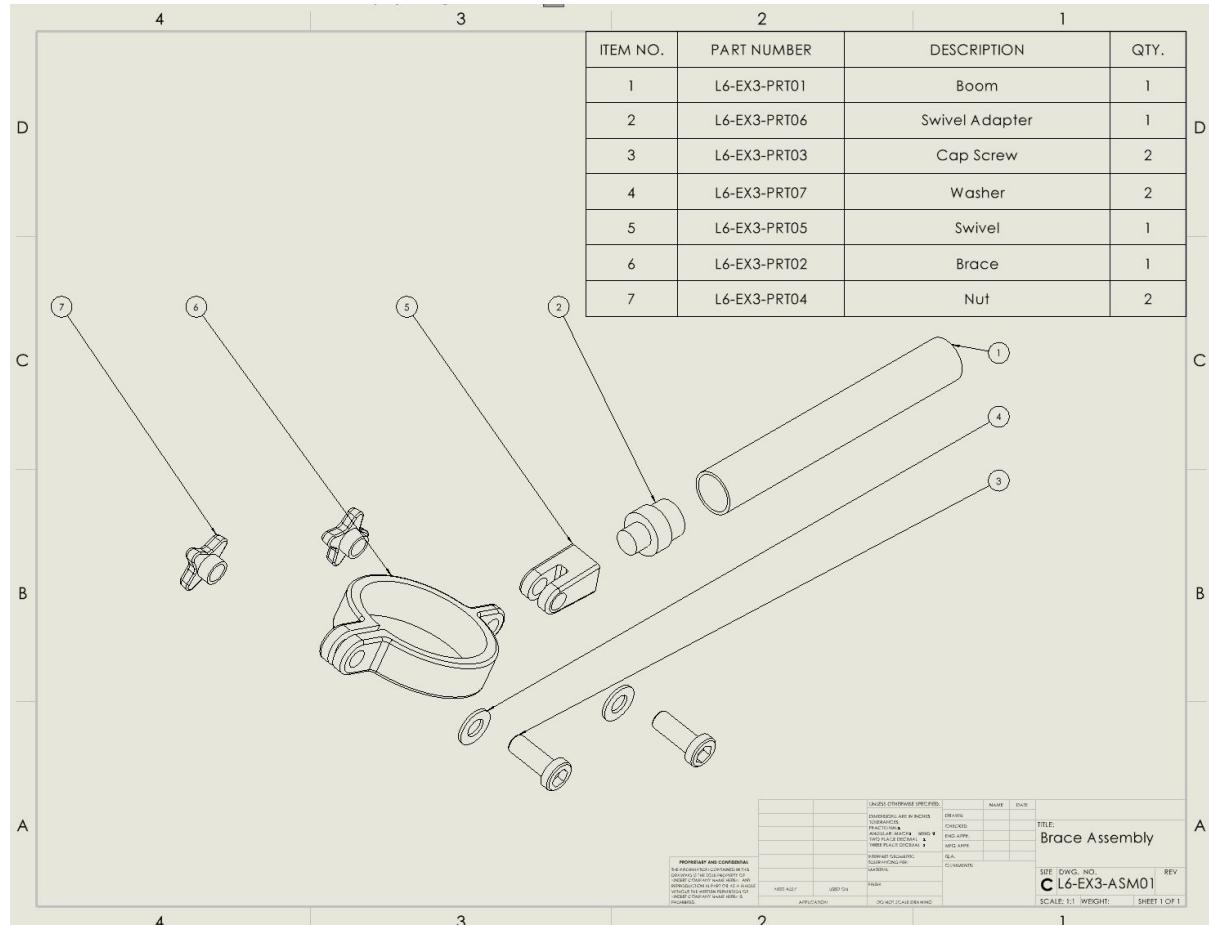
# ELECTRONICS ASSIGNMENT 5

<https://youtube.com/shorts/QeSzPPUhvGo?feature=share>

# ELECTRONIC ASSIGNMENTS 6

<https://youtube.com/shorts/P30A1-QDi6I?feature=share>

# SOLIDPROFESSOR 7



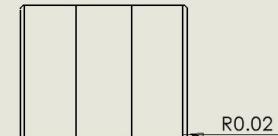
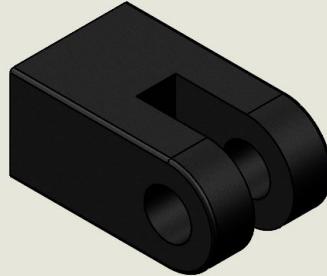
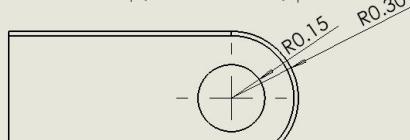
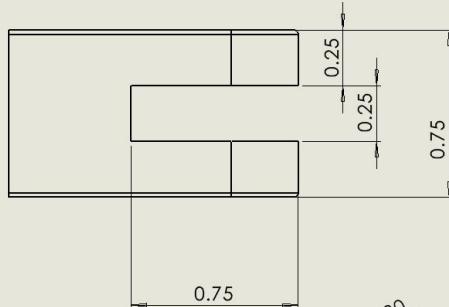
# SOLIDPROFESSOR 7



2

1

NOTE:  
ADD BLACK POWDER COAT FINISH TO FINAL PRODUCT



A

A

UNLESS OTHERWISE SPECIFIED:

NAME

DATE

TITLE:

CLEVIS

DIMENSIONS ARE IN INCHES  
TOLERANCES:  
FRACTIONAL $\pm$   
ANGULAR: MACH $\pm$  BEND $\pm$   
TWO PLACE DECIMAL $\pm$   
THREE PLACE DECIMAL $\pm$

INTERPRET GEOMETRIC  
TOLERANCING PER:

MATERIAL

COMMENTS:

NEXT ASSY

USED ON

FINISH

APPLICATION

DO NOT SCALE DRAWING

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

REV

SIZE

DWG. NO.

A

L6-BS1-01

SCALE: 2:1

WEIGHT:

SHEET 1 OF 1

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PROHIBITED.

2

1

# SOLIDPROFESSOR 7

4

3

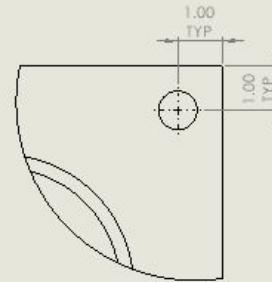
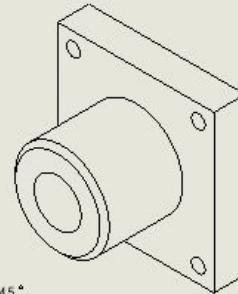
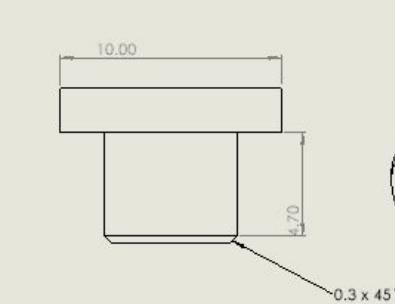
2

1

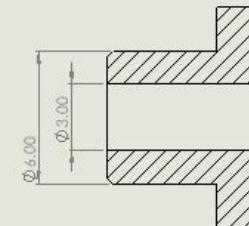
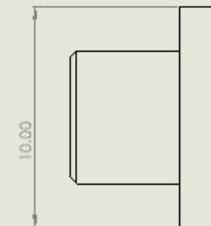
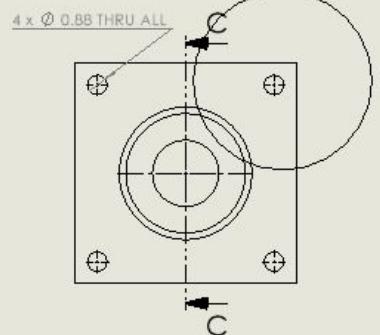
B

A

B



DETAIL B  
SCALE 1:2



SECTION C-C  
SCALE 1:4

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		UNLESS OTHERWISE SPECIFIED:		DRAWN	NAME	DATE	TITLE:	
		DIMENSIONS ARE IN INCHES		REVISION			HOLDER	
		FRAC'TNS IN INCHES		REV				
NEXT REV	USED ON	MATERIAL	COMMENT				SIZE	DWG. NO.
		BRASS					REV	B L6-INT2-21
							SCALE 1:4	WEIGHT:
								SHEET 1 OF 1

4

3

2

1

MEASUREMENT- 5 MM  
IN SOLIDWORKS.  
PART IS 0.2 MM LESS  
THAN EXPECTED



MEASUREMENT- 5 MM  
IN SOLIDWORKS.  
PART EXCEEDS  
DIAMETER BY 0.3 MM



MEASUREMENT- 5 MM  
IN SOLIDWORKS.  
PART IS 0.2 MM LESS  
THAN EXPECTED



CUSTOM PARTS 7



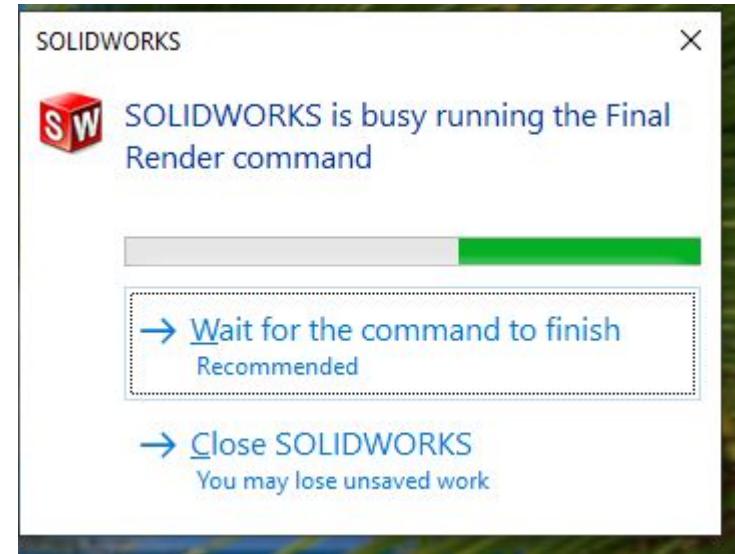
EDGES ARE INDENTED ON 3D PRINT UNLIKE THE ORIGINAL DRAWING. MAYBE BECAUSE OF THE CHANGING FROM HOLE TO SMOOTH SURFACE, THE TEXTURE CHANGES



THE CUT IS SERRATED, WHEN IN THE PICTURE, THE LETTERS ARE SMOOTH. LIKELY DUE TO THE LAYERING OF MATERIAL IN 3D PRINTER RATHER THAN A SMOOTH CUT

## 3-D Design

# SOLIDPROFESSOR 8



I promise i waited really long for the rendering, it just wouldn't work, and none of my work saved, so I took a ss, before I had to delete it. It had just taken upwards of 45 minutes. I promise I did it though:(

# SOLIDPROFESSOR 8



# INVENTION 8

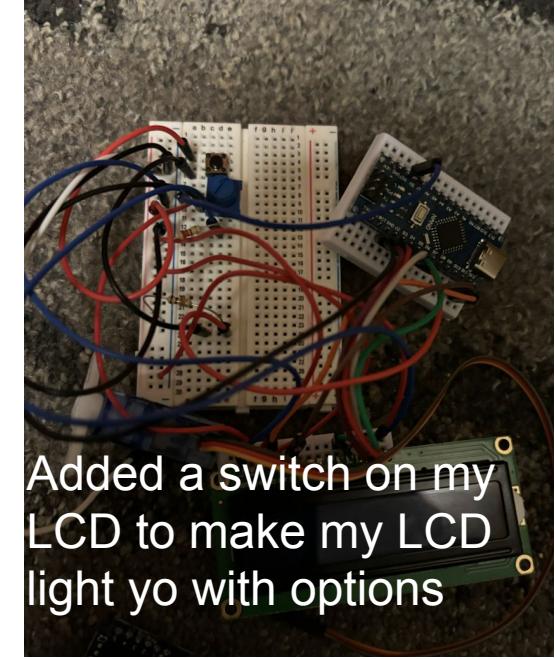
I soldered my  
accelerometer



For my video, I would video someone walking with the box and the steps increasing on the LCD monitor. I would also have them pressing the button, so you can see the switch to see different settings.

```
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);  
  
const int switchPin = 6;  
int switchState = 0;  
int prevSwitchState = 0;  
int reply;  
  
void setup() {  
lcd.begin(16, 2);  
pinMode(switchPin, INPUT);  
lcd.print("Steps");  
  
lcd.setCursor(0, 1);  
lcd.print("Speed!");  
}  
  
void loop() {  
switchState = digitalRead(switchPin);  
  
if (switchState != prevSwitchState) {  
if (switchState == LOW) {  
reply = random(8);  
lcd.clear();  
lcd.setCursor(0, 0);  
lcd.print(":");  
lcd.setCursor(0, 1);  
switch(reply){  
case 0:  
lcd.print("Yes");  
break;  
case 1:  
lcd.print("No");  
break;  
case 2:  
lcd.print("I'm not sure");  
break;  
case 3:  
lcd.print("I'm not sure");  
break;  
case 4:  
lcd.print("I'm not sure");  
break;  
case 5:  
lcd.print("I'm not sure");  
break;  
case 6:  
lcd.print("I'm not sure");  
break;  
case 7:  
lcd.print("I'm not sure");  
break;  
}
```

Updated  
code with  
switch



Added a switch on my  
LCD to make my LCD  
light yo with options

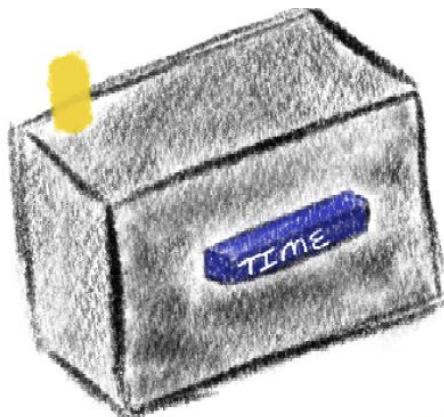
Need to connect  
accelerometer and  
LCD. Need to make  
a cardboard casing  
for accelerometer



# INVENTION 10

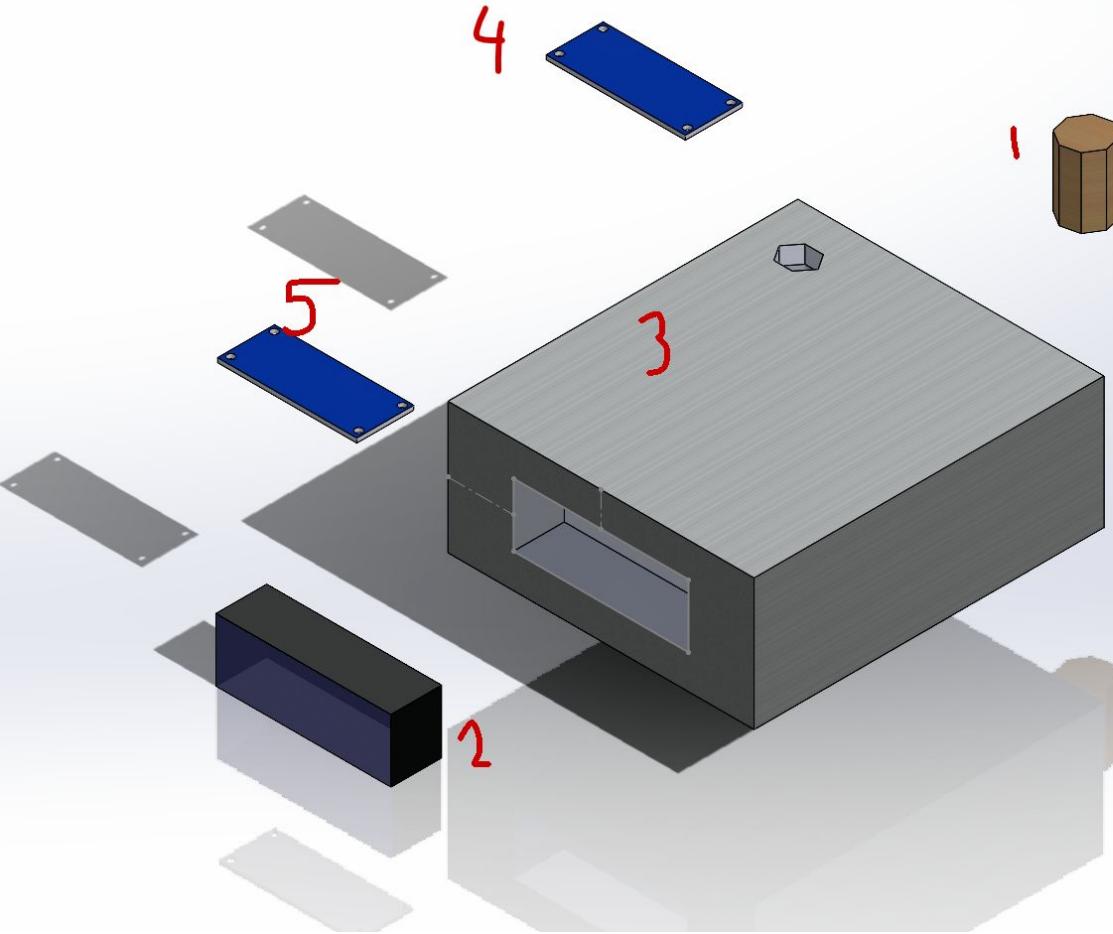
Link to Video: <https://youtu.be/2CX4IQQ2ZJ0>

Initially, I was hoping to make a pedometer, which would track steps. But I felt that was too common and when I was testing the accelerometer, I realized that it was not as sensitive, and it worked better when reps were taken: lunges, squats, etc. So I decided to re-purpose it because the equipment was also not small enough to go around the ankle where the steps could've been measured easier. I used the Arduino Project Book code for project 11, and I wired the LCD really similarly, so I could use a button to display different things on the LCD. Rather than the male-to-male wires, I used female-to-female to connect the LCD to Arduino Nano.

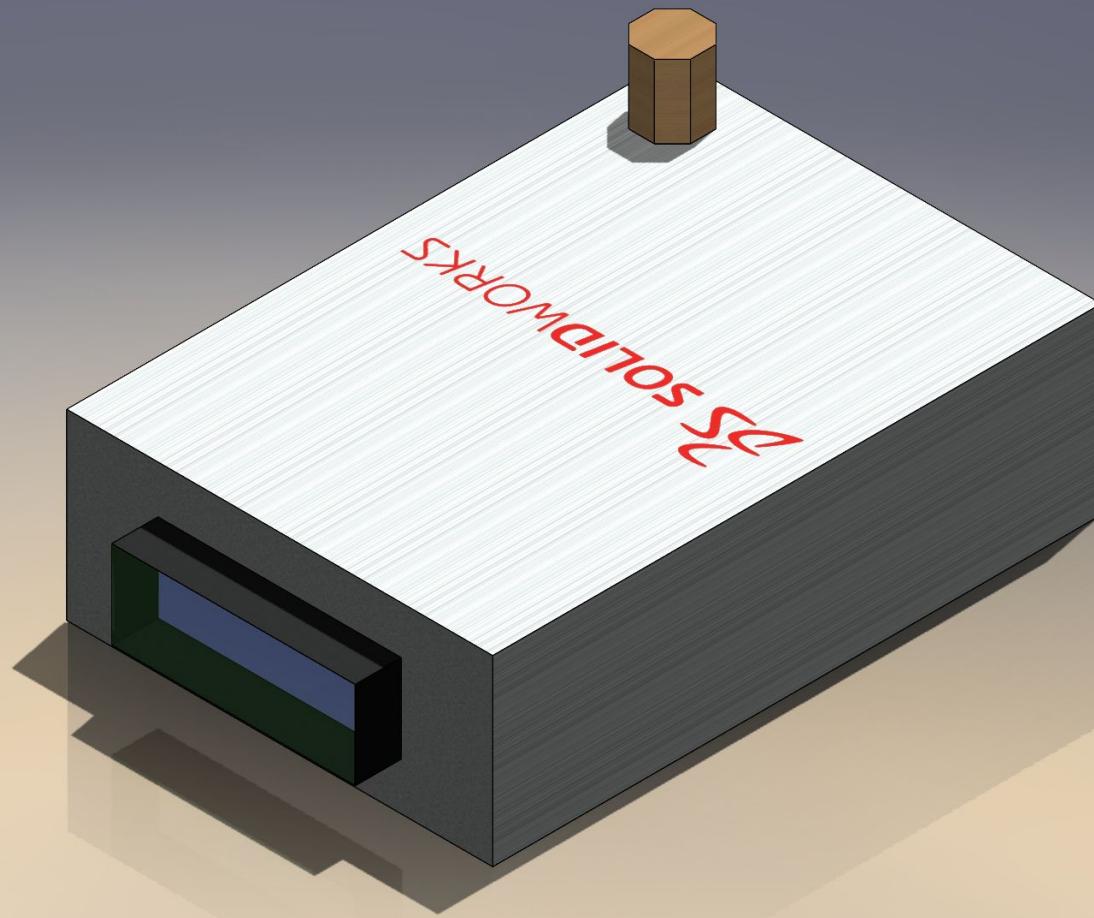


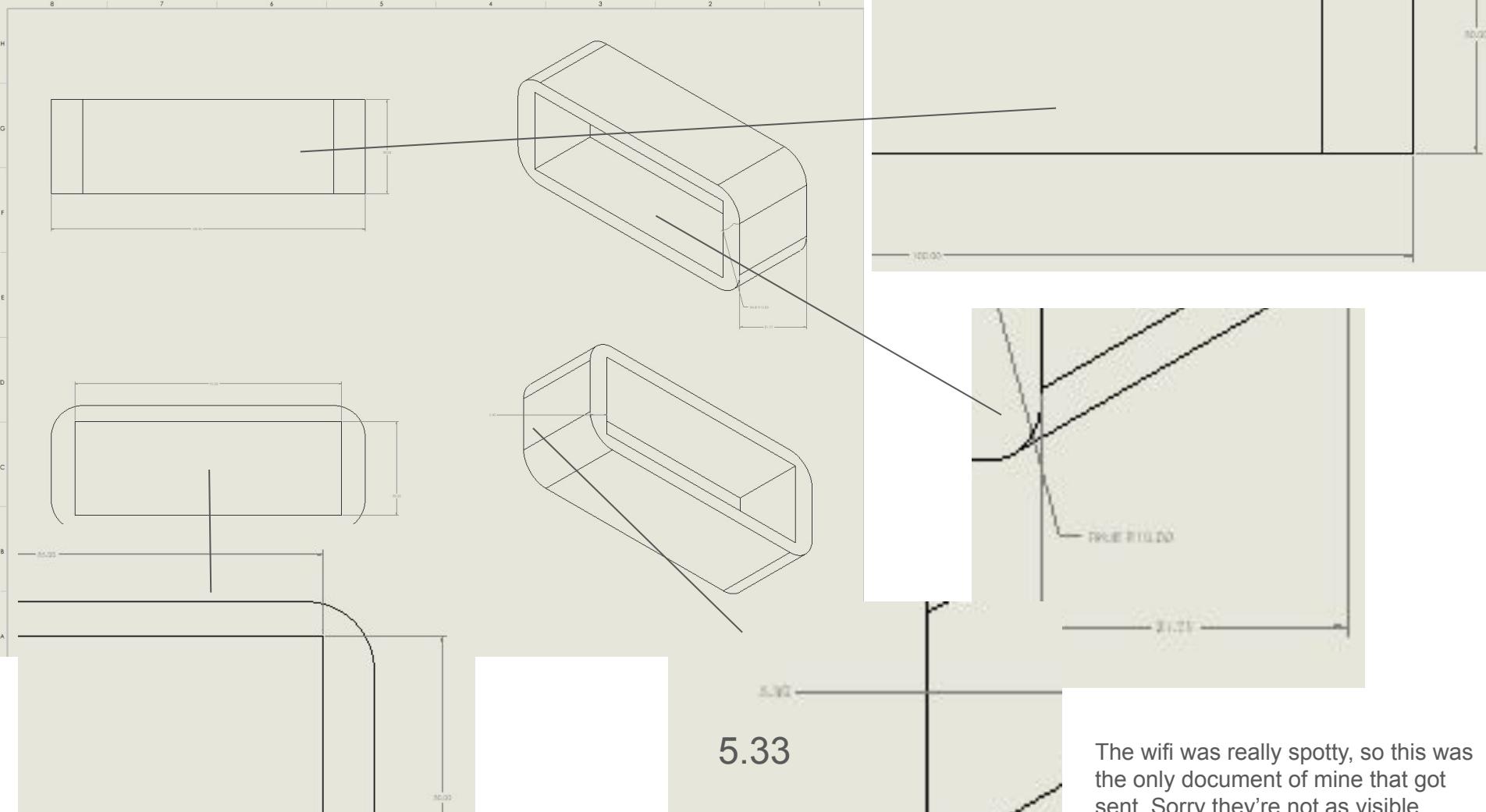
LCD SCREEN: displays timely messages & reps  
Box: contains circuit pieces neatly inside,  
making it user friendly

Button: for user interaction



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BUTTON	Allows user interaction	1
2	LCD	Displays data	1
3	BOX	Holds arduino components	1
4	ACCELEROMETER	Tracks reps	1
5	Arduno		1





5.33

The wifi was really spotty, so this was the only document of mine that got sent. Sorry they're not as visible

# 3-D Printed Part

